

# TANZANIA

## crisis and struggle for survival

Edited by  
Jannik Boesen  
Kjell J. Havnevik  
Juhani Koponen  
Rie Odgaard



## **Tanzania – crisis and struggle for survival**

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Scandinavian Institute of African Studies, Uppsala 1986

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# Acknowledgements

The idea behind this book was first discussed by Tanzania researchers at the Centre for Development Research in Copenhagen and the Chr. Michelsen Institute-DERAP in Bergen during 1982. These discussions were based on the premise that the Nordic countries have many researchers with a long time commitment to Tanzania who ought jointly to contribute to the public debate at this **crucial** juncture of crisis and struggle for survival in Tanzania.

The first concrete plans for the book were formulated at a meeting of some 20 prospective contributors in Bergen in January 1983, where an editorial committee was also established. Writing – and securing the financial basis for going ahead – took **more** time than expected, but in June 1985 the contributors could meet again to discuss the draft articles, this time in Uppsala at the Scandinavian Institute of African Studies who together with the Institute of Development Studies in Helsinki had joined the project. The subsequent year involved editing and rewriting to make all contributions fit the framework of the project.

The editorial group wishes to take the opportunity to thank all our research colleagues who have contributed their knowledge and time to this project. We also very much appreciated the help provided by Turi Hammer, Arve Ofstad, Michael Loft, Ellen Hanak and Jesper Linell in the early phases and Margaret Cornell, Anchy de la Garza, Jerk-Olof Werkmaster and in particular Karl Eric Ericson in the later stages.

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Finally there are partners without whom this whole endeavour would clearly have been impossible, the whole range of Tanzanian institutions to which all contributors have been attached, and the Tanzanian colleagues and friends who have supported us in often long and fruitful research cooperation.

While many people have thus been involved in one way or another, the editors and the individual contributors must bear the sole responsibility for the final outcome; the editors for the overall structure and the introduction and the various authors for their individual contributions.

*Bergen, Copenhagen, Helsinki and Uppsala, August 1986  
Jannik Boesen, Kjell J. Havnevik, Juhani Koponen and  
Rie Odgaard (the editorial group)*

# Contents

Acknowledgements

Preface 8

Basic facts on Tanzania 13

Maps 14

1. Introduction 19

*The editors*

2. Population growth in historical perspective—the key  
role of changing fertility 31

*Juhani Koponen*

3. The creation of macroeconomic imbalances and a  
structural crisis 59

*Knud Erik Svendsen*

4. Growth and crisis in the manufacturing sector 79

*Rune Skarstein*

5. Eating the carrot and wielding the stick: The  
agricultural sector in Tanzania 105

*Phil Raikes*

6. Soil erosion and conservation in the drylands 143

*Carl Christiansson*

7. Wood—the other energy crisis 159

*Per Nilsson*

8. The development of agricultural mechanisation 173

*Finn Kjærby*

9. The Green Revolution in the Southern Highlands 191

*Torben Rasmussen*

10. Tea—does it do the peasant women in Rungwe any good? 207

*Rie Odgaard*

11. Grain for livestock and livestock for grain.

Are the agro-pastoral Iramba marginalising themselves? 225

*Jan Lindström*

12. Pastoralism under pressure: The Ngorongoro Maasai 239

*Kaj Århem*

13. No sugar—no tea! A women's cooperative in a crisis.

Experiences from Manyoni 253

*Ulla Vuorela*

14. A resource overlooked--crafts and small-scale industries	269
<i>Kjell J. Havnevik</i>	
15. State, donors and villagers in rural water management	293
<i>Ole Therkildsen</i>	
16. Health services: Official and unofficial	309
<i>Harald Kristian Heggenhougen</i>	
About the authors	319
Abbreviations	324

# Preface

This is a book by Nordic scholars about Tanzania in crisis and crisis in Tanzania. It focuses on the **post-1978/79** situation in the country, which is understood as the crisis, and seeks manifestations of and responses to it. However, the study is not limited to the crisis period but also examines the longer-term causes of the crisis and endeavours to map possible ways ahead. Thus, in addition to the crisis itself and its causes, it deals with ways and attempts to overcome it—in other words to survive. Based on first-hand empirical research conducted by Nordic scholars in and on Tanzania, the contributions join in the ongoing 'Tanzania debate' from the angle provided by such research. Yet the book is not meant primarily for other researchers but has been written with the "interested and informed reader" in mind – whether in government departments, development agencies, the information media, educational institutions or the like, in Tanzania, in the Nordic countries and elsewhere.

## A BOOK ABOUT TANZANIA – BY NORDIC RESEARCHERS

The need for a more general and all-round book on Tanzania and its crisis should be obvious. Because of the widespread interest in its indigenous policies, Tanzania, especially since the Arusha Declaration of 1967, has generated much discussion and research both inside and outside the country, and there now exists a flourishing literature on its development experience during the 1960s and 1970s. With the onset and deepening of the crisis, the debate on Tanzanian development has intensified and the contours of the arguments have sharpened. But the literature on the crisis period and the reasons for and responses to the crisis remain diffuse and scanty. Most of the more thorough analyses of Tanzanian development come to a halt at the threshold of the crisis, and very few discuss the years after 1980.

This is not owing to a lack of research and writing on Tanzania during the crisis. Studies have certainly continued and probably even increased, and within the African context Tanzania has remained remarkably open to independent research both by domestic and foreign scholars. But access to the results of the recent research has been limited. Partly this reflects the normal academic time-lag; it takes time before the findings of narrowly defined local or thematic studies percolate through from discussion papers and learned journals to more general and popular discussion. But this is hardly the only explanation. Inside Tanzania, crisis conditions have made



## PREFACE

not only research but also publication of its results exceedingly difficult. Even more importantly, many of the more recent studies of the country are in fact not aimed at the interested public in general. Rather, they have been heavily biased towards the needs of decision-makers inside the Tanzanian state and in external donor agencies, and are often reserved for their exclusive use. The major base-line studies on the Tanzanian economy and agriculture, with dozens of more specialised studies carried out by the staff of the World Bank, are available "for official use only". A myriad of research and consultancy reports with restricted distribution are circulating inside and around aid agencies. Not all of them are classified as confidential, and researchers, especially outside Tanzania, may gain access to them. Nevertheless, they tend to remain unnoticed by the more general reader and outside public discussion.

The present book can be seen as an attempt towards diminishing the academic time-lag and bridging the gap between policy-centred research and public discussion on the part of the Nordic Tanzania research community. It is based on first-hand studies on and in Tanzania by the Nordic researchers involved. Most of the research has been undertaken inside the country in cooperation with Tanzanian scholars and institutions. The results of some of the studies have already been made available elsewhere in a more extended form, while others are presented in this volume for the first time. Common to all contributors is a long-term commitment to Tanzanian studies and a desire to bring their research out of its narrow administrative or academic surroundings and make its main results more accessible to interested readers.

Basically, what we are trying to do in the book is to summarise the main insights we have gained from our studies and assess their implications for Tanzanian development at this crucial juncture. The exercise is academic in the sense that it emphasises analysis of the manifestations and causes of the crisis instead of focusing on policy prescriptions as to what should be done. However, all the contributions have been written with an eye to having a degree of "policy-relevance." We believe that thorough analysis is a prerequisite for successful policies, and even when the analysis cannot lay down what ought to be done the discussion may help to indicate what ought *not* to be done.

It was intended that the book, while consisting of separate articles, should provide a comprehensive, and hopefully coherent, view of the Tanzanian crisis. Unfortunately we cannot regard the result as wholly satisfactory. There are several gaps in its thematic coverage. Perhaps the most conspicuous is the lack of a separate discussion on the Tanzanian state and other decision-making structures, despite their pertinence to the book as a whole and to all its individual contributions.

The absence of chapters on this and other vital issues such as nutrition

and education, which were originally intended to be included, stems from the unavailability of suitable contributors. The book is based on research conducted by Nordic scholars in Tanzania over the last ten years or so? Not all the themes have been given an equal amount of attention by them during this period and not **all** the Nordic scholars have been able to contribute to this book.

However, some of the gaps are intentional: for example, the absence of a separate chapter discussing Tanzanian women in the general context of the crisis. In regard to women, our aim was to give them adequate treatment in all the relevant contributions. The same applied to a few other major themes which cut across the **sectoral** boundaries according to which the main part of the book was organised – such as foreign aid and transport. We feel this treatment has been at least partially successful.

The initiative for the book came from researchers attached to the Centre for Development Research in Copenhagen and the Chr. Michelsen Institute-DERAP in Bergen. The Scandinavian Institute of African Studies in Uppsala was also involved at an early stage. These three institutes, together with the Institute of Development Studies at the University of Helsinki, have remained the backbone of the project even though several contributors are based outside them. The initiators, while representing different academic subjects and different political views, shared a basic sympathy with Tanzanian aims and ideals, though they took a critical view of many of the ways in which they have been implemented. However, they were also unable to agree with much of the latter-day sweeping criticism of Tanzanian policies.

The common background helped to make the book a cooperative project in the true sense of the word. Plans and drafts were discussed in two workshops open to all participants which were held in Bergen in January **1983** and in Uppsala in May **1985**. The editorial group has further structured the book and discussed the contributions with the authors. In all cases, however, the final say on individual chapters has remained with the respective authors.

As the book was taking shape and certain gaps in it became evident, a discussion arose within the project as to whether it should be kept strictly Nordic or whether its basis should be extended, with an invitation either to Tanzanian scholars or to any scholars who shared the basic point of departure of the original group. As can be seen, the original plan was adhered to. This was mainly for practical reasons. It was difficult enough to produce a book with both contributors and editors living in several countries even though they were not very distant from each other either geographically or culturally. But there was also some inclination to preserve the Nordic flavour of the book and to provide a view from outsiders who were at the same time sympathetic and critical of Tanzanian development experience.

## PREFACE

However, we must emphasise that, whatever views we hold, they could not have emerged without extensive cooperation with Tanzanian institutions and the generous sharing of **insights** by Tanzanian colleagues. Much of the research on which the contributions are based was undertaken in cooperation with Tanzanian scholars and most authors have discussed their articles with colleagues in Tanzania and elsewhere.

Thus, the book is a Nordic venture mainly because its contributors come from the four Nordic countries, Denmark, Finland, Norway and Sweden. This, in turn, must be seen in the context of the special relationship that has developed between Tanzania and the Nordic countries during the past twenty years. In the late 1960s Tanzania emerged as a main partner in the considerable development cooperation programmes of the Nordic countries and has retained that position ever since. This led to an increased interest in Tanzania and made it one of the best-known developing countries in Scandinavia.

The history of the development of this relationship is still to be written. No doubt its structural background must be sought in the growth and internationalisation of the basically capitalist Nordic economies. There is a strong element of self-interest in development cooperation in the Nordic countries as elsewhere. However, the choice of Tanzania on the part of the Nordic countries can hardly be explained by motives of immediate economic interest and profit. Several other factors were obviously at work. Old missionary contacts may have played a part but a stronger explanation is probably provided by the political and ideological climate of the Nordic countries and its correspondence with the ideals that were formulated for Tanzania by Julius Nyerere: non-racialism, self-reliance and a non-Marxist brand of socialism. Different parts of Tanzanian ideology and policies had a strong appeal in different sections of Nordic public **opinion** from liberal right to radical left, and given the good conditions for development cooperation provided by the growing economies, the Tanzanian 'experiment' was widely supported.

In the 1980s much has changed. Economic growth has slowed down and Nordic aid budgets are now mostly stagnating. On the other hand, the much-publicised economic set-backs and failures of more ambitious development programmes in Tanzania have aroused also in the Nordic countries a fair amount of criticism of Tanzanian domestic policies and the role of development cooperation in Tanzania. Whereas in the heyday of the Nordic-Tanzania honeymoon, if there was any criticism at all, it often came from researchers and others with grass-root acquaintance of Tanzanian realities, e.g. the implementation of **villagisation** and abolishment of cooperatives, which were found not to correspond with declared policies and ideals. An increasing amount of the present complaints are on the contrary originating from much broader parts of the political spectrum and they draw on

very different ideological premises and personal experiences in questioning the whole basis of Tanzania development policies. This change of opinion was reflected in the fact that while the Nordic countries first tried to seek a mediating position in the confrontation between Tanzania and the International Monetary Fund and were unwilling to cut their development funds as much as many other Western countries and agencies did, in the end they sided with the demands of the IMF and in this way contributed to push the Tanzanian government towards an agreement with the Fund.

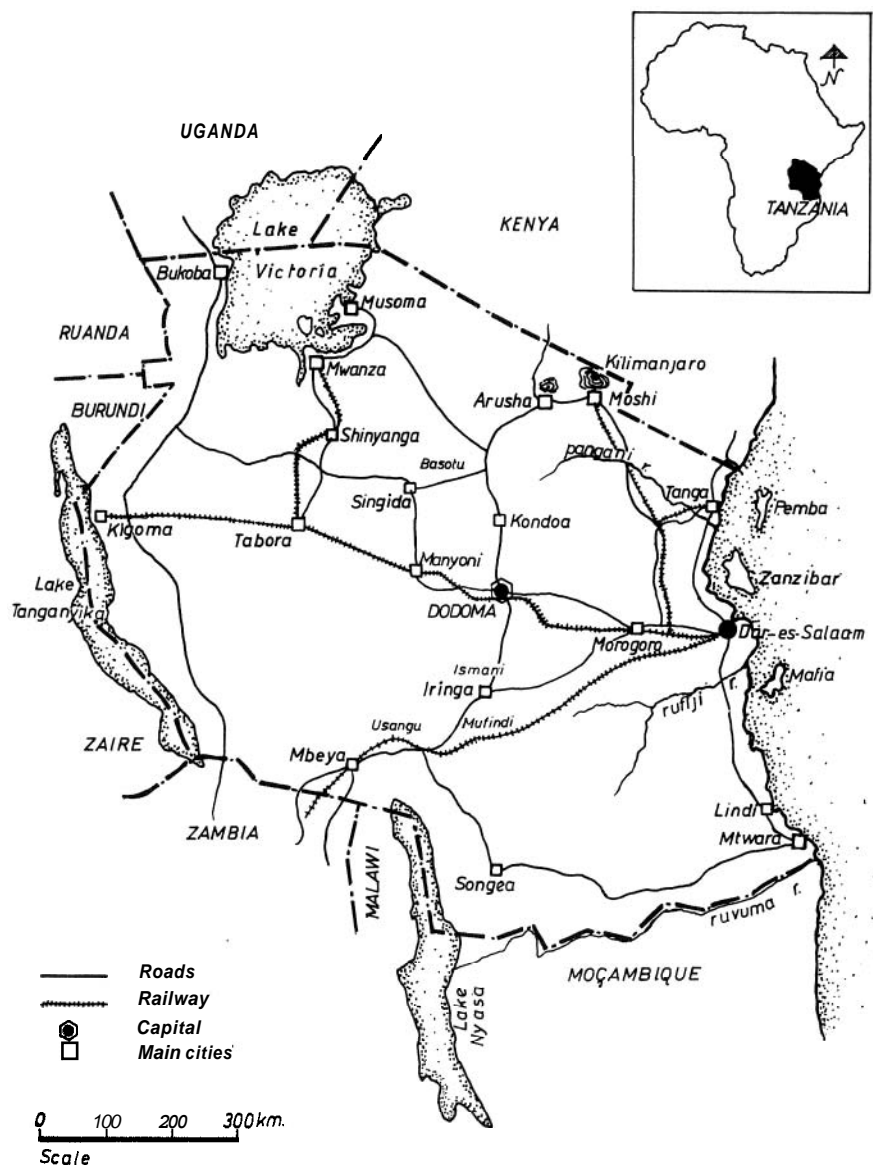
One strand of the development of Tanzania-Nordic relationship has been a mutual growth of knowledge of each other's ideas and ways of life, of which also this book, hopefully, can be seen as an expression. However, the editors and other contributors of the book are well aware of the enduring fragility of the data base and the questionability of many of the opinions on Tanzanian developments, both the earlier more rosy ones and the later more sombre ones. Thus, they cannot be in agreement on every conclusion drawn by individual authors in their chapters. Rather, a view which the contributors share is that the Tanzanian crisis warrants a balanced and detailed analysis, and that there are no simple answers to most of the questions that must be raised in such analysis.

The contributions to this book attempt to provide an understanding of the crisis in Tanzania both in terms of its causes and the way it is manifested, and of how people, communities and the state struggle for survival and improvement. The book is organised in the following way. After the introduction which attempts to give a brief overview of manifestations, causes and responses to the crisis (Chapter 1), chapter 2 provides a historical account of demographic developments with an emphasis on population growth. The three succeeding chapters focus on broad issues of major relevance to the crisis. The first of these deals with macroeconomic policies and structures (Chapter 3), the second and third with the constraints and problems of the major productive sectors, manufacturing (Chapter 4) and agriculture (Chapter 5). Chapters 6 to 10 go in more detail into various long- and short-term aspects of developments related to agriculture. Chapters 11 and 12 deal with pastoralism and agro-pastoralism, which are economic activities with important links to agriculture. In chapters 13 and 14 major non-agricultural economic activities, services, crafts and small industries, are analysed from different points of view, while the last two chapters, 15 and 16, discuss social infrastructure: water development and health services.

*The editorial group*

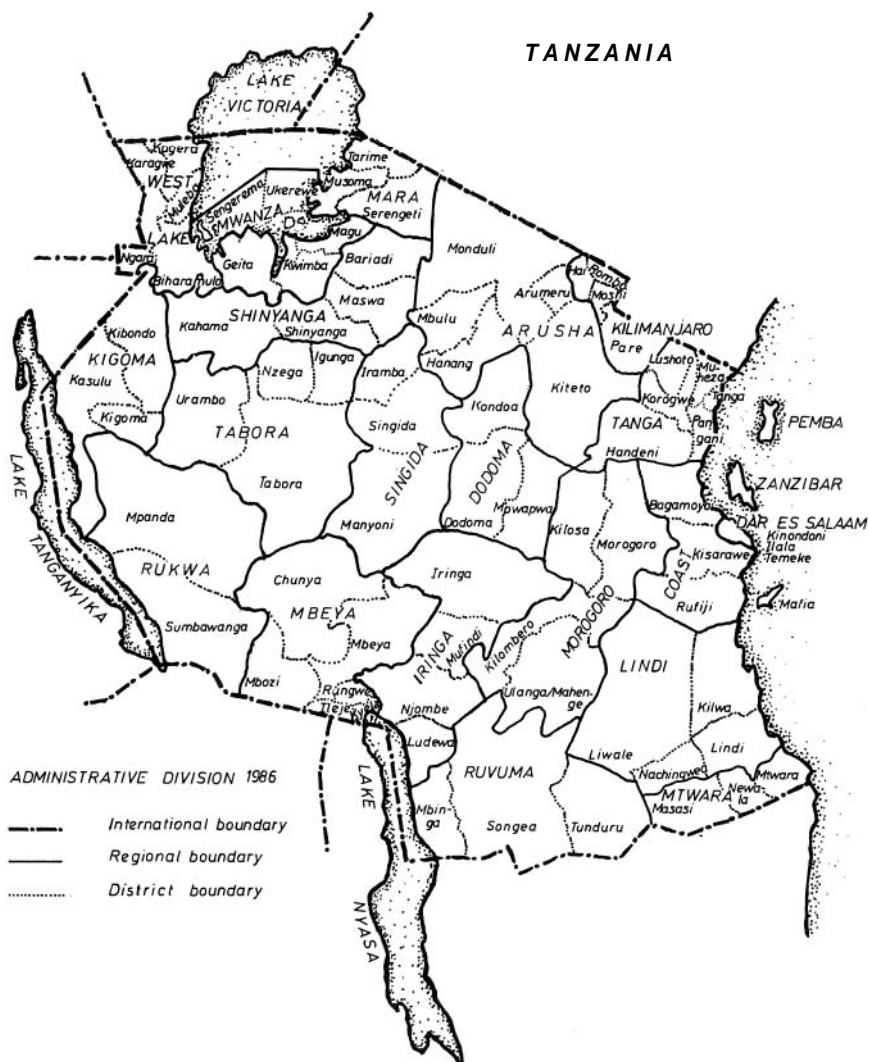
# Basic facts on Tanzania

Official name	The United Republic of Tanzania
State form	Republic, consisting of Tanganyika and Zanzibar
Area	945 087 <b>sq.km</b>
Population	22 millions (estimate 1986)
Population growth rate	3.3 % (annual average 1973–83)
Party system	One party Chama cha Mapinduzi (CCM – Revolutionary party)
Political leaders	Ali Hassan Mwinyi (president) Julius Nyerere (party chairman)
Main cities	Dar es Salaam; Dodoma officially designed as capital
Languages	Swahili, English, local languages
Adult literacy	79 % (1981)
Urban population	14 % (1978 census)
GDP per capita	240 US dollars (1983)
GDP growth rate	0.9 % (annual average 1965–83)
Agriculture of total production	52 % (1983, current prices)
Foreign aid	559 million US dollars, of which 24% from the Nordic countries (1984)
Main exports	coffee, cotton, cloves, sisal
Currency	shilling (one US dollar about 40 shillings, mid-1986 after major devaluation)



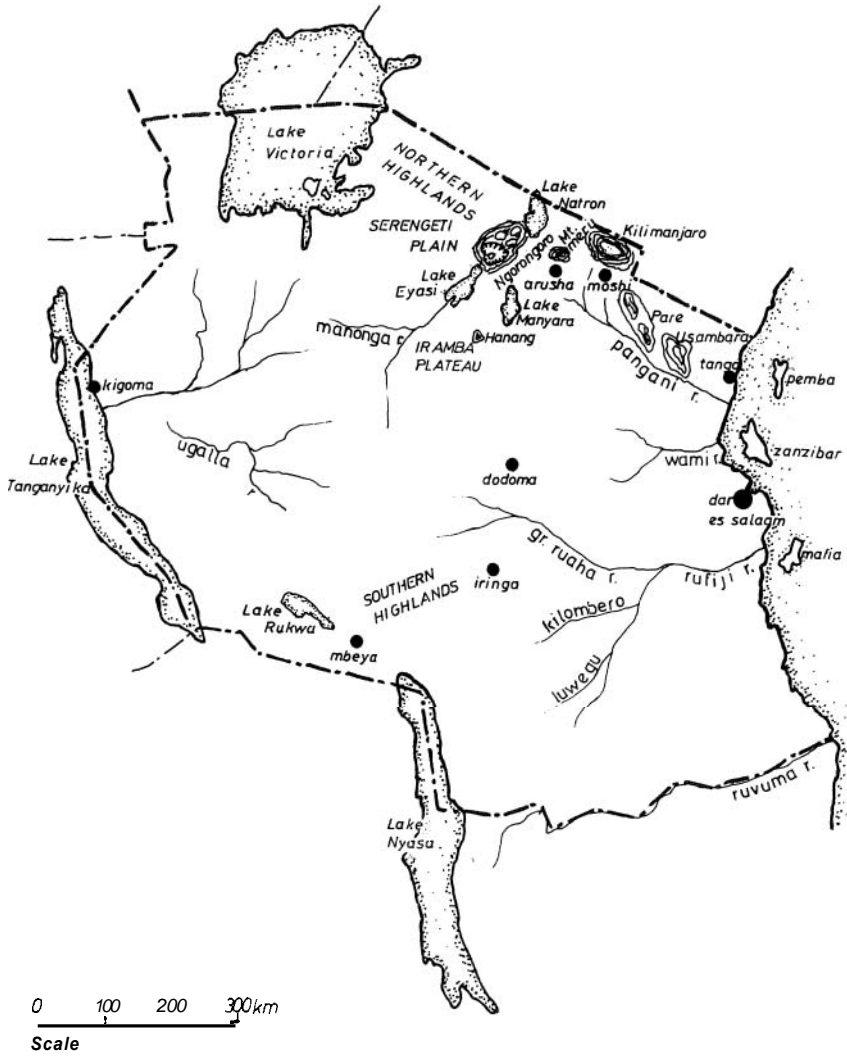
Map 1. Tanzania; roads, railways and main cities.

## MAPS



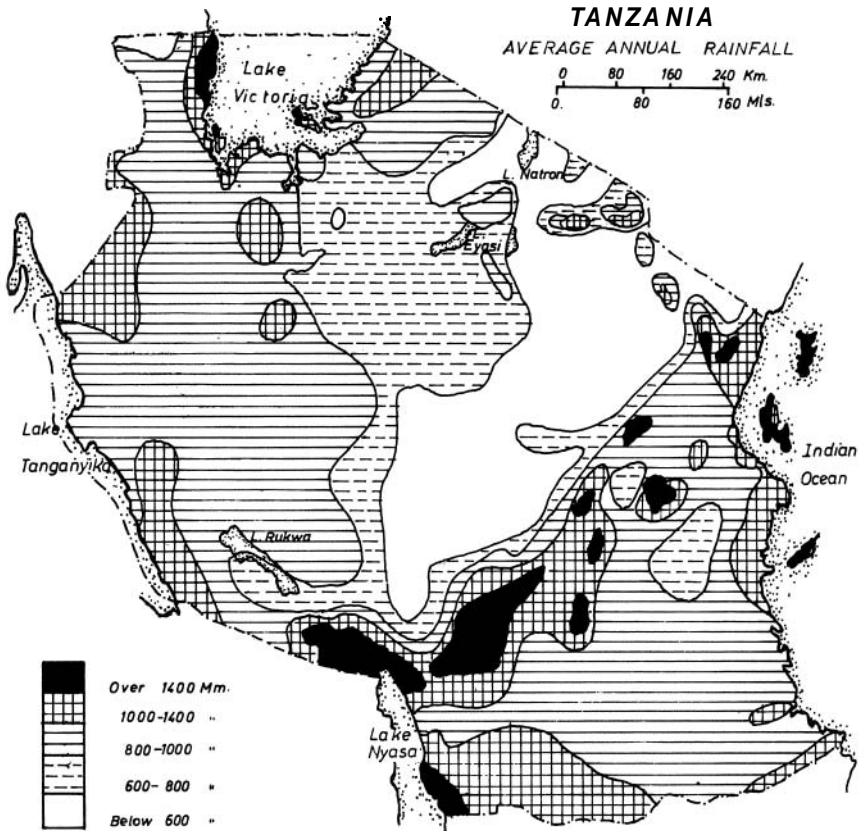
**Map 2. Tanzania; administrative division 1986.**

# MAPS



**Map 3.** Tanzania; mountains, highlands and rivers.





Map 4. Tanzania; annual rainfall (average).



# 1. Introduction

## *The editorial group*

There have been crises in Tanzania before, and Tanzania is not the only country in the world facing crisis today. But crises differ in their manifestations, their causes, and in the way people and institutions respond to them. In this introductory chapter we shall try to outline the salient features of the situation in Tanzania, and why we denote it as a crisis.

### MANIFESTATIONS OF THE CRISIS

To many observers the Tanzanian crisis manifests itself primarily in the foreign-exchange balance, in government budget deficits, in industrial and agricultural production figures, etc. For what they are worth, Tanzanian statistics as presented in the different chapters in this book do all show the same bleak picture: From the early 1970s to the early 1980s despite a fall in the volume of imports per capita of 40%, there was at the same time increasing deficit in the external trade balance. In the early 1980s GDP per capita (at constant prices) was actually declining, while the annual rate of inflation had grown to 30% from less than 10% at the beginning of the 1970s. In terms of monetary GDP, the manufacturing sector declined at an average rate of almost 20% per year from 1978 to 1982, and capacity utilisation stood at only 25–30%. The least reliable statistics are probably those on agricultural production, but they correspond with other indicators in showing declining or stagnating production of most export crops, and a fall in official marketing and vastly increasing imports of food grains over the last decade.

But the crisis does not simply reveal itself in macro-economic imbalances of concern to the Ministry of Finance, bankers and university economists. It has very real manifestations in ordinary people's everyday lives. The sight of a tanker anchored in the harbour of Dar es Salaam, waiting for days, even weeks, to discharge its badly needed cargo of oil, is perhaps one of the best illustrations of the Tanzanian crisis. The Bank of Tanzania's disastrous lack of foreign exchange meant that towards the end of 1985 no tanker would discharge until its cargo was paid for. In one instance discharge finally took place after more than three weeks on condition that the Tanzanian Government agreed to settle the payment in coffee from the subsequent season's harvest.

Lack of fuel and spare parts means low exploitation of industrial capacity which, again, in a country like Tanzania means empty shelves in the shops and exorbitant prices for whatever commodities are available – the more so the farther away from towns one lives. Another effect has been a deterioration in the transport fleet, with an increasing number of buses and trucks no longer in running order. Rationing systems introduced to offset the more and more frequent fuel shortages, have meant long hours waiting for transporters, first in offices to obtain fuel permits, and then in queues at petrol stations, if petrol or diesel was available at all.

The consequence of this has been that agricultural crops are sometimes either collected too late from villages or not collected at all. At the same time, other areas have experienced severe food shortages, and the government has had to use large amounts of foreign exchange to import food.

Almost all basic daily necessities have at times been either totally lacking or in very short supply. These include food items such as maizeflour, rice, sugar, salt, etc. as well as other things like kerosene, matches and soap, to mention but a few.

For many people the only source of new clothes has for quite some time been mission sales of second-hand clothing from Europe and the United States. It is amazing to see how even the disco youngsters, with their own innovative fantasy, are able to create new local fashions from this source.

Shortages of basic agricultural inputs and implements in the rural areas at the same time as the government has urged the peasants to work harder and to raise agricultural production and productivity, do not make life any easier in the countryside, nor do they encourage the peasants' response to such government exhortations.

## THE MAKING OF THE CRISIS

The Tanzanian crisis is an acute foreign-exchange, financial, and production crisis, with social, political and moral overtones. But among its causes can be mentioned an even wider conglomeration of short-term conjunctural setbacks and problems created by recent policies and other activities in the country, combined with more basic structural features of society that have built up over a much longer period of time.

Each of the contributions to this volume discusses certain aspects of the present crisis in Tanzania, their effects, how they have built up over time, and how they have been affected by and have responded to events in other sectors within the country or on the international scene. They all show that there is no single-cause explanation for the Tanzanian crisis – and thus no simple panacea for resolving it.

While space would not have permitted a comprehensive analysis of all the

## INTRODUCTION

important international dimensions of the crisis, the book leaves the reader in no doubt that the diverse and almost simultaneous setbacks, such as the war with Uganda, the break-up of the East African Community, the second oil-price shock, and widespread drought, combined to throw the already faltering Tanzanian economy into the deep economic crisis of the 1980s.

Most of the contributions further analyse how the foundations of the crisis were to a large extent laid earlier – directly or indirectly – by the development policies pursued by the Tanzanian Government itself. Since the adoption in 1967 of the Tanzanian brand of socialism, **Ujamaa**, as the country's official ideology, the government has taken a very activist development line, increasingly concentrating all development activities in the hands of the state, while at short intervals introducing major institutional changes into the social fabric.

To put it briefly, these changes, which are analysed in detail throughout the book, included: the nationalisation in 1968–69 of most of the major financial, commercial and manufacturing enterprises – and, perhaps even more important, their subsequent rapid state-financed expansion; the strengthening in the early 1970s of the political and administrative powers and apparatus of the government at regional and district level; the removal in 1972–75 of most of the scattered rural population into concentrated villages through villagisation campaigns; the introduction in 1976 of universal primary education, and the expansion of primary health facilities and rural water supplies; the abolition of cooperatives in 1976 and their replacement by parastatal crop authorities, which were to expand explosively very soon afterwards; and vastly increased industrial investment from 1975–76 onwards, based on a new basic industries policy. All this, of course, went hand in hand with an escalation in the size and number of government establishments and employees, and also with a general tendency towards increased government control over medium and small-scale economic enterprises, including peasant agriculture, through more and more detailed national and local directives and political and bureaucratic commandeering. But the material base did not follow suit. Simultaneously with the rapid expansion of the social and economic infrastructure, production in most sectors showed signs of stagnation, even decline, in particular after 1981, and many of the government's interventions to restore production seemed to have the opposite effect, as several of the subsequent chapters in this book will show.

Hence, the growing domestic surplus to underwrite the expansion of economic and social activities failed to materialise. Increasingly, therefore, the government had to depend on foreign aid and loans, on the taxation of peasant agriculture, effected by higher agricultural marketing margins and deteriorating "terms of trade" with other sectors, and on inflationary deficit financing.

Thus foreign aid donors went along with Tanzanian policies and influenced their implementation for a long time, contributing to projects and programmes, which were later criticised as contributory to the crisis – at a time when donor funds generally speaking had begun to become more scarce internationally.

The surplus squeeze on agriculture was certainly not an incentive for increased production, and together with inflationary financial and monetary policies and restrictive pricing policies provided the basis for the emerging "unofficial" or "**alternative**" economy. The effect was that the economic foundation of the Tanzanian state and its interventionist policies was already seriously eroded when the so-called external shocks hit the country from 1978 onwards and sent the economy into a full-scale and acute crisis.

## THE LONG-TERM STRUCTURAL BACKGROUND TO THE CRISIS

In trying to give explanations for the crisis, however, many of the contributors to this book do not limit their analysis to the immediate causes of the acute phase of the crisis. They trace its roots much deeper into the historical development of Tanzania's basic social structures, thus also placing the discussion of the crisis within the framework of a number of important development-theory debates.

Stagnating agricultural production, almost permanent problems in feeding the rapidly growing urban population, and more and more frequently recurring droughts causing widespread food shortages, have refocused attention on the ever more urgent population and environmental problems, as they relate to agriculture. With a population growth rate standing at over 3% p.a., i.e. a rate implying a doubling of the population in 20 years, land of high agricultural potential is becoming scarce and forests depleted. More marginal land is being brought under cultivation every year, and already cultivated land is used more intensively. While the spread of new biochemical technology, primarily improved seeds, fertilizer and pesticides, may make up for the normal subsequent fall in labour productivity, it can easily add to the already increased risk of crop failures on marginal land or in intensified land use. In the longer run erosion may occur, turning land unarable and necessitating the opening up of even more marginal areas.

As if these demographic/environmental problems were not grave enough in themselves, they further combine with such social trends as the urge to increase cash-crop production, for example by expanding large-scale mechanised production, competition for land between agriculturalists and pastoralists, or concentration of the rural population in large villages, supposedly to facilitate communications and the provision of social services.

## INTRODUCTION

Stagnating or falling agricultural productivity raises a number of further questions concerning the productive basis for expansion in post-colonial economies like that of Tanzania: Is surplus extracted from agriculture the only possible source of investment and development in other sectors? Is there a limit to the rate at which surplus can be extracted without affecting agricultural production negatively? What is the optimal relation between market forces and state power in surplus extraction? What should be the distribution of investible surplus between sectors: agriculture itself, industry, transport and communications, commerce, social services, administration (the state control apparatus)? All of which is quite apart from whatever surplus is transferred out of the country through mechanisms in the international economy.

Within this context some contributors to this book would argue that the lack of development in the agricultural sector, and hence the absence, especially in the 1970s, of an increasing investible surplus to sustain growth in other sectors, notably in industry, was a – or perhaps even *the* – major cause underlying the outbreak of the crisis in the 1980s. Against this, however, it might be objected that perhaps the immediate cause was rather an over-ambitious and too hurried industrialisation programme running parallel with rapid expansion of the social services, for which there was not – nor could there possibly have been – any basis in the economy. In either case it may be further argued that an important cause aggravating the situation was simply the often extreme inefficiency of surplus utilisation.

At this stage it seems at least safe to say that in Tanzania in the 1970s the surplus which the state – with its virtual monopoly – extracted fell increasingly short of what was needed for its ambitious expansion programmes, including both capital investments and recurrent costs, even for industries which never managed to break even. Thus the machinery created to try to force the peasants to produce more, and to intensify surplus extraction, began to have higher marginal costs than the extra surplus gained, and in many cases to have directly negative effects on production. Ultimately government control, and thus its ability to extract surplus, broke down in many parts of the economy – and the expansion programmes, in some cases even ongoing activities, have had to be drastically reduced. '

The character of the Tanzanian agricultural sector also impinges on agricultural surplus problems. It is dominated by small-scale peasant family producers who are only partly market-oriented, and even less **profit**-oriented. They do not necessarily, therefore, react to economic incentives and market mechanisms in accordance with the theories of economic textbooks. Preconceived assumptions about irrational, conservative peasants, who must be forced to change, are consequently often seen to be replacing efforts to understand *their* rationality and to act accordingly. One such effort to understand peasant rationality, the notion of "the economy of

affection" of the "uncaptured peasantry" – which, contrary to being "captured", pervades the whole society – as presented by Göran Hydén in his book *Beyond Ujamaa in Tanzania*, leads, however, to the same conclusion: the need for the use of force against the peasants as a prerequisite for development.

While they do not deal with this issue at the theoretical level, it is clear that several of the authors in this volume are clearly concerned with the peasants' rationality and with its widespread non-recognition – originating way back in the colonial period – as one deeper cause underlying the crisis. And also with the need in a peasant society to redefine development on the premises of peasant rationality, thus, for example, taking into account the inevitability of local variations.

## RESPONSES TO THE CRISIS

As the subsequent contributions to this book will show, there has been a wide range of responses to the crisis in Tanzania. Internally they have originated from the party and the government, from traders and producers within small industries, from manufacturing, and from the peasant cultivators. On the national level these initiatives have been directed at restructuring and improving the economy in order to recuperate from the crisis while ordinary people in their struggle for survival have had to adapt to ever changing conditions.

External responses to the crisis emerged as well, not least the negative attitudes of the IMF towards Tanzania. Bilateral aid donors seemed to await or even demand a successful conclusion of the **IMF-Tanzania** negotiations before deciding on their own long-term support to Tanzania.

As noted above, it was in the late 1970s and early 1980s that the crisis manifested itself in an acute shortage of foreign exchange and drastic reductions in manufacturing production which have resulted in lack of basic consumer commodities and inputs to productive activities. The underlying negative trends in agricultural development, resulting in a stagnating agricultural surplus, heavily taxed by state organisations, in particular the crop authorities, caused concern among the national leaders. At the second conference of the national party, Chama Cha Mapinduzi, in 1982, the then President Nyerere emphasized that neglect of agriculture was a basic cause of the ensuing crisis. Efforts to halt the negative trends were undertaken by reactivating the cooperatives, which had been abolished in 1976 in favour of government crop authorities, and by drawing up a new agricultural policy in 1983.

In the area of planning, it was recognised that the system of long term five year plans could not address the situation of acute crisis. A National



## INTRODUCTION

Economic Survival Programme was launched, but was soon overtaken by the Structural Adjustment Programme (SAP), drawn up for the period 1982/83 to 1985/86. SAP envisaged a rapid increase in agricultural exports, a restructuring of the economy and increased industrial capacity utilisation aided by sizable external loan and aid contributions. As the conflict with the IMF dragged on, little additional external support was forthcoming, hence SAP could only partially meet its objectives.

Tanzania's unwillingness to accept the IMF's loan conditions was remarkably strong, in spite of the country's acute need for additional foreign assistance. In the early 1980s the national leaders stated that giving in to these conditions would compromise the Tanzanian development model. The 1984/85 budget signalled, however, that the Tanzanian Government had taken a more pragmatic approach to major economic policy issues, in particular the questions of agricultural producer prices and devaluation. These signals were not followed up in the 1985/86 budget, but emerged again in a more systematic way in the Tanzanian Government Programme for Economic Recovery for the period 1986/87 to 1988/89. This programme was positively received in the meeting of the Consultative Group for Tanzania in early June 1986 and as well by the IMF. The 1986/87 budget reflected closely the initiatives in the recovery programme and this paved the way for an agreement between Tanzania and the IMF, formally signed in late August 1986.

Lack of access to foreign exchange and imported goods has been a determining factor in regard to the responses on the part of industrial production units. While many major industries fell back on decreasing capacity utilisation, initiatives could be observed to intensify local sourcing of raw materials, and local production to substitute for previously imported goods. Moves were also taken to produce simple machinery and towards increased ingenuity in repairs and local spare production in order to keep imported machinery and transport equipment in operation. Further adaptations identified showed a tendency towards diversification of production in order to avoid reliance on one or a few raw materials only.

Only towards the end of the 1980s will sufficient time have elapsed to be able to tell whether the initiatives identified, most of them of an encouraging nature, have had a more lasting impact on domestic technological development and economic growth.

It is one thing, however, how governments and economic enterprises react to a crisis, but quite another what ordinary people in different socio-economic settings do.

Considering the seriousness of the crisis it is impressing that people in Tanzania seem to manage, although some definitely much better than others.

As mentioned above, many peasants have tried to take matters into their

own hands. If they cannot get pesticides for their coffee for example, they leave the trees to look after themselves and start growing all kinds of vegetables in between, which they sell, provided they can get transport, in areas where vegetables are in short supply and prices are therefore high. Increasingly the peasants avoid marketing crops through government controlled channels; this is true of even the more difficult export crops, and a large part of coffee produced in Tanzania is now said to be smuggled into Kenya.

Another way in which people in the rural areas try to cope is by moving. Many resort to temporary migration to other areas either to cultivate a piece of land or they try to get paid employment to supplement the domestic income. Others move and engage in all kinds of business, both in the towns and in the rural areas, for example in areas which for one reason or another seem more prosperous and to offer more possibilities at the time. This is, for example the case in some areas of heavy in-migration, where the population increase is so fast that a combination of agriculture and housebuilding, pombe brewing or the establishment of small shops become profitable activities. Other nonagricultural production activities such as forestry (logging, sale of firewood and charcoal), fishing, etc. are also becoming more and more widespread.

Local spontaneous innovation processes have also accelerated in agriculture. This can be exemplified by expansion in ox ploughing, utilisation of new inputs and new cropping patterns and the spread of the use of ox carts. The quest for improved rural transport is based on the critical need for transport of crops, manure, water and firewood in many of the central, semi-arid and treeless areas of the country. Many of the contributions to the book show that these developments were linked to the process of villagisation initiated in the early 1970s. Hence an understanding of villagisation, its basis and its economic, social and political effects is central to the analysis of rural development and state-peasant relations. Village craftsmen and producers have shown great ingenuity in responding to these new demands, though their resources are limited. Village mechanics, blacksmiths, carpenters and tinsmiths produce plough shares and ox-cart boxes, they repair simple agricultural implements, and make household utensils and other vital commodities which large industries are no longer able to supply to the rural areas. The introduction of a wooden beam plough and the use of old rails for axles compensate for lack of metal imports.

On the whole, many of the new initiatives indicate that limiting factors have encouraged and forced producers to be innovative in order to generate income in the struggle for survival. It should, however, be borne in mind that for most people the process of adaptation has taken place under enormous strain.

The above observations concerning peasants diverting their crops into

black market channels, taking up alternative – even nonagricultural – production lines, and increasingly resorting to all kinds of petty trading challenge the notion that peasants have an option to withdraw into subsistence activities. There seems to be no broad empirical basis to support the withdrawal argument, although a few contributors find this concept of relevance to developments in their study area.

For most salaried people their salaries have been insufficient to make ends meet. This means that civil servants at all levels have been more or less forced to try to cope by taking up income-generating activities both in their spare time and also increasingly during working hours, and this results in empty desks and a lowering of administrative efficiency. Workers' households have been forced to rely on reproductive support from their own rural production or assistance from rural relatives. Some people form groups and contribute money to pay individuals to go and fight (and maybe pay bribes) to buy in shops where things are occasionally sold at government fixed prices.

The expansion of black marketing has been a major response by the trading community and also by increasing numbers of people **taking** to petty trading activities. Official prices and the rationing effected for basic commodities from time to time, has rarely had any other effect than to push more trading transactions over into the so-called parallel market. Marketing of foodstuffs through such parallel markets has increased rapidly during the crisis and reached a large proportion of total marketed food output, despite its illegal character and the poor transport system.

Life has been most difficult for those who have little or nothing, or who have no social standing. Many people higher up would take advantage of their positions and absorb a **large** part of the goods which are available at government prices. There is no denying, that in crisis-stricken Tanzania some people have become steadily more wealthy, while the majority grow poorer.

A final illustration of the crisis is the common popularity, but different fate, of the campaign against economic saboteurs which was launched by the government and the party in 1983, and the liberalisation of imports in 1984.

The so-called "crack-down" on economic saboteurs was a last effort to try to stop black market activities and to seize hoarded commodities and black market money-dealers. Special tribunals were set up to deal with the culprits. The initiative had overwhelming popular support in its early phases. Large stocks of critical consumer goods were seized and illegal currency transactions were detected. About two thousand people were brought before the special tribunals. However, when policemen began searching people's homes and confiscating a few extra pieces of soap or small quantities of kerosene and sugar, leading also to a serious contraction

in the distribution system of importance to ordinary people, at the same time as the so-called big fish were never caught – or worse, quickly released – it became too much even for those among whom the campaign had initially enjoyed great popularity. Thus, with a loss of popular support, and never having really been dear to the higher echelons of society, including non-trading groups, the drive to seize economic saboteurs petered out.

Only a year later the targets of the economic saboteur campaign became the champions of an equally popular liberalisation of imports, which allowed Tanzanians to import freely without questioning the source of their foreign exchange. Suddenly shops were filled – especially in the cities, but also in many villages – with goods that had not been openly for sale for a long time. Many private buses, pick-ups and small lorries are now also operating. The prices were high and reflected the black-market exchange rate, which might reach eight times the official rate.

The effect of the liberalisation of imports in 1984 was a marked increase in imports, in particular of consumer goods. In order to capture more imports for the productive sectors, the government restricted the range of goods which could be imported and in early 1986 announced a scheme whereby production units could retain up to 50% of the foreign exchange from their exports in order to procure productive inputs from abroad. This scheme is likely to spread to other activities with a potential for earning foreign exchange. Many earlier restrictions on the internal movement and marketing of agricultural food crops are also gradually being relaxed.

Despite occasional attacks on liberalisation from the party leaders it is still in operation, and there are of course people who can afford the newly available goods. But for the majority of the people it means, as expressed by one Tanzanian: "We look at the shop-windows and enjoy the sight of all the things we haven't seen for a long time, it raises our spirits, and for a short while we dream about possessing them, but finally we walk by. We just don't have enough money to buy them."

While the whole volume thus vividly demonstrates the domestic problems of the Tanzanian state, as well as touching on the struggles to overcome the economic blows received on the international scene, Tanzania's consistent and bold stand on major international issues cannot pass unnoticed in finalizing this introduction, although it does not take such a prominent position among the contributions to the book, which has a different focus.

Tanzania provided the leadership of the frontline states, supporting tirelessly the forces fighting for independence in Mozambique, Angola, Zimbabwe and Namibia and the anti-Apartheid struggle in South Africa herself. Tanzania in addition welcomed a large number of refugees from these and other neighbouring countries and took active part in the formation of the Southern African Development Coordination Conference

## INTRODUCTION

(SADCC), a group of nine countries set up to promote regional cooperation in southern Africa as a counter to South Africa. In the Organization of African Unity (OAU) and the United Nations the Tanzanian Government strongly advocated humanitarian and unaligned principles in African and world politics – sometimes to the extent of jeopardizing the chances of attracting the economic support so much needed in its own struggle for survival.



## 2. Population Growth in Historical Perspective

### The key role of changing fertility

*Juhani Koponen*

Few would deny that population and development are closely intertwined. But how the relationship works out in practice is only imperfectly understood and there are sharply differing views on it. In particular, the role of population growth in the development process has generated heated controversy. One view, associated with the name of Malthus and deeply rooted in Western development **thinking**, regards population growth as detrimental to development, believing it will outrun world resources and lead to "misery and vice".<sup>1</sup> A contrary opinion holds that population pressure resulting from growth must ultimately be conducive to technological innovation and thus to accelerated **development**.<sup>2</sup> As to the driving forces behind population growth, there is hardly less disagreement. Some see population as an 'independent variable', developing with a momentum of its own. Others think that population development is greatly affected or even determined by more general social and economic conditions. But even the latter do not agree what these conditions are and how their impact is **making** itself felt.

Tanzanians and other Africans have generally been champions of the beneficence of population growth. The reasons given have been straightforward enough. Africa, the argument goes, has always been a sparsely populated continent. Rapid population growth is needed in order to fill the gaps created by the slave trade and early colonial catastrophes. The head of the Tanzanian delegation at the United Nations World Population Conference in Bucharest in 1974 explained that historical experience had taught African countries that "people and population are a development asset" and he declared that Tanzania had no "population problem" as such. If Tanzania had a problem in feeding, clothing and housing its people it was not the result of the number of Tanzanians but of "the inequitable economic relationships" in the world, which made it difficult for Tanzania and other Third World nations to "realise fully the potential of their own resources and receive the correct share of the fruits of the global economic effort". Thus, what was needed was to redress this inequality, "to match resources and development to population and not population to development and

resources".<sup>3</sup> Since then, in little more than a decade, the Tanzanian population has increased by more than five million and attitudes have changed somewhat, but most African leaders, including many Tanzanian ones, **still** believe that a reduction in population growth is "not a condition per se for accelerating economic development".<sup>4</sup>

This chapter takes a look at the development of population trends in Tanzania in a longer historical perspective. Even though it does not represent an attempt to claim that the problems Tanzania is facing are mainly due to too large a population, underlying the argument is a concern about the high rates of population growth in the country. Historically, the **population-as-an-asset** argument is not without considerable merit in Tanzania, and the country still has resources to support a considerably larger population than at present. Nevertheless, it is becoming more and more obvious that the existing very rapid population growth is creating more problems than it is solving, and it can scarcely be absolved from partial responsibility for the present crisis. Apart from the general pressure on land and its main implications, other economic and social consequences of rapid population growth will not be discussed in the chapter, however, because they will be touched on in other contributions to this book. Instead, there will be a discussion of the determinants of population growth. It will be argued that the key factor in population development is fertility, and that fertility is to a considerable degree a socially and culturally conditioned factor. Further, it will be suggested that fertility control is nothing unnatural or new in Africa. All known historical populations have regulated the number of their births, and traditional African societies were no exception. Rather, African societies in Tanzania seem to have experienced an erosion of the old control mechanisms and this erosion should be seen as one of the main contributing factors in population growth.

## TRENDS IN POPULATION GROWTH AND THEIR IMPLICATIONS

Even if it is impossible to ascertain precise figures, it is well established that the Tanzanian population of some 20 million in the mid-1980s is growing at a rapid and even accelerating rate. The last two censuses in 1967 and 1978 recorded both total sizes of population and rates of growth remarkably higher than was estimated on the basis of earlier demographic data. In 1967 it was found that the population enumerated in the census was two and a half million more than had been assumed by the **government**!<sup>5</sup> The estimates of growth rates were revised, but the 1978 census still disclosed almost a million more Tanzanians than **expected**.<sup>6</sup> Thus, the possibility exists that even the present high estimate of the rate of population growth,



Table 2.1. *Selected estimates of total population, fertility and mortality in Mainland Tanzania, 1913–1978*<sup>11</sup>

Year	Population (thousands)	Total fertility rate	Crude death rate	Infant mortality rate
1913	4063	..	..	230
1921	4107	..	..	..
1931	5023	..	..	..
1948	7410	5.0–5.1	30–35	170
1957	8665	5.6–6.4	24–25	190
1967	11959	6.6–7.3	21–23	145–160
1973	..	6.3	..	..
1978	17036	6.5–7.7	18–19	135

Note: Until 1957 mainland African population only

3.5 % annually for 1980–2000,<sup>7</sup> may, in retrospect, turn out to be an underestimation. In any case, it is not likely that it will err significantly on the lower side.

These rates of population growth are among the highest in the world. Only in a few countries, all of them in Africa or the Middle East, is the population increasing even more rapidly than in Tanzania.<sup>8</sup> Such rates are also without historical precedent. The fastest growing European populations in the nineteenth century recorded growth rates not much above 1.5%, and even North America, with its abundant land resources and heavy immigration from Europe, experienced an annual population growth of only a little above 2% at its peak in the early years of the nineteenth century.<sup>9</sup>

When spelled out, the implications of such rates of growth are striking. The population of Tanzania has grown almost five-fold during the 70-odd years for which we have fairly reliable counts available.<sup>10</sup> If the present trends continue, i.e. if there are no immediate major changes in the demographic behaviour of the population and barring major catastrophes, it will increase five-fold again in a much shorter period. On the basis of projections set out in the *World Development Report 1984* and elsewhere, one can conclude that the Tanzanian population will be somewhere between 30 and 40 million in the year 2000 and, continuing to grow rapidly, may well exceed 100 million in a few decades.

Even if the fertility rates were to decline tomorrow, Tanzania will have a much larger population in the early decades of the next century than now. This is not only or even mainly because of declining mortality rates but because of what demographers call "population momentum". This refers to

the in-built tendency for a population to grow because of its youthful age structure. As a result of the rapid growth of population in the recent decades, the great majority of Tanzanians are very young. The proportion of children under 15 years of age has risen constantly and was 46.1% in 1978. This means that the age-groups ("cohorts" in demographic parlance) of child-bearing age or approaching it, will continuously increase in size and produce more children even with a declining number of births per woman. And this holds even in the case where fertility has declined to what is called the "replacement level", i.e. the level just required to reproduce the population.<sup>12</sup>

There are different views on how population trends will look in the future. The most recent projections were made by World Bank researchers. The *World Development Report 1984* presents three main estimates of Tanzania's future population. The first "standard projection" is based on the assumption that fertility rates will begin to decline in 1990–95 and reach the replacement level around the year 2030. In this scenario, the total size of the population will settle at 93 million in 2050. The second projection assumes a "rapid fertility decline", similar to that reached in a few non-African developing countries, including China. This kind of drastic decline in the birth rate would bring Tanzania's population to 31 million in 2000 and 51 million in 2050. The third projection, adding a rapid mortality decline to the rapid fertility decline, would end up with a population of 55 million in 2050.<sup>13</sup> These estimates can be compared with those prepared by Kocher ten years earlier. He regarded as most plausible the option assuming an initial rise in fertility that would turn to a more moderate decline around 1990. According to this calculation, the population of Tanzania would in 2050 be some 150 million.<sup>14</sup>

The basic assumptions on which the projections are based may, of course, turn out to be groundless or lose their validity with the passage of time, and what will happen in real life may be very different. But the main function of such projections is not an accurate forecast of real developments but an exposure of the possible outcomes of present-day trends, and the message they carry should be clear enough. With the demographic structure as it now is, whatever decisions are made and measures taken by Tanzanians, the population will almost certainly double in 25 years. And if the trends are not reversed in the near future, it will keep on doubling at an accelerated pace. Furthermore, the question is not only about the absolute size of the population. As noted above, the population structure is already very youthful, with 46% less than 15 years of age. This means that the working population, those between 15 and 60 years, must be relatively smaller than in an older population, and in this case it constitutes only a half of the total. The population growth, based as it will be in the next few decades on high birth rates, combined probably with a decline in infant and child mortality,

will swell the ranks of the young proportionally even more and produce an age structure with a majority of Tanzanians less than 15 years old in the not too distant future. All this points to the inescapable conclusion: the bulk of population growth in Tanzania is still to come.

## POPULATION, LAND AND TECHNOLOGY

That such increases in population are making the attainment of many development goals in Tanzania increasingly remote is not difficult to appreciate. A heavy burden is placed on public facilities like education, transport and the provision of piped water. But one might argue that population growth rates, imposing though they may look, give no immediate reason for excessive concern when related to the land resources of the country. A population of 20 million in a country of about 945 000 sq. km will make an average density of 21 per sq.km. In international comparisons this is certainly low. It is not much above the average of the four Nordic countries (19 inhabitants per sq.km) and nothing compared with, for example China (105), Netherlands (349) or Bangladesh (645 inhabitants per sq.km).<sup>15</sup> Even though the land-use patterns are fairly extensive in many parts of the country, there does not seem to be much overall pressure of population on land. No exact up-to-date figures are available but according to the most widely cited estimates only some 5% of the total area was under cultivation in the early 1970s. Roughly a half may have been devoted to grazing. The rest was exploited by man only sporadically, if at all.<sup>16</sup>

However, as is widely known, behind this modest average density lies a highly unequal distribution of population. Even traditionally, the population was clearly concentrated on coastlines, highlands, sea shores and a few other well-watered places, and involuntary and voluntary migrations during the last 150 years or so have consolidated this pattern in a way that seems almost impossible to break by political or other outside interventions (cf. the story of Bodoma as the capital city of Tanzania). Figures on land areas under cultivation or grazing, even if they were accurate, are deceptive because they do not take into account the quality of the land. It is clear that the best agricultural land has been in heavy use for a long time and that it is badly congested. This applies to most, if not all, of the better-quality grazing land as well. Even though the "land reserve" of Tanzania includes such large agriculturally promising areas as the Kilombero Valley, the main part of it consists of tsetse-infested miombo woodland in central and western parts of the country, reclamation of which would require heavy investments, not to mention the ecological risks involved.

Obviously Tanzania has still underutilised agricultural potential, especially when compared with its East African neighbours, but it is extremely

difficult to tell what are the limits of its 'carrying capacity' and when the borderline of 'overpopulation' will be reached. Carrying capacity and its reverse side, overpopulation, are relative concepts, which must vary from one place and time to another. The relationship between man and nature is always determined by technology, on the one hand, and by the needs of people, on the other, and how many people a given area can support is dependent not only on the quantity or even quality of the land but on levels of technology and human needs as well. What estimates there are of the carrying capacities of Tanzanian land are crucially dependent on their underlying basic assumptions concerning land quality, technology in use and population needs, and such assumptions tend by their nature to be more or less arbitrary.

The most recent as well as most optimistic estimates are those made by FAO. Its researchers have calculated that if all Tanzania's arable land, in whatever use now, were devoted exclusively to food crops, the country should be able to support at subsistence level almost twice the present population, even with lower technology than is currently in use. Introduction of what is called the "intermediate level of inputs" would increase the population-supporting capacity four-fold." Such estimates are patently hypothetical and thus not very illuminating for the actual situation. An older study by Moore can be considered somewhat more realistic. On the basis of the existing overall cropping patterns and levels of yield and technology, Moore calculated carrying capacities for each of Tanzania's 70 rural districts. These were then compared with the actual populations enumerated in the 1967 census. Moore himself was at pains to emphasise that the object of his exercise was not to give a definite statement of the capacity of Tanzania to support its population, because no allowance was made for technological progress. Nevertheless, it is interesting to note that, according to Moore's estimates, Tanzanian rural districts had the capacity to maintain at subsistence level some 20 million people, i.e., roughly the present total population.

But if instead of the theoretical carrying capacity of the country as a whole, we look at the actual situation in various parts of Tanzania, a very different picture emerges. Extending his calculations to the district level, Moore found that while there was – and evidently still is – unused agricultural capacity, this was not the case everywhere. Some parts of the country had excess capacity, but other parts must be regarded as 'overpopulated', i.e. having more people than they were theoretically able to support. Moore identified 22 of the 70 districts in Tanzania, containing about a quarter of the total population, as overpopulated. Interestingly enough, these were districts with a wide variation in densities of population. Besides obviously congested areas like Kilimanjaro, Aruscha, Lushoto and Mwanza, the overpopulated districts included much less crowded inland districts like Dodo-

ma, Kondoa and Mpwapwa. The first-mentioned areas are not only better watered and more fertile, but they also use more land-saving and labour-intensive technologies of production than the latter, more marginal lands.<sup>18</sup> Remembering that these estimates refer to a time almost twenty years ago when the population of Tanzania was some eight million less than now, one cannot avoid the conclusion that the number of (in Moore's sense) overpopulated districts must have increased since in spite of the technological development which has undoubtedly taken place.<sup>19</sup>

It is not suggested here that people would not be able to subsist on 'overpopulated' land; this is what has been happening in some places for decades and it certainly can go on for a considerable time to come. But overpopulation entails that the land will come under heavy pressure, and producing even the existing output will require more and more labour and will eventually lead to degradation of the land. This is much the same as what Willian Allen called "critical population density". To exceed that density, itself dependent on the land and cultivation system, will start a "cycle of land degeneration . . . eventually soil structure breaks down under continuous arable cultivation and the onset of erosion sets in". Banana-based cultivation systems may escape the physical deterioration of the land and the "symptoms of land degeneration appear in the form of land subdivision and fragmentation; acute land shortage develops, and poverty increases . . ."<sup>20</sup> Both these phenomena have been evident in most of the 'overpopulated' districts in Tanzania for at least a couple of decades.<sup>21</sup>

A corollary of rural overpopulation is migration to towns. As is well known, Tanzania has implemented vigorous policies in order to redistribute population within the rural areas themselves. Nevertheless the main streams of migration still go from rural to urban areas. Rural-urban migration has certainly many other causes besides rural overpopulation. It has been going on since pre-colonial times. But during the last decade or two it has greatly accelerated, and its links with rural congestion are fairly obvious. The urban population appears to have more than doubled its share from 6.2% in 1967 to 13.3% in 1978. The fastest-growing region, Dar es Salaam, had an annual growth rate of almost 8% during the same period. Again, in international comparison, these figures are relatively low and part of the growth may be more apparent than real. Both the definition of urban areas and their boundaries were expanded between 1967 and 1978.<sup>22</sup> Yet there can be no doubt about the reality of the influx to towns or the multifarious problems to which it is giving rise.<sup>23</sup>

## FACTORS OF POPULATION GROWTH

Not so long ago, the answer to the question of the determinants of population growth, in Tanzania and elsewhere, seemed fairly simple. It was provided by what is known as the theory of 'demographic transition'. According to this theory, or rather an explanatory model, the high rates of population growth in nineteenth century Europe or the twentieth century Third World are to be seen as a direct consequence of the processes of economic development and "modernisation". In "traditional" society both birth rates (fertility) and death rates (mortality) were high. "Modernisation" and development, with better health and nutrition, trigger off a decline in death rates but the high birth rates still persist. The result is a rapid growth of population. Only later, as modernisation and economic development proceed, does a fall in birth rates set in and the end result of the transition is a new balance at a much lower level than **before**.<sup>24</sup>

Recently, however, this theory has been increasingly challenged both in European and in Third World contexts. While the majority of demographers still seem to subscribe to it, studies in historical demography have unearthed evidence which conflicts with some of its basic tenets. By now even widely circulated accounts like the *World Development Report* or United Nations reports caution readers that in real life the story must have been much more complex. There seem to be at least two major snags in the theory. The first, well-known already for a considerable time, is that the timing of the onset of fertility decline has varied much more than expected and has not always been directly connected with economic development. "In a few places fertility decline preceded mortality decline; in others, fertility did not start falling until soon after mortality did. And economic growth – if narrowly perceived as industrialisation, urbanisation, and the shift from family to factory production – was neither necessary nor sufficient for demographic transition."<sup>25</sup> The second, for which evidence has been accumulating more slowly, is that fertility has not necessarily always been so high as it was, and still is, in the transitional phase. In the words of Ansley Coale, the "widely accepted thesis that traditional societies developed customs that promoted high fertility . . . should . . . be amended to say that traditional societies developed customs that kept fertility at *moderate* levels" because it was most advantageous to their collective survival.<sup>26</sup> A growing number of researchers are now arguing that "modernisation" and economic growth actually ushered in *rising* birth rates and their decline began only after a period of sustained rise in fertility."

On the basis of my own research on Tanzanian demographic history, I have come to believe that the standard idea of demographic transition is inadequate in Tanzania too. Even though the evidence is, for want of

reliable sources, slender and scattered, and my research is far from complete<sup>B</sup>, the basic contours of the situation can be sketched with some confidence. It is beyond any reasonable doubt that there has been a general fall in mortality levels in Tanzania during the last hundred years, but one should exercise some caution when drawing conclusions from this. Mortality in the late precolonial and early colonial period seems to have been exceptionally high, and it is very difficult to estimate what the more 'structural' precolonial mortality levels might have been. Instead, there is a strong case to be made for the view that fertility, for its part, has risen. This is quite evident if the present rates are compared with figures from around the turn of the century, but it seems to hold even if the comparison is with more general precolonial levels. Thus, it can be argued that the high rates of population growth of the last few decades cannot be due exclusively, and perhaps not even mainly, to a fall in mortality, but a rise in fertility must also have played its part.

#### *Mortality decline*

As several scholars have noticed, the data on mortality are probably the most unreliable of all Tanzanian demographic data. Even the estimates derived from censuses and surveys are not too **trustworthy**,<sup>29</sup> and information on earlier conditions is naturally even more suspect. Yet it is safe to say that mortality has declined in Tanzania during the last hundred years or so. **All** the evidence we have attests that the general mortality levels were high in many **African** societies in the late precolonial period and went temporarily even higher with the onset of the colonial era. "The average life of males does not exceed twenty to twenty-five years. Many men are every year killed in battle, and great numbers fall victim to epidemics and famines," a British missionary doctor, E.J. **Southon**, wrote from Unyamwezi in 1880.<sup>30</sup> Many other sources from other parts of the country paint an equally gloomy picture. More research is obviously needed here, but it appears that, while it was the fighting that captured much of the attention of the early observers, by far the worst havoc was caused by epidemics. The "opening up" of the Tanzanian interior by long-distance trade had brought into the country new murderous diseases like cholera, and helped to spread diseases known in some parts of the country, like smallpox, to other parts.

The early colonial period, with increased communication between different parts of the country, helped to spread the diseases further and, combined with the heavy-handed methods of the German military, led to three major population catastrophes. Hundreds of thousands of people perished in famines, caused by a combination of disease, drought and locust invasion, in eastern and central parts of the country in the latter part of the 1890s and around the turn of the century, the suppression of the *Maji Maji*

rebellion by scorched earth tactics unleashed a savage famine in southern parts which claimed possibly 200–300 000 lives; and again during the First World War and immediately after it tens, perhaps hundreds, of thousands of people died, mainly of **diseases**.<sup>31</sup> And the total casualties went far beyond the immediate deaths; the effects of the catastrophes were reproduced in the reduced fertility of the surviving **women** for decades. A study of Ulanga in the 1930s, 30 years after the Maji Maji, suggested that the famine in the wake of the rebellion had reduced the average fertility of women in the rebel areas by over **25%**.<sup>32</sup>

After that, however, the mortality from catastrophes was significantly reduced, though local famines did not disappear. In fact, it is possible that they **increased**, at least in some parts of the country, and people perished in them; but full-scale disasters claiming tens of thousands of lives were now a thing of the past. Colonial health services were developed, on the basis laid by the Germans, especially in the 1920s and during and after the Second World War. People grew accustomed to the new disease environment and developed immunity to some of the diseases. All this evidently led to a reduction in mortality; at least the available figures suggest a declining trend. The crude death rate was estimated at 30–35 per thousand of population in 1948, 24–25 per thousand in 1957, 21–23 in 1967 and 18–19 in 1978. Another standard indicator of mortality, life expectancy at **birth**, was calculated to 35–40 years in 1957, 40–41 years in 1967 and 44 years in 1978.<sup>33</sup> But it must be emphasised that because of the limitations in basic data not too much confidence can be placed on the accuracy of the figures.

Moreover, crude death rates, i.e. number of deaths per thousand of the population, are elementary indicators and can be entirely misleading because they do not take into account the age structure of the population. Life expectancy at birth is also, as a synthetic measure, problematic because it depends on a number of assumptions based on other continents which may not be applicable in Africa. A simple and demographically highly relevant measure would be infant (children under one year of age) and child mortality; the problem is that estimates concerning them are not much more trustworthy than estimates of crude death rates. The first scattered figures available from German colonial period are shockingly high but probably unrepresentative. More reliably, one study, based on maternal information from more than 46 000 African women, found that infant mortality was around 230 per thousand and child mortality from one to five years some 180 per **thousand**.<sup>34</sup> Thus, only 59% of the children would have survived. This can be compared with more representative data from the censuses of 1948 and 1957. In both of them it was recorded that some 65% of all the children ever born to adult women were alive at the census date. In particular, the infant mortality rates computed on the basis of the censuses were lower, 'merely' 170 per thousand in 1948 and 190 in 1957.<sup>35</sup> Since then,



the declining trend in levels of mortality appears to have continued. The analysers of the 1967 census estimated that some 740 children per thousand were expected to survive until their fifth birthday. Infant mortality was thought to be around 160 per **thousand**.<sup>36</sup> Later estimates put the 1967 infant mortality at a still lower level, around 145, and computations based on data from the 1978 census suggest a rate of some 135 per thousand (125 for girls and 148 for **boys**).<sup>37</sup>

On the basis of the data presented above one can argue that levels of mortality must have declined since the beginning of the colonial period in Tanzania. But even if this is correct, it does not necessarily follow that the present mortality would be lower than it used to be in precolonial societies. Of course, it is not impossible that this would be the case and it certainly is what is usually assumed. However, when one takes into consideration what has been briefly said above about the invasion of new diseases and early colonial population catastrophes, it is clear that mortality must in those times have risen from its more 'structural' precolonial levels. For example, the famous missionary anthropologist Bruno Gutmann wrote from Kili-manjaro that the "dreadful statistics" on infant mortality in the German colonial period "bear for the main part witness only to disasters of the new **times**".<sup>38</sup> But we have no way of gauging the effects of such disasters and telling what a more stable level of precolonial mortality might have been.

### *Rise in fertility*

On the other hand, there are many indications that fertility, for its part, has risen during the last hundred years of Tanzanian history. Sources are as unreliable here as they are with mortality and one cannot be absolutely certain of anything. Nevertheless, there is a growing body of evidence, coming not only from different sources but also from sources different in kind, which almost unanimously suggests the possibility of rising fertility. Such evidence is of both a 'hard' demographic and a 'soft' ethnographic nature.

As for the demographic material, all the available census estimates as well as the findings of the **1973 National Demographic Survey** indicate a rise in fertility. There are varying estimates available for each census, depending on the methods of calculation used, but the rising trend emerges unmistakably. From the census of 1948 to that of 1957 the trend is weaker but clearly discernible. The size of the crude birth rate (CBR), i.e. number of births per thousand of population during the year preceding the census, and of total fertility rate (TFR), i.e. average number of live births expected, were estimated at 40–45 (CBR) and 5.0–5.1 (TFR) in 1948 and 38–47 and 5.6 respectively in 1957.<sup>39</sup> A reanalysis of the latter census produced an estimated TFR of 6.4.<sup>40</sup> And for both 1967 and 1978 the figures were still

higher. For the 1967 census the variations in estimates of crude birth rates range from 47 to 57 and total fertility rates from 6.6 to 7.3.<sup>41</sup> For 1978 the CBR estimates vary less, between 47 and 49, but the TFR figures range from 6.5 to 7.7.<sup>42</sup> This is not the place to discuss the grounds or possible sources of error for the widely varying estimates; let us simply note that, taken at their face value, these estimates do indicate a rising trend in fertility in Tanzania during the last decades.

This finding acquires additional support from a different kind of demographic material, that produced by the 1973 *National Demographic Survey*. The estimates of fertility indicators based on the material collected in this survey are lower than those calculated on the basis of censuses. The crude birth rate was thought to be 46.5 and the total fertility rate 6.3.<sup>43</sup> These may, in fact, be more realistic figures than the higher census estimates. But the evidence for a rising trend in fertility came from a source independent of earlier calculations of vital rates: the pregnancy and maternity histories of some 65 000 women interviewed in the survey. The histories showed consistently that younger cohorts (age groups) of women were bearing more children than the older had done at a corresponding age. Such a result may, of course, depend on lapses in memory of the older women or other errors of a more technical nature. However, after having probed a number of possible sources of error, the researchers concluded that they could "account only for a part of the observed rise" and the results of the survey did imply a real rise in fertility. The rise had been fairly gradual up to the early 1960s and more rapid in the ten years preceding the survey.<sup>44</sup>

But the census material; and most of the National Demographic Survey material as well, goes back only to the 1940s, and cannot tell much about earlier conditions. Here we should turn to different types of source: other, more limited demographic studies and general ethnographic material containing observations on population matters. And these, indeed, suggest strongly that the general levels of fertility must have been lower in the late precolonial and early colonial period than they are now or 20–30 years ago. The first European to travel through Tanzania from Zanzibar to Lake Tanganyika, Richard Burton, noted in 1859 that his main informants, the Arabs, "agree in asserting that, in spite of favourable physical conditions, the women are not prolific, and the impression borne away by a passing traveller is that, except in rare cases of polygamy, families are small".<sup>45</sup> Similar observations can be found scattered in other travel literature. When the first German doctors began to count numbers of children and births they found them generally low, sometimes even surprisingly so, averaging from less than one in parts of the coast to four or five in upland districts.<sup>46</sup> In the late 1920s and 1930s British colonial officers came to see at least some African peoples as fairly fertile and gradually the idea of the high fertility of African women was established. However, the first professional

demographer to make a thorough survey of African demographic data gathered at that time, R.R Kuczynski, in his classic *Demographic Survey of the British Colonial Empire* published in 1949, adopted a very sceptical attitude to such views. In East Africa as a whole, he found "no conclusive evidence that fertility (was) extraordinarily high anywhere". Instead, he argued that it was demonstrably low "among some important tribes". The conclusion he drew was that, while the general level of fertility was evidently higher in East Africa than in Western Europe in the 1940s, there was no reason to believe that African fertility was in excess of that in Britain in the late nineteenth century and it was "certain" that it was lower than Eastern European fertility had been around 1900.<sup>47</sup>

Now, even if this earlier moderate fertility was a historical fact, the possibility remains that it was 'abnormal' in the sense discussed above regarding mortality, i.e. aggravated by epidemics and famines. There are strong reasons to believe that this, indeed, is part of the explanation. As already noted, such things obviously affected the reproductive capacities of the survivors,<sup>48</sup> and the extremely low levels of fertility observed during the German period are hard to explain otherwise. But this does not mean that the 'structural' fertility levels in precolonial societies were excessively high. Besides Burton's quotation, referred to above, which originates from a period when the "opening up" of the country was at a very early stage, there is a fair amount of other ethnographic source material which attests that many mechanisms of fertility regulation were operating in Tanzanian pre-colonial societies, and as a result, average numbers of births per woman must have been lower than they are now.

Again, this is an issue which needs still more research and I shall merely sketch the broad outlines without trying to provide detailed evidence **here**.<sup>49</sup> The main point to note is that in precolonial societies the spacing, i.e. the intervals between births seems to have been considerably longer than it is today. This was a result of cultural taboos which severely restricted sexual intercourse with breast-feeding women, combined with the physiological mechanisms activated by breast-feeding. There is evidence, not always in great amounts or of very high quality but covering most of the main Tanzanian peoples including agricultural and pastoral, patrilineal and matrilineal, to suggest that the breast-feeding periods were extremely long, up to two or three, sometimes even four to five, years, and that sexual intercourse was not allowed for the woman during that time. It should be emphasised that this "postpartum abstinence" was a social norm and we have no way of telling to what extent it was a social practice as well, but there is no doubt that in most cases to become pregnant while breast-feeding was regarded a major disgrace and something to be avoided at all costs. It is also now well-established that breast-feeding as such gives some physiological protection against pregnancy by deferring the onset of ovula-

tion and thus prolonging the time during which a woman is unable to conceive. But the length of this "postpartum anovulation" varies, depending not only on the duration but also on the intensity of breast-feeding and is never entirely **predictable**.<sup>50</sup> Thus, in addition to such natural mechanisms, herbal and other more mechanical means of trying to prevent unwanted pregnancies were evidently known in many Tanzanian societies. There are indications in the sources that the skills of abortion were relatively widespread, and some societies resorted to infanticide too. The extent of the latter practices is very difficult to gauge, however.

Some demographers have argued that the long lactation periods connected with sexual abstinence undoubtedly practised in many African societies should not be seen as means of consciously limiting the numbers of children, but rather their main aim may have been the contrary, to ensure the greatest possible number of **surviving** children, by providing protection for the child who was being **breast-fed**.<sup>51</sup> This argument has merit and deserves to be taken seriously. But fertility, with which we are concerned here, is a question not of the number of surviving children but of the number of births, and there is no reason to believe that people in precolonial African societies could not have realised that customs and practices which led to a spacing between the births of children of at least three, often four or more years, also affected the total numbers of births. The maximum number of live births allowed by this system depended not only on spacing intervals but also on the length of the socially allowed reproductive period of women. One can visualise different options from four or five to seven or even eight births, and evidently there were appreciable differences between ethnic groups. Yet it is very hard to see how the present overall fertility rates of some seven births per woman could have been achieved without a gradual erosion of these customs, beginning most probably under colonial rule.

The erosion of the old customs and practices may have been somewhat concealed by the fact that the duration of breast-feeding in Tanzania is still relatively long, in particular when compared with most other parts of the world. On the basis of surveys made in the late 1970s it has been estimated that in the rural areas of Tanzania about 90% of the children are breast-fed at one year of age and about half at least until two years.<sup>52</sup> However, it is evident that the average duration of breast-feeding is now shorter than it used to be and lactation periods are still shortening. Not surprisingly, this process is most pronounced in cities, and even there among higher-income **groups**,<sup>53</sup> but it is by no means confined to them only. There are case studies showing a steadily declining trend in the duration of breast-feeding e.g. in rural Moshi and **Lushoto**.<sup>54</sup> Other surveys report that breast-feeding periods exceeding three years are becoming almost non-existent, and mean periods seem to be somewhat below two years even in rural **settings**.<sup>55</sup> But

because the biological protection against pregnancy given by breast-feeding was only partial and diminishing with the passage of time, the postpartum abstinence taboo was essential and its rapid erosion may be demographically more important than the physiological effects of the shortening of lactation periods.<sup>56</sup> In any case, there is now an increasing number of cases where breast-feeding is interrupted and concomitantly finished with a new pregnancy, something which was strongly condemned in the traditional system.<sup>57</sup> This was summed up by an elderly Nyakusa man for an anthropologist already in the 1950s:<sup>58</sup>

Formerly it was a taboo to make a woman pregnant before her previous child was four or five years old. Her husband's sisters made a great case about it. The child must know how to run before a younger brother was born. We said: 'How can a woman carry two children?' Now she becomes pregnant again when the elder is two. Of those who give birth again before that it is said: 'They kill the elder child'.

## THE KEY: FERTILITY

The above analysis suggests that changes in fertility may have played a larger role in Tanzanian demographic history than was hitherto realised. In any case, as can be readily seen from the projections presented above, fertility will probably be much more significant for population trends in Tanzania than mortality.<sup>59</sup> Furthermore, fertility limitation will be the key factor in any attempts to slow down population growth, because the two other options theoretically available, mass emigration or a purposeful raising of mortality rates, are for obvious reasons out of the question in practice. Thus, we still need to look at possible determinants of fertility, both in general and in Tanzania in particular.

### *Determinants of fertility: 'background' and 'proximate'*

Fertility is about having children, but the question of why people do have children does not need to detain us for too long. The Malthusian "passion between the sexes" is still there;<sup>60</sup> and it is also well known that "in every society, children bring parents satisfaction and pleasure".<sup>61</sup> A more relevant issue here is why people in some societies tend to have more children than people in other societies and, still more particularly, what are the factors that make the number of children so high in Tanzania and in other African societies.

This is a question which has often been approached in terms of the value of children. There is no consensus among the demographers, but it is fair to say that many, if not most, of them are inclined to think that people will

desire many children as long as they perceive it as advantageous, or at least not disadvantageous, to them, and as long as they desire many children they will have them. But there are several theories, partly conflicting and partly mutually reinforcing, about the nature of the expectations, calculations and decisions involved. Some popularity in African demography has been gained by John Caldwell's "restatement of demographic transition theory". Caldwell argues that the main determining factor of fertility is what he calls the "intergenerational wealth flow". As long as the direction of this flow is from the younger to the older generation, i.e. wealth flows from children to parents, as it always does in "traditional" societies, fertility will remain "high"; it is only after the reversal of the flow that fertility will decline. The timing of the reversal, "the great divide" is for its part dependent on changes mainly in social structure. Particular importance is attached by Caldwell to factors like mass education and family structure. He believes that the advent of compulsory mass education and the nucleation of the family are instrumental in altering the cost/benefit ratio for children and thus reversing the direction of the intergenerational wealth flow.<sup>62</sup>

A more detailed discussion on the relative merits of this and other economic and social explanations of human fertility is beyond the scope of this chapter. However, there seems to be no good reason to deny that the value of children must rank high as an influence on fertility behaviour, and that both the objective value and the subjective perceptions of it are to a great extent socially determined, changing from one society to another. In a peasant-dominated country like Tanzania children acquire economic value in the first place because of their considerable contribution to agricultural and domestic labour. To be sure, Kamuzora has shown that, on purely monetary calculations, the material benefit children bring to their parents does not necessarily match the cost of their upbringing, but his studies also confirm that Tanzanian children participate in the economic activities from a very early age. Thus, even though children may not be as good an investment as the more extreme economic interpretations of fertility would make us believe, they are not a heavy burden *either*.<sup>63</sup> Furthermore, as also briefly noted by Kamuzora, labour input is only one among the material benefits parents can expect from their children. In Tanzanian conditions, a more important factor may be the function of children as a security for old age. In a survey, the most popular reason stated for the desire to have a large number of children was "They will look after me in my old age".<sup>64</sup> And in addition to labour and security, there can be several other perhaps less tangible and more prestige-related but nonetheless very real gains from a large progeny. Thus, the 'demand' for children is still very high in Tanzania. In the above-mentioned survey, the number of children desired by women was said to be from four to six in Kilimanjaro and six to eight in Mara and Morogoro.<sup>65</sup>

But what the explanations emphasising the value of and 'demand' for children often overlook is that there are also a number of factors regulating the 'supply' of children. The first one is naturally mortality. Fertility does not signify the number of children but the number of births, and how many of the born children survive depends on mortality. The relationship between mortality and fertility is much more complex than it first appears, however. As noted above, it is entirely possible that a lower fertility in precolonial African societies resulted in a larger number of surviving children because of the lower infant and child mortality effected by longer breast-feeding periods. Also the assumption that a high mortality is among the main causal factors in keeping up a high fertility needs some qualification. It is *apriori* true in the sense that, for a society to survive, birth rates must in the long run at least match death rates. But it has proved impossible to establish a direct causal relationship between mortality and fertility. In Tanzania, the overall trends of rising fertility and declining mortality speak against such a relationship, and a look at the regional and social differences renders the picture still more complex. The regions with highest fertility include those with both lowest (Kilimanjaro) and highest mortality (Mbeya, **Rukwa**).<sup>66</sup> As for the social classes or strata, the one with the lowest mortality, the "professionals", has, rather unexpectedly, the highest fertility. However, this holds only when the classification is made according to the occupation of the husband; women with higher education have both lower mortality and lower fertility, in particular in the urban **areas**.<sup>67</sup>

Indeed, if we take a wider comparative look at human societies, it becomes immediately clear that mortality cannot be the only factor regulating the supply of children and influencing fertility. Biologically, a human female is capable of bearing more than 15 children, but no society has ever been known to have come close to averaging such a number, no matter how high the mortality. The most extreme example recorded, a small white religious sect in North America, had slightly above 10 births per **woman**.<sup>68</sup> As argued above, the fertility levels of Tanzanian precolonial societies were much lower. Hence, it seems that in every society there must be some mechanisms at work which keep the number of children much below the maximum, and the question is what such mechanisms might be.

Earlier, if this possibility was given serious consideration at all, it was often suggested that in African conditions fertility might have been suppressed by factors like poor health and poor nutrition. However, modern historical and demographic research has cast some doubt on this line of argument, and it is now being deemphasised. Health certainly has a major impact on fertility, but the influence of nutrition may not be that great if situations of actual starvation are **excluded**.<sup>69</sup> It was argued above that the population catastrophes in the early colonial period very probably lowered the fertility of the survivors, but they were exceptionally hard times, data on

which cannot be automatically projected backwards to the more 'normal' precolonial period. Unfortunately, our knowledge of the general health conditions and nutritional status in precolonial African societies is extremely limited. It is patently clear that precolonial societies were not disease-free paradisiac places, but there is also a fair amount of evidence to question the more sombre view that famine and disease were "the main reasons for underpopulation".<sup>70</sup> To quote Burton again, who certainly cannot be accused of a pro-African point of view, the African population in the regions he visited was "superior in comforts, better dressed, fed and lodged . . . than the unhappy Ryot of British India". Even though new epidemics like smallpox were spreading at that time, "the vast variety of diseases which afflict more civilised races" were still unknown."

A more promising approach to an understanding of the forces influencing human fertility has been provided by the introduction into the discussion of the idea of intermediate or "proximate" determinants of fertility.<sup>72</sup> By them are meant factors that influence fertility directly, without any mediation: marriage patterns, frequency of intercourse, temporary or absolute infecundity, culturally and socially conditioned periods of abstinence, use of contraceptives, foetal mortality. As is evident from the list, the proximate determinants can be biological, cultural or social; but what distinguishes them from the rest and makes it possible to regard them as a category is that they alone have a direct impact on fertility. All other possible influences must operate through them. Thus, changes in socioeconomic structure or social attitudes are to be seen as 'background' determinants, the impact of which must percolate through the proximate determinants. As the latter usually react with a shorter or a longer lag and in their operation can easily outweigh one another, it is by focusing on them that a clue can be gained as to why demographic developments have not followed socioeconomic ones in the smooth way posited by the demographic transition theory.

This is not the place for an extended discussion on the operation of proximate determinants of fertility in Tanzanian history; let us simply make a few comments on those which seem the most important. Two have already been given considerable attention above: postpartum anovulation greatly influenced by breast-feeding, and postpartum sexual abstinence of breast-feeding women. Combined, these two produced a period of 'postpartum non-susceptibility' during which a woman was not exposed to the risk of conceiving, and led to a spacing of several years between the births of children. Even though the actual duration of periods of non-susceptibility and spacing can no longer be ascertained, it is not unreasonable to assume that they must have cut the actual number of births probably more than to half the biological maximum. But the whole arrangement was much dependent on the duration of breast-feeding, which for its part was backed up by culturally conditioned sanctions, like the belief of the Nyakusa that if



a woman becomes pregnant while breast-feeding "her breasts become **rotten**".<sup>73</sup> Now, with all the economic, social, political and cultural changes since the beginning of colonialism, the force of such sanctions has been eroded as have the customs themselves.

Among the rest of the proximate determinants, traditionally only one seems to have had a major fertility-inhibiting effect in Tanzania. That is infecundity. As in many parts of Africa, the number of infecund women in Tanzania appears to have always been much higher than the three to five per cent in other continents. German doctors complained of high rates of infecundity especially on the coast and in some inland districts like Bukoba. The first overall figures are from the 1948 census in which 17% of women over 45 years of age were classified as **childless**,<sup>74</sup> and the proportion was roughly the same in 1957.<sup>75</sup> Since then, the levels of infecundity seem to have declined. The percentage of definitely childless women aged 40-49 was 10.9 in 1967 and of those not stating the number of their children 2.7.<sup>76</sup> The researchers in the 1973 *National Demographic Survey* suspected that much of the rise in fertility observed might have been due to a reduction in sterility. Nevertheless they found that 11.4% of women aged 40-49 were **childless**.<sup>77</sup> When allowance is made for the fact that the incidence of infecundity varies from one place to another, it is clear that it must have an appreciable diminishing effect on total fertility rates in several regions.

The reasons for such a high prevalence of infecundity are a matter of debate. That health plays a major role can hardly be doubted, but what is less clear is the contribution of the specific diseases involved. Among the major causes suggested have been malaria and gonorrhea, of which only the former is indigenous to Africa. But there are also several other factors that may have a bearing here. Next to nothing is known about the role of foetal mortality, either spontaneous (miscarriages, still births) or induced (abortions). Obviously, infecundity and its causes are issues which still need a great deal of research.

#### *Family planning, population policies and fertility*

During the last couple of decades the idea has become commonplace in much of the West and in many developing countries that the Third World states need to adopt explicit population policies and provide their people with family planning facilities in order to curb the high rates of fertility and population growth. The demands originally cherished by relatively small even if noisy and influential lobbies have been intensifying and are now becoming almost ubiquitous. Notwithstanding the successful pressure of the anti-abortionists on the Reagan Administration, this is the one area in which even the World Bank is at present advocating increased state intervention, as evidenced by the *World Development Report 1984*. As many

of the Third World governments themselves have grown genuinely concerned about their population prospects, we now have several population programmes being actively implemented, in the first place in Asia and to a lesser extent in Latin America. That of China is particularly vigorous; its goal is that the overwhelming majority of couples should have one child

In Tanzania, and in Africa in general, recognition of the need for policies and programmes to slow down population growth has been gaining ground much more slowly. Nyerere expressed his concern at an early stage in his presidency that "men's ability to produce children is greater than their ability to bring them up in a proper manner".<sup>79</sup> Later he began publicly to advocate a return to the old practice of child-spacing.<sup>80</sup> A private family planning organisation, UMATI, has been allowed to work in cooperation with the Ministry of Health and to supply contraceptives through the latter's maternal and child health programme. According to press guesstimates, the coverage of women 'at risk' by family planning services is some 5%.<sup>81</sup> But this has been done explicitly for spacing purposes and not to lower fertility and slow down population growth. Of course, the argument in this chapter has been that birth spacing in actual fact entails intervention in fertility behaviour, but the issue is politically delicate. Views on it among Tanzanian decision-makers are obviously divided, and the Tanzanian state, which has revealed its interventionist character on more than one occasion, has remained conspicuously inactive and vacillating on the question of population growth. Even though Tanzania has joined the countries which, in their replies to United Nations' population inquiries, admit that their rates of population growth are too high, fertility levels were still declared satisfactory in 1983. No intervention was said to be planned.<sup>82</sup> At the second international population conference in Mexico City in 1984 the Tanzanian delegate gave an extremely non-committal speech, consisting of a straightforward review of the "Kilimanjaro Programme of Action on Population" accepted by most African states. The programme was said to promise "effective programmes to reduce the current high levels of fertility and mortality, alleviate the pressure on land and resources of uneven distribution of population and find solutions to the problems of sterile and sub-fertile couples". What the priorities of Tanzania were and what it planned to do was not mentioned.<sup>83</sup>

It should be noted here, however, that our knowledge of the effects of family planning programmes and population policies is inadequate. From European and North American demographic history we know that modern contraceptive and population policies are *not* in fact necessary preconditions for spectacular falls in fertility. On the other hand, it appears very likely that programmes and policies have at least contributed towards the declines, some of them quite substantial, that have taken place in many

Asian and Latin American countries over the last few decades. But most of the successful programmes were established in situations where fertility was already in decline, and it is hard to find a case in which a programme could be shown to have initiated the fall.<sup>64</sup> It is naturally very difficult, if not impossible, to gauge the respective impact of 'family planning' programmes, which are commonly regarded as synonymous with the provision of contraceptives, and broader 'population policies' embracing state action which ranges from the gathering of information to the setting of birth quotas for certain groups. What seems evident from the above discussion, however, is that family planning programmes can influence only very few of the proximate determinants of fertility, and many of them will remain untouched even by population policies.

## CONCLUSION

This chapter has presented a broad overview of population trends and their determinants in Tanzania in a historical perspective. The discussion has been mainly confined to the country level; regional and social differences have only been mentioned in passing. An adequate treatment of the subject would of course require a much more systematic discussion of the latter, but it has not been attempted because of the limited nature of the chapter. The main points made here so far can be summarised as follows. The population of Tanzania is growing at a very rapid and even accelerating rate. Even though the country still has underutilised agricultural resources, rapid population growth is obviously creating more problems than are being solved. Factors behind the population upsurge are to be found in changes both in mortality and in fertility. While mortality has been falling, fertility has not only remained high but has actually been rising. The present, unprecedented rates of population growth are a combined effect of these two trends. For the future, fertility will be a much more important factor than mortality, provided that major population catastrophes are avoided. Fertility is greatly influenced by the perceived value and thus the 'demand' for children, but there are also many factors regulating the 'supply' of children. In particular, there are the 'proximate determinants' that have a direct impact on fertility. It is only through them that all other influences, including family planning and population policies, can operate.

Much of the argument here has been based on recent and present trends in Tanzanian demography, but there are also alternative scenarios to be considered, and care must be applied when speculating about the future. Even the possibility of a spontaneous, substantial fertility decline in Tanzania cannot be totally ruled out. As Kamuzora has recently argued, several factors in the present economic and social situation tend to suppress the

value of children. The policy of universal primary education means that children are becoming more expensive (uniforms, books, etc.) and at the same time economically less beneficial (because of the loss of their labour through schooling). More education also entails an increasing loss of parental control, and the economic crisis has made it more difficult for children to find remunerative white-collar jobs and send remittances to their parents back home. In this way the value of children to parents as security in old age is being reduced. The conclusion of Kamuzora is that, while today's parents may still end up with high fertility because they think in the traditional way, today's children who have been socialised at school and have experienced job frustrations, etc. so that they do not expect much return from children, may well "limit their fertility to a few children for reasons of emotional and non-material values". This will be done by postponing marriage, i.e. through changing marriage patterns and by adopting contraception within marriage.<sup>85</sup>

But there are many other factors which seem to work in the opposite direction and strengthen the persistence of present trends. This is true even on the 'demand' side. While the direct economic benefits derived by parents from their children may sometimes have been exaggerated and while the present crisis will diminish them further, it is hard to see how the economic value of children can disappear in a peasant economy. And Tanzania is committed to remain such an economy. Even though the emphasis on agriculture and rural development will certainly not stop the migration to the towns, it may make it slower than it would have otherwise been. And the factors working for a high and increasing fertility are still more evident on the 'supply' side, in particular with regard to those proximate determinants that have traditionally had the greatest fertility-inhibiting effects. Universal primary education may decrease the economic value of children but it will in all probability also contribute to the further erosion of old postpartum customs and control mechanisms and thus generate more pressure towards a continuing rise in fertility. The phenomenon common in Africa, that women with a few years of education have higher fertility than those with none, has been established in Tanzania too.<sup>86</sup> The development of infecundity levels is more difficult to foresee, but given Tanzania's commitment amid all its practical problems to the maintenance and even improvement of its health care system, they are likely to decrease or at least not to increase. Thus it may rather be that the forces working for a high and ever increasing fertility will still prevail over the counteracting forces; the crucial questions concern for how long this will be the case, for years or decades, and whether the outcome can be influenced by policy measures.

One last issue is what the Tanzanian state could do in practical terms if it decided to intervene. This is not a question to be answered within the scope of this chapter, which has been more of a historical than of a practical

nature. Suffice it to note that, even though the determinants of fertility are, according to the analysis presented here, to a great extent cultural and social, i.e. caused by the activity of man, it does not follow that man could manipulate them at will. The precolonial fertility control mechanisms were part and parcel of the cultural and social environment, and they can hardly be reactivated in an entirely different context. New means have to be found. But ultimately, questions related to fertility are much more than technical, political or cultural choices; they have deeply private dimensions and involve some of the most basic human values. State intervention is always, as a political action, imposed on the society from above, and it can be successful only within the limits set by the social structure in a historical context. It may be that the room for manoeuvre left for the Tanzanian state in the early stage is a fairly narrow one, and much time and effort will be required to develop policies that work. Here, too, Tanzania may have to find its own way; a Chinese-style one-child policy is hardly to be expected or needed.

## NOTES

This chapter has benefited from comments and other contributions by several people. In particular, I am indebted to Birgitta Bucht, Helena Jerman, **Marja-Liisa Kiljunen**, Kari Pitkanen and **Elina Visuri**. None of them is responsible for the interpretations I have placed on their contributions.

1. Malthus, **Thomas Robert**, *An Essay on the Principle of Population*, Harmondsworth, 1970, p. 103. The first edition of this work appeared in 1798. The second, substantially revised and enlarged, version came out in 1803. For the historical development of Malthus's argument see op. cit., 'Introduction' by Anthony Flew, pp. 17 ff.

2. This argument has been developed and actively propagated by Ester **Boserup**. See her *The Conditions of Agricultural Growth*, Chicago, 1965 and *Population and Technology*, Oxford, 1981 (the latter published in the USA under the title *Population and Technological Change*, Chicago, 1981).

3. United Nations, *National Experience in the Formulation and Implementation of Population Policy, 1960–1976, United Republic of Tanzania*. (ST/ESA/SER.R/28), 1978, pp. 16–17.

4. United Nations, Economic Commission for Africa, *Report of the Second African Population Conference, Arusha*, January 1984 (ST/ECA/POP/I), Vol. 1, p. 7.

5. Nyerere to TANU National Conference in Dar es Salaam, 28 May 1969, in Nyerere, **Julius**, *Freedom and Development*, Dar es Salaam, 1973, p. 87.

6. Cf. Egero, Bertil and Roushdi A. **Henin**, 'Population Growth', in Bertil Egero and Roushdi A. **Henin**, *The Population of Tanzania*, Dar es Salaam, 1973, p. 218 and 1978 *Population Census*, Vol. 4, Dar es Salaam, 1982, p. 1.

7. World Bank, *World Development Report 1984*, New York, 1984, Annex, Table 19, p. 254.

8. According to World Bank estimates, the highest rates of population growth are in Kenya and Zimbabwe, calculated at 4.4% annually for 1980–2000. Countries that have higher rates than Tanzania include Libya (4.3%), Jordan (3.9%), Ghana (3.9%), Congo (3.8%), Algeria (3.7%), Ivory Coast (3.7%), Zambia (3.6%) and Rwanda (3.6%). *World Development Report*, op.cit., Annex Table 19, pp. 254–5.

9. See e.g. Lee, W.R. (ed.), *European Demography and Economic Growth*, London, 1979. *passim*; and *World Development Report*, *op.cit.* pp. 58–60.

10. For figures to support the discussion see Table 2.1. Figures are estimates compiled from various sources undertaken by various methods and they are presented here for illustrative purposes only.

11. Sources: *Jahresberichte über die Deutschen Schutzgebieten* 1912/1913. Stat. Teil, p. 36; United Nations, *Population of Tanganyika*, New York, 1949, p. 18; 1978 *Population Census*, Vol. 4, p. 1; notes 32–37 and 39–43 below.

12. *World Development Report*, 1984, *op. cit.*, pp. 4, 281.

13. *Ibid.*, Population data supplement, Table 1, p. 192; and annex, Table 19, p. 254.

14. Kocher, J.E., 'Population Data and Projection for Tanzania', in J.E. Kocher (ed.), *Social and Economic Development and Population Change in Tanzania*, BRALUP Research Paper, No. 36. Dar es Salaam, 1976.

15. Calculation based on *World Development Report 1984*, *op. cit.*, annex, Table 1, pp. 218–219.

16. See e.g. World Bank, *Tanzania. Agricultural and Rural Development Sector Study*, December, 1974. I, p. vi.

17. Taking 1975 as the base year, FAO researchers calculated that a "low level of inputs" would produce surplus food for 19.8 million and an "intermediate level of inputs" for 128.9 million more people than Tanzania then had. The "low" technological level referred to a situation in which only manual labour was used and no fertilisers and pesticides were applied, while the "intermediate" level assumed the use of improved hand tools and draught implements, some fertiliser and pesticide application and simple soil conservation measures. Both situations are naturally theoretical, and in actual fact Tanzania is somewhere between the two. FAO, *Potential Population Supporting Capacities of Lands in the Developing World*, Rome, 1982, esp. pp. 56 and 31.

18. Moore, J.E., *Rural population carrying capacities for the districts of Tanzania*. BRALUP Research Paper, No. 18, Dar es Salaam, 1971, esp. Table 5, pp. 41–46; and *ibid.*, 'Population distribution and density', in Egero and Henin, *op. cit.*, pp. 38–55 and app. 3.3, pp. 257–9.

19. For technological development, see e.g. the chapters by Finn Kjærby and Torben Rasmussen in this book.

20. Men, William, *The African Husbandman*, Edinburgh and London, 1965, esp. pp. 375–7.

21. See e.g. Uriyo, A.P., *Farming Systems and Soil Erosion Hazards in Tanzania*, University of Dar es Salaam, Inaugural Lecture Series, No. 29. Dar es Salaam, 1980, esp. pp. 7–8.

22. Ngallaba, S.A.M., 'A Review of the Population Situation in the United Republic of Tanzania', *Final Report on the National Seminar on Population and Development in the United Republic of Tanzania*. Addis Ababa, 1981 (ST/ECA/SER.A/3), p. 6.

23. See e.g. Ishumi, Abel G., *The Urban Jobless in Eastern Africa*, Uppsala, 1984.

24. For concise statements of the basic tenets of the theory by its main proponent, see Notenstein, Frank, 'Population – The Long View', in T.W. Schultz (ed.), *Food for the World*, Chicago, 1945, pp. 36–57; and 'Frank Notenstein on Population Growth and Economic Development', *Population and Development Review*, 9 (1983), pp. 345–60.

25. *World Development Report*, 1984, *op. cit.*, p. 60. See also United Nations, *World Population Trends and Policies*. 1983 Monitoring Report, p. 538.

26. Coale, Ansley, 'Fertility in prerevolutionary China: Defense of a reassessment', *Population and Development Review*, 10 (1984), p. 478.

27. For an overview, see Dyson, Tim and Mike Murphy, 'The Onset of Fertility Transition', *Population and Development Review*, 11 (1985), pp. 399–440.

28. I have presented some of the documentation in my Finnish-language *licenciante* thesis 'Saksan siirtomaavallan kehityspolitiikka nykyisen manner-Tansanian alueella 1884–1914 ja

sen vaikutus Tansanian kehitykseen' (Development policies of German colonialism in what is now mainland Tanzania in 1884–1914 and their impact on Tanzanian development), University of Helsinki, 1985. I am at present upgrading that work to a doctoral thesis in English.

29. Henin, Roushdi A., Douglas C. Ewbank and Emanuel K. Sekatawa, 'Mortality estimation', in Henin, Roushdi A. (ed.), *The Demography of Tanzania*. An Analysis of the 1973 National Demographic Survey of Tanzania, Vol. 6, Dar es Salaam, n.d., p. 181; Sembajwe, I.S.L., 'The Status of Knowledge on Mortality in Tanzania', *Utafiti*, 6 (1984), p. 179.

30. E.J. Southon, 'The History, Country and People of Unyamwezi', London Missionary Society Archives (School of Oriental and African Studies, London), Central Africa 1880 3/4/C, p. 10.

31. In the literature there is no satisfactory treatment of the early population catastrophes. The best discussions available are Hartwig, Gerald, 'Demographic Considerations in East Africa during the Nineteenth Century', *The International Journal of African Historical Studies*, 12 (1979), pp. 653–72 and Kjekshus, Helge, *Ecology Control and Economic Development in East African History*, London, 1977, pp. 126ff. The empirical foundation of Hartwig's article is, however, rather narrow and Kjekshus advocates the incorrect view that the diseases would have spread in full force only after the beginning of colonisation.

32. Culwick, A.T. and G.M., 'A Study of Population in Ulanga, Tanganyika Territory'. *Sociological Review*, 30 (1983), p. 375.

33. United Nations, *Additional Information on the Population of Tanganyika*, New York, 1953, p. 5; Sembajwe, op. cit., pp. 179–80, and *Population and Socio-economic Development*, Institute of Resource Assessment, University of Dar es Salaam, Service Paper No. 8319, Table 6, p. 8.

34. 'Familien-Nachwuchsstatistik über die Eingeborenen von Deutsch-Ostafrika', *Deutsches Kolonialblatt* (1914), pp. 440–57 and Külz, L. 'Zur Biologie und Pathologie des Nachwuchses bei den Naturvölkern der deutschen Schutzgebiete', *Beihefte zum Archiv für Schiffs- und Tropen-Hygiene* (1919), Beih. 3, pp. 86 ff.

35. Martin, C.J., 'Some Estimates of the General Age Distribution, Fertility and the Rate of Natural Increase of the African Population of British East Africa', *Population Studies*, 7 (1953), pp. 195–96; Tanganyika, *African Census Report 1957*, Dar es Salaam, 1963, pp. 88–91, 107.

36. Egero and Henin, op. cit., p. 184.

37. Estimates by United Nations Economic Commission for Africa, 'Mortality Levels. Patterns and Trends in Africa: A Comparative Analysis for Selected Countries in Eastern Africa', mimeo (EPAIPDI WP/1983/21), Table 12, p. 19.

38. Gutmann, Bruno, *Das Recht der Dschagga*, Munich, 1925, p. 144.

39. Calculated on the basis of United Nations, *Additional Information*, op. cit., p. 8; Martin, 'Some Estimates', op. cit., pp. 194, 196; and Tanganyika, *African Census Report 1957*, op. cit., p. 85.

40. Page, H.J. and A.J. Coale, 'Fertility and Child Mortality South of the Sahara', in Ominde, S.H. and C.N. Ejiogu (eds.), *Population Growth and Economic Development in Africa*, London/Nairobi/Ibadan, 1972, p. 60.

41. Egero and Henin, op. cit., p. 201.

42. Ngallaba, op. cit., p. 9; Sernbajwe, *Population*, op. cit., Table 7, p. 9; Ntosi, James P.M. 'An Appraisal of the Utility of African Census Data for Estimating Vital Rates', *IUSSP International Population Conference*, Florence 1985, part 4, p. 513.

43. Ewbank, Douglas C., 'Fertility Estimation', in Henin, Roushdi, A. (ed.), *The Demography of Tanzania*, An Analysis of the 1973 National Demographic Survey of Tanzania. Vol. 6, pp. 80, 91–2.

44. Henin, Roushdi A., Douglas C. Ewbank and Nicholas E. Oyo. 'Fertility Trends: Analysis of Fertility Histories', in Henin, *Demography*, op. cit., pp. 94–109, quotation p. 109.

45. Burton, Richard, 'The Lake Regions of Central Equatorial Africa, with Notices of the Lunar Mountains and the Sources of the White Nile; being the Results of an Expedition undertaken under the patronage of Her Majesty's Government and the Royal Geographical Society of London, in the years 1857-1859', *The Journal of the Royal Geographical Society*, 29 (1859), p. 311.

46. I have presented some evidence for this in my *licenciante* thesis, op. cit., pp. 78 and 390.

47. Kuczynski, R.R., *Demographic Survey of the British Colonial Empire*, Vol. II. London, 1949, p. 118.

48. See the reference to the study by the Culwicks, note 32 above.

49. I have already gathered a fair amount of evidence from ethnographic sources and hope to be able to publish it in the near future. For some readily available sources, see chapters by T.O. Beidelman on the Kaguru, O.F. Raum on the Chagga, Corlien Varkevisser on the Sukuma and Monica Wilson on the Nyakusa in Angela Molnos (ed.), *Cultural source material for population planning in East Africa*, vols. 2-3, Nairobi, 1972-1973.

50. See e.g. Gray, R.H., 'Birth intervals, postpartum sexual abstinence and child health', in Hilary J. Page and Ron Lesthaeghe (eds.), *Child-spacing in Tropical Africa*, London, 1981, esp. pp. 100-102.

51. Lesthaeghe, R. et al., 'Child spacing and fertility in Sub-Saharan Africa: an overview of issues', in Page and Lesthaeghe (eds.), *Child-spacing*, op. cit., p. 9.

52. Quoted by Ngaza, Olyvia, 'Nutrition and Health Status', in Olyvia Ngaza and Han Bantje (eds.), *Infant Feeding in Dar es Salaam*, TFNC Report No. 484 and BRALUP Research Paper No. 66. Dar es Salaam, 1980, p. 129-30.

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54. Kocher, James E., *Rural Development and Fertility Change in Tropical Africa: Evidence from Tanzania*. Dept. of Agricultural Economics, Michigan State University, African Rural Economy Paper No. 19, East Lansing, 1979, Table 1, p. 37.

55. See Tanzania Government/UNICEF Task Force on Nutrition, 'Situation analysis of the problem of malnutrition and its dietary aspects', unpublished, Dar es Salaam, 1984, p. 20 and Sembajwe, I.S.L., *Demand for Modern Family Planning in Tanzania*, BRALUP Research Report No. 47 (NS), Dar es Salaam, 1981, p. 7.

56. For some references, see Schoenmaeckers, R. et al., 'The childspacing tradition and the post-partum taboo in tropical Africa: anthropological evidence', in Page and Lesthaeghe (eds.), *Child-spacing*, op. cit., pp. 35-6 and 48 ff. However, cf. Sembajwe, *Demand for Modern Family Planning*, op. cit., p. 7, for partly contradictory micro-level data which cannot be discussed here.

57. For some scattered evidence, see e.g. Tanzania National Scientific Research Council and UNICEF. *The Young Child in Tanzania*, Dar es Salaam, 1973, pp. 181 and 330. Cf., however, Ngaza and Bantje (eds.), *Infant feeding*, op. cit., p. 53.

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59. Cf. the second and third *World Development Report 1984* projections, above.

60. Malthus, op. cit., p. 70

61. *World Development Report 1984*, op. cit., p. 52.

62. Caldwell, John, 'Towards a Restatement of Demographic Transition Theory', *Population and Development Review*, 2 (1976), pp. 321-66; *ibid.*, 'Mass Education as a Determinant of Fertility', *ibid.*, 6 (1980), pp. 225-55.

63. Kamuzora, C. Lwechungura, 'High Fertility and the Demand for Labour in Peasant Economies: The Case of Bukoba District, Tanzania', *Development and Change*, 15 (1984), pp. 105-24; and *ibid.*, 'The material value of children over the life cycle of a family: a cross-



## POPULATION GROWTH IN HISTORICAL PERSPECTIVE

sectional study of rural and urban Wasukuma of 'Mwanza Region, Tanzania', paper at the IUSSP International population conference, Florence, 5–12 June, 1985.

64. Sembajwe, *Demand for Modern Family Planning*, op.cit. (note 55), p. 2.

65. In small samples in selected villages, Sembajwe, loc. cit..

66. For regional differences in mortality and fertility, see for 1967 Egero and Henin, op.cit., p. 179 and 195; and for 1978, Sembajwe, *Population*, op. cit. (note 33), pp. 8–9.

67. Hogan, Howard R. and Shiraz Jivani, 'Differential Mortality', in Henin (ed.), *Demography*, op. cit. (note 43), pp. 211–13; and Henin, Roushdi A., 'Fertility Differentials . . .', ibid., pp. 116, 118–20.

68. Called the Hutterites, living in parts of Canada and the USA. Other similar communities have had a high fertility too, See e.g. Charbonneau, Hubert, 'Les régimes de fécondité naturelle en Amérique du Nord: bilan et analyse des observations', in Henri Leridon and Jane Menken (eds.), *Natural Fertility*. Liège, 1979, pp. 448 ff.

69. Mosley W. Henry, 'The Effects of Nutrition on Natural Fertility', in Leridon and Menken (eds.), *Natural Fertility*, op.cit., pp. 83–105.

70. As claimed by John Iliffe, *A Modern History of Tanganyika*. Cambridge, 1979. p. 13.

71. Burton, Richard, *The Lake Regions of Central Africa*. London, 1860, Vol. 2, pp. 278 and 318. It is worth recalling that Burton mainly visited the climatically less favoured parts of the country, the coast and the central plateau up to Lake Tanganyika.

72. The pioneering work was the article by Kingsley Davis and Judith Blake, 'Social Structure and Fertility: An Analytic Framework', *Economic Development and Cultural Change*, 4 (1955–1956), pp. 206–35. The idea has since been developed by John Bongaarts and applied to Africa by Ron Lesthaeghe. In particular, see Bongaarts, John, 'A Framework for Analysing the Proximate Determinants of Fertility', *Population and Development Review*, 4 (1978), pp. 105–22; Bongaarts, John, Odile Frank and Ron Lesthaeghe, 'The Proximate Determinants of Fertility in sub-Saharan Africa', ibid., 10 (1984), pp. 511–13; and Lesthaeghe, Ron, 'Fertility and its proximate determinants in sub Saharan Africa: the Record of the 1960s and 70s', mimeo, n.d. but 1984.

73. Wilson, Godfrey, 'The Nyakusa of South-Western Tanganyika', in Elizabeth Colson and Max Gluckman, *Seven Tribes of British Central Africa*, Manchester, 1959, p. 262.

74. United Nations, *Additional Information*, op.cit. (note 33), p. 6.

75. If those "definitely childless" (11.7% of women aged 46 and over) and those who did not state the number of their children (6.2%) are added together. Tanganyika, *African Census Report 1957*, op. cit. (note 35), p. 86.

76. Egero and Henin (eds.), *Population*, op. cit. (note 6), p. 191.

77. Henin (ed.), *Demography*, op. cit. (note 43), pp. 74 ff., 104, 108, 169 ff.

78. For the Chinese programme, see e.g. *World Development Report 1984*, op. cit., p. 178; and Croll, Elizabeth, 'China refines one-child policy', *People*, 12 (1985), p. 26.

79. Nyerere, *Freedom and Development*, op. cit. (note 5), p. 88.

80. E.g. in a meeting of the General Council of the Tanzania Parents' Organisation (WAZAZI), according to *Daily News*, 29 September 1982.

81. Hamand, Jeremy, 'Tanzania: Snags in reaching the villages', *People*, 9 (1982), p. 33. No source for the figure was given.

82. United Nations, *World Population Trends and Policies*, op.cit. (note 25), pp. 735 ff.

83. *The Mexico City Conference*, compiled by the Population Division, United Nations Secretariat, New York, 1985, pp. 531–35.

84. Cf. *World Development Report 1984*, pp. 127 ff. and the review of it by Richard Easterlin, *Population and Development Review*, 11 (1985), pp. 113–19.

85. Kamuzora, 'The material value of children', op. cit (note 63), p. 12.

86. Henin, 'Fertility differentials', op. cit. (note 67), p. 116.



# 3. The Creation of Macroeconomic Imbalances and a Structural Crisis

*Knud Erik Svendsen*

A large number of developing countries have been struggling with severe economic difficulties in the last few years. This has had a serious negative impact on the living conditions of hundreds of millions of people.

In the concern about this situation great attention is being paid to macroeconomic issues. The countries have large imbalances in their balances of payments, and they run large deficits on their government budgets, which are financed by an increase in the money supply. They suffer from high rates of inflation combined with shortages of essential goods, and they have rising unemployment and falling real incomes. There are important differences among the various crisis ridden countries, but they share in common the greater importance given to macroeconomic imbalances and the policies needed to correct these imbalances.

As a consequence, the development debate has changed focus over the last five years from the questions of growth in production and its effect on the living standards of the various social groups and classes to more general financial issues expressed in monetary terms as these issues have become very important for economic and social development. On the international scene this has moved the International Monetary Fund (IMF) from a rather modest position to the very centre of the stage. Similarly, the World Bank has been in the process of changing some of its activities from development loans for specific projects to structural lending which is meant to assist the developing countries to adjust to the economic crisis.

Because of their large debts to international banks, in particular a few very large U.S. banks, the Latin American countries have attracted a lot of attention since 1982. In fact, however, the symptoms of crisis appeared even earlier in a large number of African countries which in the last years of the 1970s had to seek reschedulings of their debts. It is internationally agreed that the countries south of the Sahara are in economic distress, which has been exacerbated by drought. Many analyses of the roots of this continental crisis have been produced by the Organisation of African Unity, the World Bank and other international and national organisations. The African crisis has become an important item on the development agenda.

Tanzania has its own place in this debate. It has been turned from being

just one among many similar cases of economic distress into a very special case with unique features. Parts of the Tanzania debate – especially when addressed to macroeconomic issues – have presented a picture of Tanzanian policies and their consequences which have changed its position from that of a show case in development at the beginning of the 1970s into an example of what not to do.

"Tanzania has not met its own or its friends' expectations." "The government of Tanzania has been too slow in recognising its mistakes, and too slow in correcting them." "Tanzania has tried to do the impossible, has had much too high ambitions." These are a few standard phrases from the debate.

There are good reasons for this. In a turbulent Africa, Tanzania is a special case. It has combined a high degree of political stability with a development strategy formulated at the end of the 1960s, which emphasises the priority of the welfare of the people, the giving of a prominent role to public institutions, in other words a socialist orientation as distinct from capitalist approaches which mean a low degree of public control over market forces. This strategy has been combined with a dynamic, principled and selfconscious political leadership, centred around President Julius Nyerere. It was able to attract a high volume of foreign aid and loans from a number of bilateral donors, among which the Nordic countries had a prominent place, and from international organisations like the World Bank.

The principle of self-reliance, which together with socialism was the Tanzanian label for its policies, thus meant that a by no means low role was given to external resources, as may be seen in the Second Five-Year Plan prepared in 1968-69. These resources came to cover a larger and larger proportion of the development expenditures of the country. Self-reliance implied a wish to define the priorities of this development – and in the longer perspective to reduce the importance of these external resources, while still maintaining the principle of transfers from the rich to the poor countries.

Because of the stake of many national and international development agencies in Tanzania's performance, the debate has become highly politicised. And this has been strengthened by the fact that Tanzania, as distinct from most other developing countries, and despite its status as a very poor country in deep crisis, has been careful – some would say stubborn – in its discussions with the IMF about the conditions attached to an IMF-supported and endorsed programme to adjust its policies to the environment of the 1980s. This **IMF-Tanzania** process has been going on since 1981 and at the time of writing there is still no agreement between the two. A number of bilateral donors have joined this process and stated clearly that they find it

very important that such an agreement should be reached. This special dimension of the aid relationship will be discussed later'.

Tanzania has also had a special place in the debate within the development research community. Researchers have been involved in Tanzanian development over the years as advisors or critics or both. And this given their subjective preferences has contributed to the special tone of the Tanzania debate.

The following contribution does not claim to be objective, a claim which anyway cannot be made by any discussant. But I can try to explain my bias, insofar as far as I am able to identify it. First of all, I am strongly in favour of the basic needs strategy in Tanzania. I also think that the state, or the public sector, must play an important part in Tanzania's development, but at the same time I believe that this role has been overemphasised in relation to the real capacity of this sector. I have serious doubts about the magnitude of the allocations of resources to the state apparatus and to industry throughout the 1970s. At the same time, I believe that Tanzania could have registered the problems and responded to them a little earlier, but I accept that a number of uncertainties in the policy areas, combined with the politically and technically unrealistic positions of the IMF, have complicated matters. I find it important to have a historical and comparative perspective on policy formulation and implementation in a poor developing country like Tanzania, e.g. not to expect speeds of reaction which are not even found in our own Nordic societies with longer experience in policy processes<sup>2</sup>.

The presentation is divided into the following sections. First, I shall compare the macroeconomic situation at the beginning of the 1970s with that at the beginning of the 1980s in order to trace the major differences and to explain the meaning of macroeconomic questions, i.e. the arena of this chapter. Secondly, the creation of the crisis during the 1970s will be discussed, with an emphasis on the importance of tracing the time-path of macroeconomic problems and policies, i.e. to understand the nature and severity of the crisis in its short-term historical context. In the third section the macroeconomic changes and the policy initiatives of 1980-85, including the relationship with the IMF, will be studied, and an attempt will be made at a diagnosis of the situation in 1985.

## THE FIRST YEARS OF THE 1970s AND 1980s COMPARED

### *The foreign-exchange crises*

From the beginning of the 1970s to 1980-82 the macroeconomic situation in Tanzania changed very radically in almost all respects<sup>3</sup>.

As a small raw-material producing country Tanzania has since independ-

ence been closely linked with the world economy. But these links have changed over the ten years. In 1970–73 Tanzania more or less balanced its payments with the outside world. Exports were high relative to imports and relative to its total production, and the deficit on its current payments was small, roughly 5% of its gross domestic product. During the 1970s the changes were so fundamental that the 1980s began with a serious imbalance on external payments – a deficit on current payments of 10–15% of GDP<sup>4</sup>.

From 1970–73 to 1980–82 the volume of exports, i.e. their value corrected for price increases, fell by a little more than 25%. In the same period the terms of trade, i.e. the index for export prices divided by the index for import prices, fell by almost 30%. This combination meant that the international purchasing power of Tanzania's exports over the ten years fell to half.

The volume of imports did not follow this fall completely. It fell over the ten years by approximately 15%. In interpreting this large fall in imports it should, of course, be remembered that over the same period the population grew by almost 40%. Thus imports per capita fell by 40% over the ten years.

If actual imports had followed the purchasing power of exports the fall would have been much larger than 15%. But other sources came to supplement exports. While exports at the beginning of the 1970s were able to pay for 75% of imports, their share in the financing of imports had fallen to 45% by 1980–82. The other sources were various forms of official development assistance (loans and grants), supplier credits and arrears, i.e. an accumulation of unpaid bills. Tanzania's foreign-exchange reserves were also almost depleted, indeed, if arrears are taken into account, they turned negative at the beginning of the 1980s.

At the same time the structure of imports changed in many respects. Expenditures on oil imports rose from 7–8% to 23% of total imports in 1980–82 – despite the fact that by means of its energy policies Tanzania had managed to keep oil imports constant in volume over the ten years while oil prices shot up. Expenditures on food imports also increased during the period. Partly under the influence of the drought in 1980–81, food imports were approximately 10% of total imports at the beginning of the 1980s, as compared with more or less half that amount ten years earlier.

From the early 1970s imports of consumer goods were kept very low – increasingly leaving the shops with empty shelves, apart from Chinese goods as part of the financing of the railway to Zambia. Basic import items in 1980–82, after oil and food, were equipment and machinery for industry, agriculture, transportation and other sectors, together with current inputs and spare parts.

The high share of external borrowing and aid in the financing of imports – almost half the value of imports – meant that a large part of imports was tied to specific new projects, leaving very little for imports to run earlier projects, in particular in industry. At the beginning of the 1980s most of

Tanzania's own foreign-exchange earnings – its exports – which could be used without the agreement of foreign agencies, were spent on oil and food, which took up to 80% of export earnings.

Some external aid agencies began to change a part of their assistance from project aid to the support of imports to run already completed projects. This import support was at the level of 10–18% of imports in 1980–82.

This comparison of the first years of the two decades presents a picture of the emergence of a serious *foreign exchange crisis*. It shows declining exports and imports, and a particularly severe squeeze on imports not tied to oil, food and aid-financed new projects. What it does not show is that the pattern of economic development between the two periods had created a large industrial capacity, which was heavily dependent on current imports. Actual industrial production at the beginning of the 1980s, measured by its share of the gross domestic product (GDP), was not much larger than ten years earlier, but this was due to the fact that up to three-quarters of this capacity could not be utilised because of lack of imports. Through the use of fertilisers and fuel, especially for transport, agriculture had also become dependent on imports. It has been estimated that it takes 40 cents of imports to produce 1US\$ of agricultural output (1983); the import squeeze was therefore also hitting agricultural exports (and their local processing, e.g. the ginning of cotton).

The impact of this foreign exchange crisis was thus much larger than as shown by the deficit on current external payments. It was putting the operation of development projects in jeopardy, not only in production but also in social sectors like health and education, where the supply of drugs and school books was running short. The means available for the maintenance of roads, buildings, and transport equipment were also very scarce. Even for a poor country like Tanzania, this created a worn and tattered appearance. Shortages of almost all goods, including essentials, became the order of the day, and rehabilitation of installed capacities, rather than the creation of new ones, became an important word in the development dictionary.

#### *Overall economic performance*

The overall economic performance was strongly linked to these developments. To get an exact impression of this performance is a complicated matter, however. The usual approach is to measure the growth in all sectors, as totalled in the GDP and corrected for price increases, to get the real, as distinct from the nominal change, and then to divide it by the increase in population during the same period. This will lead us to the growth rate, i.e. the annual percentage increase in GDP per capita.

If we take this approach on the basis of the official statistics, we find that GDP in constant (1966) prices grew by 56% from 1970 to 1980. In the same period the population increased by 38%, which brings us to an annual growth rate per capita of 1.2%. For a poor country, an increase in per capita output of a little more than 1% is not much.

There are many complications with this calculation. A large part of GDP consists of agricultural production which is notoriously difficult to assess, particularly when it comes to subsistence production, i.e. output consumed by the producers and not marketed (or marketed outside the official channels). According to official statistics, subsistence production constituted as much as 40% of total GDP in 1980 against 29% in 1970. This estimated increase is, therefore, a significant part of the growth rate mentioned.

Prices went up rapidly during the 1970s. The official consumer price indices show that prices in 1980 were on average 4–5 times as high as in 1970. This indicates that Tanzania moved over the decade from annual price increases of less than 10% to an inflation rate of 30%. If all goods and services included in domestic production, i.e. not only consumer goods, are taken into account, prices were on average multiplied by 2.8 from 1970 to 1980.

Tanzania has for some years controlled a number of prices, and it is these controlled prices which are used in the price indices. However, in the 1980s a large part of economic transactions is taking place outside the official sector at much higher prices. So the rate of inflation is understated. At the same time, it must be noted that these "informal" activities are not included in the production statistics. Their magnitude is difficult to assess, as is their importance for the various social groups, but they are on the whole more important to agricultural producers than to urban wage-earners.

These phenomena – a fairly high rate of inflation and the emergence of parallel markets, combined with the payment of bribes and other forms of corruption – are obviously signs of an internal imbalance in the economy which did not exist at the beginning of the 1970s. Important underlying factors are the changes in the macroeconomic role of the government over the decade.

### *The macroeconomic policies of the government*

At the beginning of the 1970s the budgetary policy was fairly conservative. There was generally a surplus of up to 10% on the recurrent budget. Ten years later this recurrent surplus had changed into a deficit of approximately 10% (in 1980 it was actually 20%). If we look at total expenditures, i.e. recurrent plus development expenditure, in 1971 there was an overall



budgetary deficit of 12.6% of monetary GDP, and this had gone up to 21% by 1980–82.

The deficit was financed in three major ways: by foreign financing, by domestic bank borrowing and by domestic non-bank borrowing (state bonds etc.). During the 1970s the role of foreign financing became increasingly important. External loans and grants constituted 33% of development expenditures in 1971; in 1981 their share had risen to 57% (or from 13% to 19% of total expenditure).

The government's bank borrowing also became more important in covering its overall deficit: this source, i.e. the increase in money supply, in 1971 financed 38% of the overall deficit as against an average of 64% in fiscal years 1981–83 (or from 11% to 21% of total government expenditures).

Already at the beginning of the 1970s Tanzania had a fairly high level of taxation, considering its low level of average incomes. Compared to GDP total government revenues went up from approximately 18% in 1970 to 20–21% at the beginning of the 1980s. However, this modest increase was due to the estimated high growth in subsistence production, which went up from 41% of monetary GDP in 1970 to 68% in 1980. Government revenues compared with monetary GDP alone went up from 28% in 1971 to approximately 40% in the first years of the 1980s.

Government thus took a larger share of income. This is also true if one allows for unrecorded informal incomes. But the expansion in expenditure was even larger, as shown by the increase in the overall deficit.

Access to bank finance, therefore, became much more important for the government budget through the decade. An additional upward pressure on the money supply came from current loans (overdrafts) of the growing number of public corporations (parastatals) in production and distribution in order to cover their deficits.

The fiscal deficits were combined with a major increase in government expenditures in relation to GDP. Recurrent expenditures went up from 16% in 1971 to approximately 25% of GDP in the beginning of the 1980s, and if development expenditures are included the share went up from 27% to approximately 35% (or from 42% to approximately 70% of monetary GDP).

### *Macroeconomic imbalances*

The combination of a number of internal and external factors influencing the economic development of Tanzania in the 1970s evidently produced a number of serious macroeconomic imbalances. At the beginning of the 1980s there were squeezes everywhere: imports were cut, the government ran large deficits which were financed by an increase in money supply, the

rate of inflation was high, the utilisation of newly created capacity in industry was low, agricultural exports had declined.

These various imbalances were closely linked with serious structural problems in the economy. In 1980 agricultural production outside the subsistence sectors was officially estimated to be 46% higher than in 1970, or only slightly more than the population increase. For manufacturing and handicrafts the increase was the same, but by 1981 and 1982 this production had fallen to a level 20% lower than in 1970. At the same time, public administration, also measured in constant prices as part of GDP, rose from 1970 to 1980 by 167% and in 1982 by 235%, meaning that its share of monetary GDP from 1970 to the beginning of the 1980s went up from 16% to 26–32%. These changes in actual output did not correspond to changes in capacities created in the various sectors.

In the next section the development of this crisis will be traced through the 1970s. Obviously these serious economic difficulties were not created from one day to the next.

## THE MAKING OF A CRISIS

### *The shocks of the late 1970s*

Looking back at the 1970s, it is striking that up to as late as 1979 there was no fundamental concern about overall economic developments in Tanzania. Few inside or outside the country seem to have realised the deeper problems behind the speed and pattern of development since the end of the 1960s, and fewer still expected the decline to follow after 1979.

Of course, the 1973/74 increase in oil and food prices and the high food imports as a consequence of drought had been a hard blow. Total import costs went up by approximately 10% because of the high oil prices, and food imports shot up from less than US \$ 5 m. in 1971–73 to US \$80 m. in 1979.

The government responded by drawing down foreign reserves and received external assistance as part of international efforts to soften the impact of the oil shock. Other favourable external factors helped Tanzania to master the situation without a drastic fall in consumption and without shaking belief in the development initiatives it was launching. Already in 1976 and 1977 Tanzania had a deficit on its current international payments which was a little lower than in 1970–73, measured as a percentage of gross domestic product.

An important part of the policy initiatives of these years was a new basic industries strategy begun in 1975. This strategy had a heavy impact on the allocation of investment resources to various sectors. The share of manufacturing in total investments went up from 10–15% to 35–40% from the beginning to the end of the decade. This industrialisation effort was strongly

supported by external donors, and meant that aid to agriculture went down from 40% to 10% and aid to industry up from 9% to 20% of total aid from 1975/76 to 1981/82<sup>5</sup>.

This industrial drive led to the creation of production capacities, the use of which were dependent on current imports of inputs and spares. And the country continued to create new externally-financed capacities, even when it was apparent that already installed capacities could not obtain the necessary current imports.

In the first half of the 1970s the country made great efforts to raise the capacity to satisfy basic needs for education, health and water, also with extensive external support. This created demands for higher recurrent expenditures in the following years, which became difficult to meet, because of the pressure from the industrial sector and general public administration.

The general mood in the mid-1970s – in Tanzania and elsewhere – combined a feeling of relief that the oil shock had been managed without a catastrophe with expectations for a recovery in the world economy. And the developing countries entertained strong hopes for a new international economic order which would work to their advantage.

In Tanzania the overall macroeconomic indicators (the growth rate for GDP, the financial position of the government and the balance of payments) did not give any alarming signals. And one international factor provided resources which strengthened the feeling that everything was proceeding more or less alright. This was the international boom in coffee and tea prices, due to frost in Brazil, which meant extremely good export earnings in 1976 and 1977. From 1975 to 1977 coffee prices tripled, and from 1975 to 1976 total exports increased by 41% (in current dollar values).

Because of internal pressures and international official advice, Tanzania's strict import policies were relaxed in 1978. Imports grew very quickly (by 54% from 1977 to 1978) and the foreign reserves went down from US \$ 300 m. at the beginning to US \$30 m. at the end of 1978. With hindsight it is not difficult to understand the unfortunate consequences of this mood of 1977–78. During 1978 came the costly effects of the dissolution of the East African Community, and towards the end of the year an expensive war following Idi Amin's attack on Tanzania. This war was given strong verbal support outside the country, but Tanzania had to finance it from its own resources. It has been estimated that the war cost a total of US \$500 m. It shook the government budget which went from a deficit of 10% of GDP in 1976/77 to a deficit of 20% in 1978/79.

To these external shocks, peculiar to Tanzania, were added other international changes. Oil prices went up again, and Tanzania's export prices fell rapidly as a result of the international recession and the end of the coffee boom. And the harvests were hit by drought in 1980–81.

The strain on imports thus became very heavy. While the volume of imports had been more or less constant during the first half of the 1970s, it fell by one third from 1978 to 1982. Since a great deal of total imports was aid-financed and tied to projects, and because of the increase in food imports, the fall in current imports for production and transport was, of course, much larger.

From 1979 onwards it became obvious that the costs of running development projects, whether in the productive or in the social sectors, had grown. The costs in terms of imports had increased, and the costs in terms of recurrent government expenditures to wages and maintenance had been underestimated. In this sense one may speak of overinvestment, showing itself in an imbalance between exports and imports and between development expenditures and recurrent expenditures.

### *The distorted structure of economic growth*

There were not only various external factors behind the strains on the balance of payments, but it also became evident that the growth structure was burdened with a fundamental distortion, which would unavoidably lead to an import squeeze.

Tanzania's main foreign-exchange earner has always been the export crops of an agriculture dominated by smallholders. Around 1980 it was painfully realised that agriculture had been neglected as a result of policies in other areas of the economy, and because of specific agricultural policies.

Agriculture had been exposed to many institutional changes: the government machinery was decentralised in 1972, changing the functions of agricultural extension officers; large parts of the rural population were moved to villages in one great sweep in 1973 and 1974; the co-operative unions, handling most of the marketing and processing of export crops, were dissolved in 1976 and replaced by inefficient parastatals. These changes had negative effects on production, even if the picture is not uniform for the various crops and areas of the country. At the same time, a large part of the limited public investments in agriculture went to high cost state farms, which also taxed the limited management capacity in agriculture.

A much discussed factor behind the fall in agricultural export production has been the agricultural price policy of the government. Since the mid-1970s there has been a fall in export crop prices in real terms, as well as relative to food prices. The full effect of this, as well as of increasing shortages of inputs and incentive goods, is discussed in Chapter 5 on agriculture.

### *Real incomes and their distribution between social groups*

It may be said that this fall in producer prices is solely a reflection of the

general downward trend in incomes. It has also been argued that smallholders lost less in average real income during the 1970s than non-agricultural wage-earners, i.e. that the incomes policy of the government, in its effects on these two groups, favoured smallholders. The available statistics show that the gap between non-agricultural wages and average smallholder incomes widened up to the mid-1970s, when non-agricultural wages were three times the average smallholder income. After that the gap narrowed to 1.4 times smallholder income in 1980<sup>6</sup>.

On the same evidence real non-agricultural wages fell by almost 50% from 1970 to 1980, while smallholder incomes went up by 8%. The latter figure, however, includes a very high increase in subsistence production, and when this is corrected it is more plausible that smallholder incomes fell by approximately 10% over the decade. That is still less than the fall in real wages.

Even allowing for the many uncertainties in these statistics, it is possible to state that there has been no urban bias in incomes policy since the mid-1970s.

The problem is rather the sectoral employment expansion policy pursued by the government. From 1969 to 1979 the number of smallholders is estimated to have grown by close to 30%, while non-agricultural employment has increased by over 80%. Manufacturing and community services have had the highest rates of employment expansion – increases of respectively 86% and 75% from 1974 to 1982, while total non-agricultural wage employment grew by 50% in this period.

It is this mix of employment expansion, i.e. the absorption of human resources into the various parts of the public sector, and an incomes policy, expressed by real producers' prices and wages, which was an important part of developments through the 1970s. In fact, one can say that the increase in non-agricultural employment was made possible by a large fall in real wages.

The behaviour of the average real incomes of various social groups during the 1970s was a result of the emerging economic difficulties and the sum of policies pursued. Large resources were allocated to non-agricultural activities, and this allocation led to structural imbalances in the economy, which were strongly augmented by various negative external factors towards the end of the decade. By the time it was realised that agricultural development should have been given higher priority in order to create the foundation for a more balanced overall economic and social development, the economy, and its employment and capacity structure, had fallen into a trap, thus making quick adjustments extremely difficult.

This trap was first of all due to the acute shortage of foreign exchange because of a fundamental disequilibrium between exports and imports, and this could only be repaired by the availability of foreign exchange to

increase production in agriculture and industry. Agriculture needed foreign exchange for inputs (fertilisers, insecticides etc.), the provision of which had fallen over the decade, and industry needed foreign exchange partly to produce consumer goods for agricultural producers in order to stimulate their production efforts, and partly to increase industrial exports.

As explained above, the amount of foreign exchange not tied to other purposes was very limited. This was the basic element of the crisis which was appearing towards the end of the decade. To this should be added the fact that all social groups, in particular the non-agricultural wage-earners, had experienced large falls in their living standards. While, under Tanzania's political circumstances, this had not endangered the political stability of the country, the maintenance of this stability made policies which built on further cuts very doubtful. As stated by many officials, the creation of the structural disproportions had taken many years, and, therefore, it would also take years to correct these disproportions.

### Foreign *aid*

One very large external factor in the macroeconomic development of Tanzania has not yet been accounted for. There were special large negative external impacts on Tanzania during the 1970s, but at the same time it should be noted that the country received a growing amount of official development assistance from abroad. During the decade Tanzania emerged as one of the largest aid recipient,.

According to OECD statistics the country received an average of US \$ 50–60 m. in official development assistance in 1970–72. This went up to US \$340 m. in 1977, US \$424 m. in 1978 and US \$588 m. in 1979 to reach an average of approximately US \$670 m. in 1980–81. A rough correction for the increase in import prices during the 1970s shows that the real value of this assistance was quintupled from 1970 to 1980.

This increasing role of official development assistance can be shown in other ways. While in 1970–73 it was at the level of approximately 15% of total imports, it rose, as already mentioned, to more than half in 1980. Loans and grants constituted one third of the government's development expenditure in 1971, but more than half in 1979–81.

During the second half of the decade the direction of this assistance shifted from agriculture to other sectors, in particular to industry. It must be acknowledged that the high aid figures gave the donors an increasing share in the responsibility for setting development priorities and for assessing their macroeconomic viability. Up to 1980 external aid came almost exclusively in the form of project-tied funds for purposes which had been agreed between the various agencies and Tanzania. While many donors prefer to

stress that aid transfers were based on requests from the Tanzanian government, a very large part of the project studies were undertaken on the initiative of the donors, if not directly by them, as in the case of the World Bank<sup>7</sup>.

In this way the aid flows came to determine to a large extent the structural pattern of economic and social development. If it is accepted that this pattern was not optimal, it has to be admitted that the high volume of aid was a mixed blessing. To put it more bluntly: a lower level of aid allocated in a better manner would have been more useful. It cannot be argued that Tanzania should have done better *because* of all the assistance it received. The assistance was a part of the making of the crisis.

## POLICY ISSUES AND RESPONSES 1981–85

### *Full-scale economic crises and the search for remedies*

The economic distress which became apparent in 1979 and 1980 turned into a further downhill movement in 1981–84. All the macroeconomic indicators gave strong signals of economic crisis. The rate of growth in GDP turned negative, and for the agricultural and industrial sectors the fall was very great.

Import volumes were cut further, as the terms of trade deteriorated, and exports failed to grow, while external aid was reduced in real value. The government budget was in permanent deficit, leading, with other forms of credit expansion (to the parastatal sector) to an increase in the money supply of approximately 20% per year. The official rate of inflation was high, but not escalating.

It was possible, at least initially, to interpret these pressures as passing, and to expect export prices to return to their earlier level. One could – and some did – argue that an increase in non-traditional exports was feasible. And the shift in the high level of foreign aid away from new projects could be seen as a remedy, allowing for higher current imports to increase production in agriculture and industry. However, it soon became evident that the problems went much deeper. The basic imbalances in the economy, i.e. the low level of exports and the public sector deficits, were persistent.

Economic policies had to address the combination of structural problems and the effects of worsening terms of trade. This required a shift in resources to agriculture in order to ensure a higher production for export. The direction of adjustment was not difficult to define, but the basic problem was that there were no available resources in the economy to shift to agriculture. The basic constraint was, of course, the acute shortage of foreign exchange needed to ensure the necessary supplies of inputs to

agriculture and to the processing and transportation of agricultural output, together with the provision of consumer goods to stimulate rural producers to produce more.

Thus the adjustment process was bound to take time. It is important to emphasise that this is not only a consequence of "technical" factors (the time required to devise the appropriate programmes and to implement them, given the delays in agricultural response), but that the necessary structural adjustment also had crucial sociopolitical dimensions. A shift of resources in favour of agricultural producers was going to be difficult in a situation where all incomes, including urban wages, had been seriously reduced over the years, especially after 1979.

In 1980–84 it was very common to come across views among international organisations and national aid agencies that the Tanzanian authorities were too slow in responding to the crisis, that the political leadership did not understand the seriousness of the situation, and was stubbornly continuing its old policies. These views were nurtured by the strained relations between Tanzania and the IMF, but they were also supported by on-going aid negotiations, in which Tanzania continued to press for new projects and to implement prestige projects like the new capital in Dodoma and the international airport in Dar es Salaam.

The role of the IMF in such a situation is not unusual. Among other international organisations, the Fund is expected to assist countries which have difficulties with their balances of payments. Even if its assistance is limited and short-term in nature, it is a condition for the release of structural loans from the World Bank. And for many bilateral aid agencies with little experience in macroeconomic matters the IMF was seen as "the expert", guiding everyone in these matters and thus influencing bilateral flows.

It came to an open clash between Tanzania and the IMF when President Nyerere at the beginning of 1981 attacked the Fund for trying to become "the International Ministry of Finance", interfering with the development strategies of the developing countries. For more than a year there was little contact between the two.

Meanwhile, Tanzania and the World Bank tried a new approach to the formulation of policy changes. A Tanzania Advisory Group was set up, consisting of three independent persons (Ambassador, and former Head of the Swedish International Development Agency, Ernst Michanek (chairman) and the two Canadian professors, G.K. Helleiner and Cranford Pratt) and it produced an analysis of the problems and a set of proposals. On the basis of this report the government presented a comprehensive structural adjustment programme (SAP) in June 1982. The macroeconomic part of SAP was based on the assumption of additional inflows of foreign finance from the IMF and the Bank, which, together with funds from bilateral donors, should finance the revival of the economy. At the same time, SAP



contained a long list of intended policy changes in macroeconomic and sectoral terms<sup>8</sup>.

Then, during the second half of 1982 Tanzania entered into new discussions with the IMF. But the distance between the two was wide, not with regard to the issues to be addressed, but to the speed, magnitude and nature of the policy initiatives.

Parallel with these discussions the government went on to prepare the main lines of a new agricultural policy (published in 1983), and took steps to formulate what should be done with the large parastatal sector, which was running at low capacity and at high costs for the economy. A decision to reintroduce co-operative unions to handle the marketing of crops was also taken.

### *The 1984 reform package*

The major measures to implement these policy changes were announced in June, 1984, when the new budget was combined with a package of policy measures. In comparison, the 1985<sup>186</sup> budget was considered by many international observers to be lacking in initiative, which was explained by the fact that the country was approaching elections in October 1985 with a change of President and government<sup>9</sup>.

There may be some truth in this, and the government has on at least one earlier occasion taken supplementary budgetary steps in the middle of the financial year. On the other hand, there was little in the economic situation which gave room for additional changes. The export performance was clearly disappointing, and the price effects of devaluation, new taxes and the removal of subsidies had been quite high. The boost in consumer supplies because of the liberalisation of imports had been politically favourable, even if prices were very high, though falling with increased supplies, but it was not clear whether this was a once-for-all phenomenon or would continue as an important supply source.

The discussions with the IMF and the decisions of June, 1984 have shown that Tanzania is trying to cope with the basic macroeconomic issues of the exchange rate, the agricultural producer prices, the deficits in the government budget, the increase in the money supply, and the allocation of foreign exchange. However, despite the many pressures from outside and from the deepening crisis, it is also obvious that Tanzania wants to deal with many of these issues in its own way. The political leadership clearly wishes to defend its development priorities and the basic features of the economic system which has emerged during the 1970s. At the same time, the harsh experiences and the bad times have led it to introduce important modifications in this strategy.

These two aspects of the policy scene may be illustrated by looking at the

three main parts of the June, 1984 package: a budget with important expenditure and revenue changes, a set of new prices for agricultural producers, and a large change in the exchange rate.

Let us begin with the exchange rate. Over the past few years it has changed in the following manner: devaluations of 10% and 20% in 1982 and 1983 led to a rate of 12.2 Tsh per US \$. This rate was changed to 17 Tsh per US \$ in June 1984, a reduction of 40% in the value of the shilling. This devaluation was meant to allow the parastatals, which buy crops for export, to pay higher prices to the producers. At the same time, a higher exchange rate means higher prices for imported goods.

It is obvious that the exchange rate is an important "macroprice", as it determines the price relation between goods which enter or may enter into foreign trade and other non-traded goods. This is important for exporters, but also for importers, e.g. by influencing the price of imported machinery compared with the price of labour.

An increase in the exchange rate, raising export producer prices, will not raise foreign-exchange earnings immediately, however. Supply, especially from agriculture, takes time to respond to higher prices. And with extreme shortages of inputs and consumer goods, price increases alone may not lead to higher exports. If measures to ensure the provision of these requirements are not taken, higher producer prices will only increase the monetary income of producers and not their output. If this happens, the result will be additional inflation, fed also by higher prices for imported goods.

This is the core of Tanzania's argument against the IMF's advocacy of a very large "shock" devaluation. The political leadership has also been duly concerned about the effects on living standards outside agriculture, as a decision to devalue would increase official prices. The aim has, therefore, been to accompany changes in the exchange rate with additional foreign exchange to cushion the impact by better supplies of producer and consumer goods in order to increase output and maintain stability.

The 1984 devaluation was quite large, even if the Tanzanian shilling is still overvalued compared with 1978 owing to the rate of inflation. In my view Tanzania should have begun this adjustment of the exchange rate in a pragmatic manner somewhat earlier. At the same time, it must be said that the IMF has been very stubborn and has made a large devaluation the symbol of the acceptance of conditions for additional assistance. In this context it is interesting to note that the IMF's managing director conceded during the summer of 1985 that the instrument of devaluation might not work in the usual way under African circumstances.

In June, 1984 agricultural producer prices were raised by 46–55% in nominal terms, thus continuing the recent policy of raising these prices in real terms, i.e. accounting for internal inflation, by 5% on average. To raise these prices in circumstances of falling international prices was a difficult

matter. For the reasons given above, Tanzania resisted the IMF condition of *very high* increases in producer prices.

The budget presented in June, 1984 introduced new measures to contain the deficit at the same nominal level as in 1983<sup>184</sup>, although the government found it necessary to increase wages and salaries by an average of 30% for the first time since 1981. This did not compensate, of course, for four years' annual inflation of 30%, and it did not compensate for the price effects of the new currency devaluation, the removal of the subsidy on maize flour, and the increase in certain taxes.

To abolish maize subsidies was a difficult measure, even if it was helped by the fact that a very large part of maize supplies were handled outside the official channels. Furthermore, the budget announced that urban and district councils would take over a number of public services (education, health, small roads etc.) on the basis of a reduced subvention from central government and the introduction of a new local tax, a so-called development levy raised at a flat rate on all able-bodied men and women (at rates differentiating among the various localities). Without this regressive tax measure the budget deficit would have been 33% larger. The removal of support from a number of deficit parastatals, plus the end of the maize subsidy, was also large in expenditure terms; without these two steps the deficit would have been approximately 50% higher. Despite all these measures, the increase in the money supply budgeted for 1984<sup>185</sup> was at level of 21%, or larger than in the preceeding two years (around 17%).

It is difficult to assess the shift in resources to agriculture among the recurrent and development expenditures of the budget. In my interpretation this shift has been very limited because of the pressure from other major spenders, including defence, which showed the highest rate of increase. And it should be remembered that a large part of agricultural development expenditure was intended for a small number of state projects. The major tools for shifting resources to smallholders remain the producer prices and credit schemes, not the government budget.

The allocation of foreign exchange to agriculture was reinforced by allowing certain large-scale producers to retain a part of their foreign-exchange earnings for the purchase of inputs and spares.

Finally, some imports were liberalised, as Tanzanians with foreign exchange were allowed to import certain goods to be sold on the open market.

### *The situation in 1985*

When the government assessed the results of these policy measures in June, 1985, the picture was rather mixed, but there were no signs that the 1984 decisions had rocked the boat<sup>10</sup>. The economic situation in 1984 as compared with 1983 was considered to be slightly improved. For the first time

for several years the gross domestic product showed a positive growth of 2.5%, combining a growth in agriculture of the same magnitude with a continued fall in industrial output of 13% (as against a decrease of 9% in 1983). It was also noted that the growth in public administration (including a number of social services) had fallen to 6.5% as compared with 10% in the preceding year.

In 1984/85 the harvests were good because of the weather conditions. The output of a number of export crops went up, and the food deficit was reduced so that food imports fell from 326,000t in 1983/84 to approximately 180,000t in 1984/85 (with an expected further fall in 1985/86).

However, exports continued to fall from US \$412 m. in 1983 to US \$402 m. in 1984. On the other hand, imports went markedly up from US \$881 m. in 1983 to US \$ 980 m. in 1984. According to the Minister for Economic Affairs, this was mainly due to the liberalisation of imports.

The official rate of inflation went up from 27% in 1983 to 38% in 1984.

In 1985, the government could note that the overall performance of the 1984/85 budget had been good. The deficit was 20% lower than budgeted and lower than the actual deficit in 1983/84, and the increase in the money supply had been reduced. This reduction in the budget deficit was caused by an increase in revenues, partly due to the increase in imports.

As to central government expenditures in 1984/85 the local councils had not managed to collect the budgeted sum in development levies; they therefore had to be supported by central government beyond the budgeted subvention. The introduction of the other major institutional change, the return of the co-operative unions, was slow. This also entailed a financial loss. But taking the parastatals together, the government managed to make savings through the dissolution of some parastatals and the amalgamation of others.

While it was officially announced that the 1985/86 budget would have a similar thrust to the preceding "reform budget", it was also stated that the government intended to lay off 27,000 from the civil service. On the other hand, there was no announcement of increases in producer prices or of a change in the exchange rate in June, 1985. Through a combination of higher taxes and increases in expenditures (in nominal terms, but below the official rate of inflation), the government aimed at the same nominal deficit in 1985/86 as in the two preceding years.

It was announced that the support for local councils would go up and be based on subsidy rates for certain public services, and not given as lump sums to cover the councils' deficits. Furthermore, new measures were announced to stimulate exports through the retention by exporters of foreign-exchange earnings.

The absence of a change in the exchange rate (which, because of inflation, meant a real appreciation of the shilling) could also be due to the

unconcluded discussions with the IMF, as an agreement with the Fund will certainly include a further devaluation. The exchange-rate situation should also be seen in light of the liberalisation of certain imports and the various retention schemes which have taken certain foreign exchange flows out of the official exchange-rate system.

The effects on total imports of the 1984/85 liberalisation measures have been very striking. Of course, it is not clear whether this is a once-for-all bonus, using up a stock of foreign exchange hidden in the economy, or if it is a permanent contribution to supplies. But at least it demonstrates a stake in the economy among those holding the foreign exchange.

## CONCLUSION

The decisions taken in June 1984 must be described as tough and risky. They came two years after the Structural Adjustment Programme (SAP), but unlike SAP they did not rest on the assumption of additional inflows of foreign exchange. They were based on a number of institutional assumptions, e.g. the introduction of the co-operative unions meant to reduce the budgetary losses in the marketing and processing of crops, and the increased role given to the local councils and their taxation efforts.

In 1985, it became apparent that these changes were difficult to implement. And the fundamental condition for adjustment, i.e. an additional supply of foreign exchange, had not been met. Exports continued to fall, and the accumulation of large and expensive short term debts became a very serious burden straining the relations between Tanzania and public and private creditors. Credits had been a way of maintaining a minimum level of supplies, but this "remedy" had now been used to the full, and there were signs that the country was being forced to mortgage future export sales in order to avoid a breakdown of transportation services.

Many of the 1984 measures taxed the nation's ability to maintain the social and political fabric under the heavy pressures. While some of the measures, e.g. in the 1984/85 budget, are regressive in economic terms (local taxes etc.), they must be seen as adjustments to hard realities. They do not necessarily change the basic social development priorities which put Tanzania in a special class compared with most African countries. If Tanzania is blamed for having taken too many and too rapid steps forward, trying to run while others walk, it should be accepted that a few steps backwards are required. To change a famous dictum: it may not be a matter of two steps forward and one step back, but rather four steps forward and two or three back.

The impressive political stability so far has partly been due to this cautious adjustment of a basically progressive policy. But the explanation

must also be sought in the political system which has been created, and the great care which has been shown in managing an adjustment in the role of the military forces after a demanding war.

The main economic constraint remains the scarcity of foreign exchange. And this constraint has become more serious than ever.

The creation of macroeconomic imbalances as a result of major disproportions in the economic development, combined with unfavourable external conditions, has produced an extremely difficult situation. Without assistance, especially from the Nordic countries, which have actively participated in the development efforts for 15 or more years, it will hardly be possible to prevent the severe crisis from becoming permanent.

## NOTES

1. For a discussion of the major issues in the IMF–Tanzania dispute. van Arkadie. Brian. "the IMF Prescription for Structural Adjustment in Tanzania: A Comment", in Karel Jansen (ed.), *Monetarism, Economic Crisis and the Third World*, London, 1983.

2. The author was professor of economics at the University of Dar es Salaam 1964–68 and personal assistant to President Nyerere 1970–72.

3. These issues are analysed in two articles: Green, Reginald H., "No Worst there is None? Tanzanian Political Economic Crisis 1978–?", in Carlsson J. (ed.), *Recession in Africa. Background Papers to a Seminar*, Uppsala, 1983. Sharpley Jennifer, "External versus Internal Factors in Tanzania's Macroeconomic Crisis: 1973–1983". *Eastern Africa Economic Review*. New Series, 1 (December 1985).

4. The statistical information in this chapter is compiled from official sources (*Economic Survey* (Annual), Bank of Tanzania, Budget Speeches), and from IMF, *International Financial Statistics*. My own *Report to the Swedish International Development Agency on Tanzania's Recent Macroeconomic Policies*, Stockholm, 1984 has also been used as a secondary source.

5. These issues are discussed in Lele, Uma, "Tanzania: Phoenix or Icarus?". in Arnold C. Harberger (ed.), *World Economic Growth*, San Francisco, 1984.

6. For a discussion of these issues see Ellis, Frank, "Relative Agricultural Prices and the Urban Bias Model: A Comparative Analysis of Tanzania and Fiji". *Journal of Development Studies*, 2:3 (April 1984).

7. Cheryl Payer, "Tanzania and the World Bank", *Third World Quarterly*, 4 (1983).

8. The United Republic of Tanzania, *Structural Adjustment Programme for Tanzania*. Dar es Salaam. 1982.

9. For the debate in Tanzania on these issues before and after the 1984/85 Budget see two sets of papers from workshops in February, 1984 and April, 1985 organised by the Economics Department and the Economic Research Bureau, University of Dar es Salaam. The first set is published under the title *Economic Stabilization Policies in Tanzania*. Dar es Salaam, 1984. For a detailed analysis of the 1984/85 Budget see my report to SIDA, *op.cit.*

10. *Budget speeches*. Dar es Salaam, June 1985.

# 4. Growth and Crisis in the Manufacturing Sector

*Rune Skarstein*

In this chapter I shall first describe and discuss industrial development in Tanzania from independence in 1961 up to the early 1970s. An important aspect of the latter half of that period was the formation of manufacturing parastatals, and this is discussed in the next section. I then deal with the period from the early 1970s to the early 1980s, trying to depict the main features of the crisis which developed within the manufacturing sector in that period. Finally, I shall try to show that a major cause of the industrial crisis was a stagnating and even declining agricultural surplus since the early 1970s.

## THE LEVEL OF INDUSTRIAL DEVELOPMENT AT INDEPENDENCE

When Tanzania became independent in 1961, the level of industrial development was very low and the structure of industry was quite rudimentary. There were only about 380 manufacturing establishments with 10 or more employees, employing a total of about 22,000 persons and contributing about 3.5% to the gross domestic product (GDP).<sup>1</sup> Domestic production accounted for only 32 % of the total supply of manufactured goods, the share in total supply being highest for consumer goods, i.e. 45 %, but only 16.8 % and 16.3 % for intermediate goods and capital goods respectively (cf. Table 4.1). Moreover, a substantial number of manufacturing units at independence did not cater for the domestic market, but were processing raw materials for exports, such as food products, tobacco, sisal decortication and cotton **ginning**.<sup>2</sup>

J. Rweyemamu explained this low level of industrial development mainly by three factors. First, in East Africa, Kenya had become the white settler colony *par excellence*. As a consequence, the economic infrastructure in Kenya was far better developed than in the neighbouring countries. Tanzania, on the other hand, was "merely a conquered territory with less value to Britain during this period [1918–1939], since her economy had been partly moulded to suit the needs of the German market".<sup>3</sup> For Great Britain there was also an "uncertainty of the status of the country", especially after

Germany's threat to reconquer its lost colonies. On the other hand, "the British settlers in Kenya were a well-established pressure group in London while Tanzania's settlers were of mixed nationalities, without a cohesive force".<sup>4</sup> These factors combined caused foreign investments to flow to Kenya rather than to Tanzania. In 1962, the book value of British direct investments in Kenya was six times higher than in Tanzania, i.e. £47 m. and £7.7 m. respectively.<sup>5</sup>

As a second factor causing Tanzania's low industrial development at independence, Rweyemamu pointed to the common external tariff policy of the East African countries (Kenya, Uganda, Tanzania), which gave "full play" to "the centripetal pressures converging on Kenya", with the result that "industries tended to be established in Kenya".<sup>6</sup>

As a third factor, interrelated with the two already mentioned, Rweyemamu noted that, in contrast to Kenya, Tanzania lacked an indigenous capitalist class which could engage in industrial development. The three factors combined led Rweyemamu to conclude that Kenya became a "periphery-centre" in East Africa during colonial times, hampering the industrial development of the neighbouring countries.'

## INDUSTRIAL GROWTH 1961-73

In the first decade after independence, Tanzania experienced a quite remarkable rate of growth in manufacturing output. From a modest Tsh 283 m. at constant (1966) prices in 1961, total manufacturing value added increased to Tsh 888 m. in 1973. In the period 1961 to 1973, the annual trend rate of growth of total manufacturing value added exceeded 10 %. Of course, this growth rate should be seen in the light of the low level of industrial development in 1961. However, even when this is taken into account, it may be claimed that industrial growth in Tanzania was quite considerable in the period 1961 to 1973. This is well indicated by the increase of manufacturing value added as a share of total GDP from 3.6 % in 1961 to 10.1 % in 1973.<sup>8</sup>

Associated with the high rate of growth of manufacturing output, there was a gradual change of the structure of production. The share of consumer goods in total manufacturing value added was reduced from 74 % in 1961 to 64 % in 1972, whereas, in the same period, intermediate and capital goods increased their shares from 23 % to 30 % and from 3 % to 6 % respectively.<sup>9</sup> There can also be little doubt that a process of considerable *import substitution* in manufacturing industry took place in the period 1961 to 1973. For manufacturing as a whole, the share of domestic production in total supply increased from 32.3 % in 1961 to 45.4 % in 1973. All the three major subsectors of manufacturing experienced increases of the domestic produc-



Table 4.1. *Shares of domestic production in total supply of manufactured goods (percentages)*<sup>10</sup>

	1961	1971	1973
<b>Total manufacturing</b>	<b>32.3</b>	<b>39.6</b>	<b>45.4</b>
<b>Consumer goods</b>	<b>45.0</b>	<b>71.0</b>	<b>69.5</b>
<b>Intermediate goods</b>	<b>16.8</b>	<b>26.0</b>	<b>35.3</b>
<b>Capital goods</b>	<b>16.3</b>	<b>14.1</b>	<b>20.1</b>

tion share in that period; consumer goods from 45 % to 69.5 %, and intermediate goods from 16.8 % to 35.3 %, whereas capital goods increased only slightly from 16.3 % to 20.1 % (cf. Table 4.1). Thus, available data indicate that import substitution took place first of all in the subsectors producing consumer goods and intermediate goods, whereas the development of the capital goods sector was quite modest.

Among the industries performing quite well in terms of import substitution in the 1960s were textiles, beer, cement, cigarettes and soap. The value of imports of each of these items at current prices was lower in 1967 than it had been in 1960. It is also worth noting that the value of imported consumer goods at current prices increased by an average annual growth of only 1.7 % between 1962 and 1967, whereas total imports increased by 8.7 % in the same period." This is a further indication that the manufacture of consumer goods was the leading sector of import substitution in the 1960s.

With respect to employment and productivity, there are data which permit comparisons over time only for manufacturing establishments with 10 or more employees. These figures show a quite steady and strong increase in value added between 1965 and 1973. The trend rate of growth in this period was 13.3 % per year, and in 1973 manufacturing value added was 2.8 times higher than in 1965. Value added per employee also increased in this period, by an annual trend rate of 2.1 %, to become 15 % higher in 1973 than in 1965.<sup>12</sup>

On the whole, it may be concluded that industrial growth in Tanzania was quite impressive in the period 1961 to 1973. The same applies even more to the period up to 1967, when manufacturing value added increased by an average rate of 12.4 % per year, which was far more than double the rate of growth of total GDP. Hence, the share of manufacturing value added in total GDP more than doubled from only 3.6 % in 1961 to 8.4 % in 1967, to reach a historical peak of 10.1 % in 1973 (Cf. Table 4.4).

The available data also indicate that industrial growth in the period 1961 to 1973 implied an efficient use of resources. There is no sectoral break-

Table 4.2. *Financing of the development budget of the Tanzanian government 1962/63 to 1968/69 (percentages)*<sup>16</sup>

	1962/63	1964/65	1966/67	1968/69
External financing (loans and grants)	92.0	38.5	43.2	26.7
Internal financing (contribution from recurrent revenues, borrowing, etc.)	8.0	61.5	56.8	73.3
Total	100.0	100.0	100.0	100.0

down of fixed capital formation (FCF) before 1966. However, we may assume that the share of manufacturing FCF in total FCF increased between 1961 and 1966. On the other hand, from 1966 to 1973 this ratio did not increase, but rather declined slightly towards the end of the period. For the whole period 1966 to 1973, the share of manufacturing FCF in total FCF was 13.7 %.<sup>13</sup>

For the period 1968–1971 the incremental capital-output ratio in manufacturing industry was quite stable and lower than 4.0 (cf. Table 4.7). This meant that for every Tsh 4 m. invested in manufacturing industry, value added increased by more than Tsh 1 m. (at constant prices), which is a good performance. It should also be noted that, up to 1973, the effectiveness of investment in manufacturing compared quite well with the remaining part of the monetary economy.<sup>14</sup>

Finally, it should be noted that, at the same time as there was a rapid industrial growth in the 1960s, Tanzania's dependence on foreign funds for development purposes apparently declined. In 1962/63, external funds financed 92% of the government development budget; by 1968/69, the share of external funds in the development budget declined to less than 27 % (cf. Table 4.2). For the whole period 1962/63 to 1968/69, external funds financed 36 % of the government development budget.<sup>15</sup>

On the other hand, in the period 1970/71 to 1974/75 external financing accounted for 39.8 % of the development budget, to reach as much as 45.6 % in the period 1975/76 to 1979/80.<sup>17</sup> By any criterion used, it seems justified to say that *Tanzania became increasingly more self-reliant in the 1960s, whereas this process – as will also be indicated below – was reversed again in the 1970s.*<sup>18</sup>

Against this background it seems justified to conclude that there were no *economic imperatives* which required the extensive nationalisations of manufacturing industry following the Arusha Declaration of February 1967. Certainly, to such a conclusion we have to add the important qualification that, according to President Nyerere, economic development in Tan-

zania up to 1967 had resulted in "an increase in the amount of economic inequality between citizens, and this was leading towards attitudes of social inequality. (. . .) The country was beginning to develop an economic and social elite whose prime concern was profit for themselves and their families, and not the needs of the majority for better basic living standards. We were beginning to see the development of a true class system".<sup>19</sup>

On the other hand, Cranford Pratt contends that in Tanzania in 1967 "there were no substantial political or class demands for socialist initiatives".<sup>20</sup> According to Pratt, the Arusha Declaration and the consequent political and economic measures first and foremost reflected the political beliefs and attitudes of President Nyerere, and were made possible by his unique authority as a political leader:

Without Nyerere, Tanzanian socialism would have been most unlikely to become a major force in these years. As well, without his leadership, the strategy which was followed in the pursuit of socialism, at least as that strategy was initially defined, would also have been much different."

By contrast, Professor Issa Shivji argues that the nationalisations following the Arusha Declaration "constituted the first open attempt on the part of the bureaucratic sector of the petty bourgeoisie to carve out an economic base for itself. (. . .) The Arusha Declaration was the most decisive turning point in the struggle between the petty bourgeoisie and the commercial bourgeoisie, leading to the latter's disintegration . . ."<sup>22</sup>

## RAPID EXPANSION OF THE PARASTATAL SECTOR, 1967-75

Whatever the true reasons for the nationalisations were, they implied, as Nyerere has stated, that, "the Government [through the National Development Corporation] took a controlling share in such major manufacturing industries as existed - which was a very short list . . ."<sup>23</sup> The list was short, simply because there were not many "major manufacturing industries", in general defined as rather large-scale industries, to nationalise.

However, as a result of the nationalisations of 1967, the assets of manufacturing parastatals increased at a stroke by Tsh 134 m., and the assets of manufacturing parastatals with government majority shares increased from only Tsh 21 m. in 1964 to Tsh 971 m. in 1971.<sup>24</sup> The increased government involvement in manufacturing industry also implied a heavy emphasis on investment in manufacturing parastatals, with the result that investment in this sector rose from 13 % of total manufacturing investment in 1966 to more than 63 % in 1970. In the four-year period 1966-69, manufacturing parastatals accounted for 26.5 % of total manufacturing investment, rising to 55.4 % in the next four-year period 1970-73 (cf. Table 4.3).

Table 4.3. *Fixed capital formation in manufacturing parastatals compared to total manufacturing industry at constant (1966-) prices.*<sup>25</sup>

	Total <b>manufac-</b> turing industry Tsh m.	Manufacturing parastatals Tsh m.	Parastatals as % of total
1966	153	20	13.1
1967	174	60	34.5
1968	206	44	21.4
1969	151	57	37.8
Total 1966-69	684	181	26.5
1970	281	179	63.7
1971	266	147	55.3
1972	184	91	49.5
1973	204	101	49.5
Total 1970-73	935	518	55.4
Percent change 1966/69-1970/73	36.7 %	186.2 %	

As a combined result of the nationalisations and the heavier emphasis on investment in the parastatal sector, value added in manufacturing parastatals increased from 8.9 % of total value added in manufacturing industry (establishments with 10 or more employees) in 1966 to 53.1 % in 1975.<sup>26</sup>

Employment in manufacturing parastatals tended to grow at a higher rate than value added in the period 1966 to 1973. As a consequence of these diverging growth trends, productivity of labour in terms of value added per worker declined. Value added per worker in the parastatal sector showed an annual trend rate of decline of 4.6 %, whereas there was an annual trend rate of growth of 4.1 % in the private sector (cf. Table 4.8).

M. Silver observes that in the period 1966 to 1972, the parastatal manufacturing sector was "characterised by an increasing unit wage bill stemming from decreasing labour productivity which has eroded the gains made by the success of the incomes policy, as indicated by the relatively stable average wage and salary levels over the period 1966 to 1972. (. . .) the increase in the unit wage bill for parastatal manufacturing establishments has not stemmed from relatively high increases in average wages and salaries, but falling productivity. The fall in labour productivity in turn

Table 4.4. *Trends in value added (VA) in manufacturing, 1973–83, at constant (1966–) prices. Tsh m.*<sup>32</sup>

Year	VA in total manufacturing	VA in total manufacturing as % share of monetary GDP	VA in total manufacturing as % share of total GDP
1973	888	14.0	10.1
1974	900	13.7	9.8
1975	903	13.1	9.5
1976	961	13.3	9.5
1977	1017	13.3	9.4
1978	1051	13.0	9.2
1979	1029	12.1	8.5
1980	893	10.2	7.1
1981	865	8.3	7.4
1982 <sup>a)</sup>	624	6.3	5.4
1983 <sup>a)</sup>	603	n.a.	5.2
Annual trend rates of growth <sup>b)</sup>			
1961–1973:	10.5 %		
1973–1983:	– 3.3 %		

<sup>a)</sup> Provisional figures.

<sup>b)</sup> Least squares regression of the formula  $Y_t = Y_0(1+r)^t$  on logarithmic form, where  $Y_t$  is VA in year  $t$ ,  $Y_0$  is a constant and  $r$  is the trend rate of growth.

arose not so much from an inability to increase production . . . but the correspondingly higher increase in the number of employees in manufacturing parastatals.”<sup>27</sup>

Now the fall in labour productivity and the rise in employment could be the result of a "substitution of labour for capital in existing firms and/or the newer firms being more labour intensive than older firms".<sup>28</sup> However, Silver argues that there is no empirical evidence giving support to such an explanation. He then arrives at the conclusion that:

What might have been the case is that for continuing parastatals overmanning was occurring after the Arusha declaration, that is the capital to labour ratio was falling not with labour being substituted for capital, but . . . labour being hired in addition to the optimal requirements dictated by the production function of the firm. The resulting fall in labour productivity, in this context, represents an unsatisfactory situation which can only lead to falling profits or rising prices.<sup>29</sup>

In a study covering the period 1970 to 1975, Kwan S. Kim arrived at a similar conclusion. Kim compared the performance of private and parastat-

Table 4.5. *Employment and productivity in manufacturing industry (establishments with 10 or more employees)"*

Year	Value added Tsh m. at constant (1966)prices	Number of employees '000	Value added per employee Tsh at constant (1966)prices
1973	644.4	63.4	10164
1974	702.4	70.0	10034
1975	667.1	73.3	9101
1976	794.6	78.1	10174
1977	860.7	84.2	10222
1978	823.7	96.4	8545
1979	929.9	105.8	8789
1980	782.3	102.3	7647
1981	639.3	108.4	5898
1982 <sup>a)</sup>	460.9	103.0	4475
Annual trend			
rates of			
growth <sup>b)</sup>			
1965–1973:	13.3 %	10.6 %	2.1 %
1973–1982:	–1.5 %	6.3 %	–7.3 %
Percent			
change,			
1965–1973:	+183.9	+146.7	+15.1
1973–1982:	–28.5	+62.5	–56.0

<sup>a)</sup> Provisional figures.

<sup>b)</sup> Least squares regression of the formula  $Y_t = Y_0(1+r)^t$  on logarithmic form, where  $Y_t$  is value added (or employment, or value added per employee) in year  $t$ ,  $Y_0$  is a constant, and  $r$  is the annual trend rate of growth.

al manufacturing establishments by estimating production functions for four industries based on data for 35 firms pooled over the five years 1970 to 1975. His two main findings were the following:

- (1) in contrast to private-enterprise firms, which showed operating surpluses, government-owned firms in the same industry generally incurred operating deficits during the period covered by the study; and (2) as compared with privately owned firms government enterprises as a whole characteristically had lower labour and capital productivities, *overemployment of labour* and lower managerial efficiency.<sup>30</sup>

Table 4.6. *Manufacturing fixed capital formation (FCF) and its share in total FCF, 1973–80.*<sup>35</sup>

Year	Manufacturing FCF at constant (1966) prices. Tsh m.	Manufacturing FCF as a proportion of total FCF	Manufacturing FCF as a proportion of total FCF: Averages
1973	204	11.9	(1966–1973): 13.7 %
1974	278	15.6	
1975	294	18.0	
1976	520	26.6	(1973–1980): 30.5 %
1977	803	37.2	
1978	783	36.8	
1979	966	36.9	
1980	782	33.8	
<b>Annual trend</b>			
rates of			
growth <sup>a)</sup>			
1966–1973:	4.5 %		
1973–1980:	25.4 %		

<sup>a)</sup> Least squares regression of the formula  $I_t = I_0(1+r)^t$  on logarithmic form, where  $I_t$  is manufacturing FCF in year  $t$ ,  $I_0$  is a constant and  $r$  is the annual trend rate of growth.

Kim emphasised that "the lower labour productivity in the public sector can be attributed to an overemployment of labour in that **sector**".<sup>31</sup>

With the above findings in mind, we shall suggest that the general tendency to **overemployment** in the manufacturing sector, that will be indicated in the next section, was to a large extent a result of overmanning in the parastatal sector.

## INDUSTRIAL DEVELOPMENT 1973–83

From 1973 onwards, total value added in the manufacturing sector stagnated and even declined. In the period 1973 to 1983, value added (VA) **declined** by a trend rate of 3.3 % per year, with the result that it was 32 % lower in 1983 than in 1973 (cf. Table 4.4).

However, employment continued to grow even faster than in the **pre-1973** period. Because of the diverging trends in the growth of value added and employment, the productivity of labour in terms of value added per employee in 10+ establishments declined by an annual trend rate of 7.3 % in the period 1973 to 1982, to become 56 % lower in 1982 than in 1973 (cf. Table 4.5).

Table 4.7. *Incremental capital-output ratios (ICOR) for manufacturing industry as a whole 1968–80.*<sup>36</sup>

Year	Manufacturing value added (VA) at 1966 prices Tsh m.	Incremental VA, 3-years moving averages Tsh m.	Manufacturing fixed capital formation (FCF) at 1966 prices Tsh m.	Manufacturing FCF, 3-year moving averages Tsh m.	ICOR <sup>a)</sup>
1966	525		153		
1967	572		174	178	
1968	611	49.0	206	177	3.6
1969	672	48.0	151	213	3.7
1970	716	57.7	281	233	3.7
1971	784	59.3	266	244	3.9
1972	850	57.3	184	218	4.3
1973	888	38.7	204	222	5.6
1974	900	17.7	278	259	12.5
1975	903	24.3	294	364	10.7
1976	961	39.0	520	539	9.3
1977	1017	49.3	803	702	10.9
1978	1051	22.7	783	851	30.9
1979	1029	-41.3	966	844	-20.6
1980	893	-62.0	782	—	-13.6
1981	865	—		—	—

<sup>a)</sup> 3-year moving averages of FCF divided by 3-year moving averages of incremental value added lagged by one year.

The figures in Table 4.5 indicate that there was hardly any linkage between the growth of manufacturing employment and the growth of production in the 1970s, especially in the second half of the decade. For example, in 1975 employment increased by 4.7 % although value added declined by 5 %; in 1978, employment increased by as much as 14.5 % although production declined by 4.3 %; and in 1981, employment increased by 6.0 % despite a dramatic fall in production of 18.3 %. For the whole period 1969–82 it can be shown that *employment increased largely independently of actual production*. Moreover, the growth of employment by far outstripped the growth of output, as can be seen from Table 4.5. The result of this development was, as already indicated, a grave downward trend of productivity of labour of about 6.9 % per year from 1969 to 1981, *independently of the growth of actual output*.<sup>34</sup>

By contrast, manufacturing investment was increasing by an annual trend rate of 25.4 % in the period 1973–80, compared to only 4.5 % in 1966–73. In the period 1973–80, manufacturing investment accounted for 30.5 % of total investment compared to only 13.7 % in 1966–73 (cf. Table 4.6).



We interpret these developments as follows. During the 1970s, investments in new and enlarged productive capacities occurred on increasingly higher levels, and more workers were employed to operate the additional capacities. *The growth of employment was, in other words, closely linked to the growth of productive capacities, while being largely independent of the growth of actual output.* On the other hand, the additional capacities were not adequately utilised, and production stagnated or even declined as shown in Table 4.5. These processes should result in a rapidly increasing incremental capital-output ratio (ICOR) and a declining rate of capacity utilisation.

Table 4.7 shows that the ICOR of manufacturing industry as a whole was quite stable at below 4.0 until 1971. Then it began rising and reached 12.5 in 1974. In 1975–76, there was a temporary improvement before the ICOR increased abruptly to 10.9 in 1977 and about 31 in 1978. At that point it turned negative, implying that there was a decrease in value added for each shilling invested in 1979, and an even larger decrease in 1980. Such an extremely adverse development of the ICOR could only be due to a dramatic fall in the rate of capacity utilisation.

From 1973 onwards, value added in the parastatal sector stagnated, while employment continued to grow at a trend rate of 7.3 % per year. This resulted in a trend rate of decline of value added per worker by as much as 6.2 % per year in the period 1973–81. Although there was a decline of value added per worker also in the private sector in this period, of 4.5 % per year, it was by no means as steep as in the parastatal sector. Indeed, in the parastatal sector, the annual average value added per worker in the period 1973–81 was 28.3 % lower than in the period 1966–73, whereas in the private sector it was only 0.9 % lower (cf. Table 4.8). These figures indicate that there was declining labour productivity in the parastatal sector as well as a deterioration in parastatal performance compared to the private sector in the period 1966–81. (Cf. also previous section above.)

Figures for the rate of capacity utilisation are not available for the manufacturing sector as a whole. We therefore have to resort to a selection of industries (cf. Table 4.9). Of the 20 industries in Table 4.9, 17 had registered capacity as well as output figures for 1976 and 1980. In 12 out of these 17 industries, the rate of capacity utilisation declined, in some cases dramatically, from 1976 to 1980. And, even more important, of the 17 industries with registered capacity as well as output figures for 1976 and 1980, 11 (i.e. nos. 1–8, 10, 11 and 17) increased their capacities during this time. However, in 9 of the 11 industries (i.e. nos. 1–8 and 18), actual output in 1980 was lower than, or about equal to, output at the full capacity utilisation level of 1976. For example, the capacity of the fertiliser industry was increased by 28 % (29,000 tonnes) from 1976 to 1980. But actual output in 1980 was only 48 % of the full capacity output in 1976. The shoe industry

Table 4.8. *Value added (VA), employment and labour productivity in terms of VA per employee in manufacturing parastatals and private industrial establishments with 10 or more employees.*<sup>37</sup>

	Value added (VA) at constant (1966-)prices Tsh m		Employment '000		VA per employee at constant (1966-)prices. Tsh		
	Parastatals	Private <sup>a)</sup>	Parastatals	Private <sup>a)</sup>	Parastatals	Private	Parastatals as % of private
1966	26.4	268.8	2.3	27.1	11478	9919	115.7
1967	82.5	236.7	5.3	28.9	15566	8190	190.0
1968	108.5	248.2	8.8	33.6	12330	7387	166.9
1969	151.2	279.4	12.4	31.0	12194	9013	135.3
1970	183.1	301.7	15.5	32.8	11813	9198	128.4
1971	228.3	303.9	24.8	25.7	9206	11825	77.9
1972	282.1	317.5	25.4	29.3	11106	10836	102.5
1973	279.8	364.6	29.6	33.8	9453	10787	87.6
1974	315.3	387.1	34.8	35.2	9060	10997	82.4
1975	354.0	313.1	35.3	38.0	10028	8239	121.7
1976	356.7	437.9	35.3	42.8	10105	10231	98.8
1977	393.0	467.7	43.1	41.1	9118	11380	80.1
1978	346.4	477.3	43.5	52.9	7963	9023	88.3
1979	307.9	622.0	46.9	58.9	6565	10560	62.2
1980	375.6	406.7	51.9	50.4	7237	8069	89.7
1981	292.5	346.8	52.3	56.1	5593	6182	90.5
Annual averages,							
1966–1973:	167.7	290.1	15.5	30.3	11643	9582	121.5
1973–1981:	335.7	424.8	41.4	45.5	8347	9496	87.9
Percent change of annual averages,							
1966/73–1973/81:	+100.2 Q	+46.4 %	167.1 Q	50.2 Q	–28.3 %	–0.9 %	
Annual trend growth rate <sup>b)</sup>							
1966–1973:	34.8 R	5.2 R	41.3 %	1.0 %	–4.6 Q	4.1 Q	
1973–1981:	0.7 %	2.3 R	7.3 Q	7.2 Q	–6.2 %	–4.5 %	

<sup>a)</sup> We assume that all parastatals belong to the group of establishments with 10 or more employees, so that private sector figures are derived by subtracting the figures for parastatals from the figures for total manufacturing with 10 or more employees.

<sup>b)</sup> Least squares regression of the formula  $Y_t = Y_0(1+r)^t$  on logarithmic form, where  $Y_t$  is VA in year  $t$ ,  $Y_0$  is a constant and  $r$  is the trend rate of growth.

increased capacity 2.3 times from 1976 to 1980. However, actual output in 1980 corresponded to only 69 % of full capacity output in 1976. A similar development took place in the other 9 industries, although in the majority of cases not as dramatically as in fertiliser and shoe production. In all the 9 industries the additional capacities had not been utilised by 1980. Conse-

Table 4.9. *Capacity creation and capacity utilisation in selected manufacturing industries 1976–80.*<sup>39</sup>

Industry	Units	Q <sub>c</sub>	Q <sub>c</sub>	Q <sub>a</sub>	Q <sub>a</sub>	Q <sub>a</sub> 1976	Q <sub>a</sub> 1980	Q <sub>a</sub> 1980
		1976	1980	1976	1980	Q <sub>c</sub> 1976 %	Q <sub>c</sub> 1980 %	Q <sub>c</sub> 1976 %
1. Textiles	mill m <sup>2</sup>	90	200	82.7	93.1	92	47	103
2. Cement	'000 tonnes	340	600	244	306	72	51	90
3. Beer	mill cases	6.3	6.8	5.3	5.1	84	75	81
4. Cigarettes	billion	4.8	5.5	3.68	4.74	77	86	99
5. Paints	'000 litres	5035	5631	2983	1364	59	24	27
6. Fertiliser	tonnes	105000	134000	42146	50852	40	38	48
7. Shoes	mill pairs	6.0	14	3.69	4.14	62	30	69
8. Tyre/tube	'000	438	538	375	432	86	80	99
9. Bicycles	'000	—	150	—	45.4	—	30	—
10. Leather	mill ft <sup>2</sup>	11.8	32.5	7.8	16.6	66	51	140
11. Hoe/plough	tonnes	1200	3000	1687	1940	140	65	162
12. Corrugated iron sheet	tonnes	52000	—	25940	17322	50	—	33
13. Blankets	'000	6000	6000	861	728	14	12	12
14. Garments	'000	—	1500	—	288	—	19	—
15. Dy cells	mill	96.00	96.00	57.87	79.25	60	83	83
16. Rolled steel	tonnes	30000	30000	10500	18414	35	61	61
17. Bags	mill	10.0	10.0	3.7	5.3	37	53	53
18. Sugar	tonnes	115000	176000	—	119280	—	68	104
19. Bottles	mill	63.5	196	76.7	81.4	121	42	128
20. Petroleum refining	'000 tonnes	750	750	746	588	99	78	78

Q<sub>c</sub> – output at full capacity utilisation.

Q<sub>a</sub> – actual output.

quently, the substantial investments in these capacities represented a waste of resources, because they were not at all necessary to ensure the actual output in 1980.<sup>38</sup>

In the period 1973–80, fixed capital formation in manufacturing industry amounted to Tsh 4,630 m. at constant (1966) prices. These investments, a large part of which consisted of imported producer goods, amounted to 60 % of total export earnings or 78 % of total foreign aid in the same period.<sup>40</sup>

For the monetary economy as a whole it has been shown that foreign aid financed an increasing share of total investment in the 1970s. In 1971, foreign aid financed only 3.3 % of total investment, increasing to 6.7 % in 1973 and 17.6 % in 1980 (cf. Table 4.10). Most probably, there was a similar pattern within the manufacturing sector which increased its share of total investment from less than 14 % up to 1973, to more than 34 % in the period 1977–80 (cf. Table 4.6).

Table 4.10. *Ratios of monetary gross investment and savings to monetary GDP at market prices 1971–80.*<sup>41</sup>

Year	Investment ratio %	Financed by		
		Domestic savings %	Foreign aid %	Other external financing %
1971	32.9	21.7	3.3	7.9
1972	26.8	19.9	6.9	0.0
1973	25.4	16.3	6.7	2.4
1974	26.7	6.2	10.4	10.1
1975	26.9	5.5	18.4	3.0
1976	26.4	19.0	10.2	–2.8
1977	25.4	17.3	11.2	–3.1
1978	30.4	6.0	12.2	12.2
1979	35.0	15.4	15.5	4.1
1980	33.2	8.5	17.6	7.1

Note: Domestic savings have been estimated as a residual. Hence, "other external financing" also included not only loans, direct investments, etc., but also use of formerly built-up foreign-exchange reserves. The two negative signs of "other external financing" for 1976 and 1977 mean that foreign aid and the import surplus added together contributed to an increase of foreign-exchange reserves.

Such amounts of investment in the manufacturing sector from 1973 onwards (cf. Table 4.6) should have resulted in a considerable increase of productive capacity within the sector. However, as we have already seen, instead of increasing, value added at constant prices actually fell sharply by 32 % from 1973 to 1983 (cf. Table 4.4). The most probable explanation of these developments is that there was a dramatic decline in the rate of capacity utilisation in the manufacturing sector as a whole.

In 1982, the average rate of capacity utilisation in manufacturing industry had come down to somewhere between 30% and 50 %, according to official sources.<sup>42</sup> But most probably it was less than 30 % in 1982, as indicated by the estimates presented in Table 4.11. By assuming capacity utilisation rates ranging from 70 % to 90 % in 1970, we arrive at rates ranging from 26 % to 29 % in 1982. The estimates in Table 4.11 indicate that the average rate of capacity utilisation in the manufacturing sector remained at a rather high and stable level in the years 1971-75. From 1975 to 1978 there was a slight decline. However, the steep decline apparently took place after 1978, the estimated rate of capacity utilisation falling from somewhere between 60% and 75 % in 1978 to less than 30 % in 1982.

In order to avoid too low estimates for 1982, we have based the calculations in Table 4.11 on rather conservative assumptions. Since figures for

Table 4.11. *Estimated average rates of capacity utilisation in the manufacturing sector 1975–82.*<sup>43</sup>

Assumed figures for 1970	70 %	80 %	90 %
Estimated figures: 1975	70 %	78 %	85 %
1978	64 %	69 %	74 %
1981	34 %	36 %	38 %
1982	26 %	27 %	29 %

Note: The estimates are based on the following assumptions: The incremental capital-capacity ratio is 4.5 throughout the period 1970–1980. As can be seen from Table 4.7 this figure is higher than the actual ICOR in any of the years 1968–72. Moreover, the growth of capacity has been estimated by using the FCF figures in Table 4.6. And finally, we have assumed that there was no increase in productive capacity from 1981 to 1982.

fixed capital formation in the manufacturing sector in 1981 are not yet available, we have, for example, assumed that there was no increase in manufacturing productive capacity from 1981 to 1982. However, capital formation in non-residential buildings and equipment other than means of transport in the monetary economy rose from Tsh 1,445 m. (at 1966 prices) in 1980 to Tsh 1,665 m. in 1981.<sup>44</sup> There can be little doubt that a substantial share of this capital formation took place within the manufacturing sector, so that productive capacity actually increased. Accordingly, there must have been a stronger decline in the average rate of capacity utilisation from 1981 to 1982 than is indicated in Table 4.11. When adding the further conservative assumptions underlying the calculations in the table, an average rate of capacity utilisation of less than 30 % in 1982 appears to be a realistic estimate.

On this background we have to conclude that in particular the Tsh 10,000 m. (at current prices) invested in manufacturing industry during 1977–80 to a large extent represented a waste of resources because the additional productive capacities were obviously not taken into use. This holds true notwithstanding the possible multiplier effects of manufacturing investment. (And the multiplier effects were probably rather low because of the high import content in manufacturing investment.)

Although the additional capacities were not brought into use, new workers were employed to operate them. From 1977 to 1980, the number of workers in manufacturing firms with 10 or more employees increased steadily from 84,200 to 102,300, or by 21.5%. However, during the same period the output of these firms in terms of value added declined by 9% (cf. Table 4.5). In other words, production declined despite increasing employment.

*Table 4.12. Labour costs as share of total value added and average wages/salaries in manufacturing establishments with 10 or more employees.<sup>46</sup>*

Year	Labour wsts as percentage of total value added	Average nominal wage/salary <sup>a)</sup> Tsh per month	Average real wage/salary <sup>b)</sup> Tsh per month	Percentage change in average real wage/salary from previous year
1970	42.9	383	370	—
1971	40.6	401	370	0.0
1972	40.4	465	398	7.6
1973	43.9	487	378	-5.0
1974	44.3	563	365	-3.4
1975	45.1	613	315	-13.7
1976	37.1	627	302	-4.1
1977	33.8	645	278	-8.0
1978	34.9	614	236	-15.1
1979	38.0	677	231	-2.1
1980	39.4	864	226	-2.2
1981	34.5	838	174	-23.0
1982	34.5	784	126	-27.6

<sup>a)</sup> Total wagsalary bill divided by number of employees.

<sup>b)</sup> Nominal wagsalary deflated by the cost-of-living index of goods and services consumed by urban dwellers, Tanzania mainland.

We would expect that labour costs as share of value added would increase when manufacturing firms facing declining production had to pay wages and salaries to a rapidly increasing labour force. But this ratio remained remarkably stable in the latter half of the 1970s. This was made possible through a sharp decline of real wages. Since 1972, the real average wage (including salaries of non-operatives) in manufacturing firms with 10 or more employees has decreased every year. In 1982, the real wage level was only one third of the level in 1972 (cf. Table 4.12). Real wages in manufacturing industry are now at such a low level that the workers and their families can hardly subsist. Most workers, therefore, try to improve their situation by taking extra jobs, or by cultivating a small shamba (if they have access to land reasonably near their homes), keeping hens, etc. Such auxiliary activities, along with the disincentive to work caused by falling real wages, may, indeed, have contributed to the fall in manufacturing production. In the present situation, which is characterised by severe over-employment in relation to actual production and extremely low real wages, wages in manufacturing industry may, to a large extent, be considered as disguised unemployment benefits rather than payment for work.

The situation of increasing employment combined with falling production had an inflationary impact which was hardly neutralised by the reduction of real wages. Inherent in this situation was an additional source of inflation associated with government financing of manufacturing investment. In the period 1978/79–1980/81, government financing of manufacturing investment amounted to Tsh 3 459.6m. or about 44 % of total manufacturing investment. Of this amount, about Tsh 1,645 m. (47 %) was financed through internal government borrowing, the remaining amount being financed through foreign loans and **grants**.<sup>45</sup> Although the local borrowing component of government-financed manufacturing investment was only 14 % of total domestic government borrowing during the period in question, it was, nevertheless, one of the many contributory elements in government development expenditure which combined to bring about a local currency government deficit of about 21 % of monetary GDP at factor cost over the years 1978/79–1980/81.<sup>47</sup> Thus, manufacturing investment in capacities which remained idle contributed to the inflationary process in Tanzania from the latter half of the 1970s.

#### MAJOR CAUSE OF INDUSTRIAL DECLINE SINCE 1973: THE DECLINING AGRICULTURAL SURPLUS

In my view, the decline in marketed agricultural production, especially the production of export crops, is a major factor bringing about the grave decline of the industrial sector since the mid 1970s. Let me add at once, that I do not adhere to a monocausal explanation, implying that decline in marketed agricultural output is the only “cause” of the present industrial stagnation in Tanzania. I am convinced that there are numerous other contributing factors for instance a too ambitious industrialisation strategy, planning failures and management problems, which involved high costs especially in terms of foreign exchange. One of these “internal” factors within the industrial sector itself is the tendency to increasing overmanning, particularly within the parastatal sector which we discussed in the preceding sections. There are also external factors, such as the deteriorating terms of trade. However, such factors have been widely discussed in the literature on the industrial sector in Tanzania. On the other hand, the major role of agriculture, both in promoting industrial growth and, conversely, in causing industrial stagnation or decline, has hitherto been grossly ignored in most of the literature.

The agricultural surplus I define as that part of the agricultural output which during a given period is not consumed within the agricultural sector itself. The agricultural surplus consists of two categories of physical products, namely exports of products from the agricultural sector to other

domestic sectors or abroad, and agricultural taxes and other government excises paid in kind, as physical agricultural products.<sup>48</sup>

Hence the agricultural surplus is that part of total production which is "exported" from the agricultural sector. Total marketed production is an approximate measure of the agricultural surplus. However, this measure exaggerates the size of the surplus, as it includes market transactions of agricultural products within the agricultural sector itself.

The mechanisms through which agriculture stimulates or makes possible industrial development become apparent when we look at the functions of each component of the agricultural surplus:

1. Agriculture produces a food surplus for the non-agricultural population, in particular workers in the industrial sector. The rate at which non-agricultural employment can increase depends on the rate of growth of the food surplus. Food is the "wage good" par excellence, and any attempt to increase non-agricultural employment at a faster rate than the agricultural surplus permits will sooner or later be frustrated through rapid inflation and/or severe food shortages.<sup>49</sup>

2. Agriculture supplies the industrial sector with raw materials. Any attempt to expand the industrial production capacity faster than the growth of the agricultural surplus permits, will sooner or later result in severe shortages of industrial raw materials and underutilisation of capacity in manufacturing industry.

3. Before industrialisation has gained momentum, agricultural exports will be the major source of foreign-exchange earnings. In most developing economies today this role of agriculture is an absolute precondition if a process of industrialisation is to come about at all. Industrialisation starts with imports of means of production which are essentially used for producing manufactured consumer goods for the domestic market. Because these "infant industries" are in general not competitive on the world market, only an insignificant share of total manufacturing production can be exported. Over a long period of time the reproduction and expansion of the manufacturing sector will therefore depend on the ability of agriculture to produce a surplus for export.

4. We have seen that the expansion of manufacturing industry depends on an increase in the supply of raw materials from agriculture and imported capital goods, raw materials, etc. financed through exports of agricultural surplus. To finance its own "imports" (from domestic sources as well as from abroad) the industrial sector must "export" some part of its own output. Therefore the increase in the demand for manufactured products cannot be wholly self-generated. And to the extent that it is not self-generated, it depends primarily on the increase of agriculture's demand for manufactured products. Hence, the growth of the agricultural surplus is



Table 4.13. *Indices of export volume, unit value and total value of exports, 1966–80. (1976–78 = 100)*<sup>51</sup>

Year	Export Volume	Unit Value in terms of US \$	Total Value of Exports in terms of US \$
1966	134	38	51
1973	137	51	70
1974	101	78	79
1975	108	69	75
1976	117	83	97
1977	93	116	108
1978	90	105	95
1979 <sup>a)</sup>	94	114	107
1980 <sup>a)</sup>	87	124	108

<sup>a)</sup> Provisional estimates.

essential for providing the growth of purchasing power necessary for sustaining industrial expansion.

The strategic role of agriculture in economic development is all the more important since the growth of the agricultural surplus depends essentially on the rise of labour productivity in **agriculture**.<sup>50</sup> This is mainly subject to "autonomous" structural changes promoting innovations within agriculture. Therefore agricultural development has a rather autonomous character, whereas industrial expansion depends on agriculture on the "supply side" as well as the "demand side".

The development of the agricultural sector in the 1970s is discussed in other parts of the present book. Even though it is hard to obtain reliable statistics for the sector, all available data indicate a decline of the agricultural surplus. This is reflected in the tendency of food imports to increase in the 1970s, whereas the volume of exports declined. The decline of the export component of the agricultural surplus was to some extent counteracted by manufactured exports which increased during the decade, reaching about 20% of total export value in 1980. However, more than 60% of manufactured exports was contributed by petroleum products and diamonds. Neither of these items provide a basis for long-term export growth: Tanzania is a net importer of petroleum and petroleum products, and the diamond deposits are gradually being depleted. The remaining manufactured exports, mainly processing of agricultural raw materials, amounted to about 8 % of total export value. This means that agricultural

Table 4.14. *Indices of the volume of imports (1976-78 = 100)*.<sup>53</sup>

Year	Total imports	Imports financed by export earnings	Imports financed by foreign aid and other external financing <sup>a)</sup>
1973	105	126	69
1974	106	92	125
1975	101	79	132
1976	88	110	52
1977	91	108	63
1978	124	83	186
1979	102	82	131
1980	101	66	153
% change			
1973-80	-3.8 %	-47.6 %	+121.7 %

<sup>a)</sup> Including drawings on foreign exchange reserves.

crops will contribute the major share of Tanzania's export earnings for a long time to come.

Despite some increase of manufactured exports, Tanzania's total export volume declined during the 1970s. In 1973 the export volume peaked only marginally above the level of 1966. Later a clear downward tendency emerged, except during the coffee-boom of 1976. In 1980, Tanzania's volume of exports was 36.5% lower than in 1973 (cf. Table 4.13).

A major effect of the declining volume of exports was that the volume of imports paid for by export earnings declined dramatically to become 47.6 % lower in 1980 than in 1973 (cf. Table 4.14). The worsening of the terms of trade during the period in question accounts for about 11 % of this decline, whereas the falling production of export crops and the consequent decline in volume of exports accounts for the remaining more than 36 %<sup>52</sup>.

However, Table 4.14 shows that, despite the sharp decline in the volume of imports paid for by export earnings, the total volume of imports remained rather stable in the 1970s. This was made possible, first of all through the increase of foreign aid. However, foreign aid is in general tied to *investment projects*, the idea being that developing countries should receive aid to develop their social and economic infrastructures and productive capacities, their economies thereafter being able to sustain themselves and utilise the new productive capacities. Although this idea has been modified by deliberations on "aid absorption capacity", it has not been fundamentally challenged.

In the case of Tanzania, we can now see that foreign aid not only upheld the volume of imports. Combined with the declining volume of exports, it

Table 4.15. *Composition of Tanzanian imports.*<sup>55</sup>

Year	Consumer goods <sup>a)</sup>		Intermediate goods		Capital goods		Total	
	Tsh m.	%	Tsh m.	%	Tsh m.	%	Tsh m.	%
1971	690	25.3	1199	44.0	836	30.7	2725	100.0
1972	828	28.8	1320	45.8	730	25.4	2878	100.0
1973	1057	30.4	1592	45.7	830	23.9	3479	100.0
1974	1944	37.0	2222	42.2	1092	20.8	5258	100.0
1975	1786	31.4	2356	41.4	1552	27.2	5694	100.0
1976	1123	20.8	2662	49.4	1606	29.8	5391	100.0
1977	1152	18.6	2820	45.5	2228	35.9	6200	100.0
1978	1708	19.4	3554	40.4	3536	40.2	8798	100.0
1979	1308	14.6	3612	40.4	4021	45.0	8941	100.0
1980	1430	14.2	4021	40.0	4606	45.8	10047	100.0
1981*	1044	10.7	3841	39.4	4855	49.9	9740	100.0
Annual	trend growth rate <sup>b)</sup> 1971–76:							
	16.5 %		18.9 %		18.0 %		18.2 %	
Annual	trend growth rate <sup>b)</sup> 1976–82:							
	0.1 %		8.7 %		25.1 %		13.8 %	

\* Provisional figures.

<sup>a)</sup> Includes a portion of passenger cars

<sup>b)</sup> Fitting by least squares regression of the formula:  $M_t = M_0(1+r)^t$  on logarithm form, where  $M_t$  = imports in year  $t$ ,  $M_0$  = constant and  $r$  is the trend rate of growth.

also brought about a profound change in the composition of imports, as Table 4.15 shows. Especially remarkable is the period 1976–81, when the share of consumer goods in total imports decreased from 20.8 % to 10.7 % and the share of intermediate goods declined from 49.4 % to 39.4 %. By contrast, the share of capital goods increased from 29.8 % to 49.9 %, implying that the imports of these goods at nominal prices increased by an unprecedented rate of 25.1 % per year from 1976 to 1981. During the same period, the annual rates of growth of intermediate goods imports and total imports were only 8.7 % and 13.8 % respectively (cf. Table 4.15). It is also worth noting that the major share of the capital goods increase was not simply caused by accelerated imports of much-needed transport equipment which remained relatively stable, accounting for 25.6 % of total capital goods imports in 1976, and 23.8 % in 1981.<sup>54</sup> The remaining share of capital goods consisted of machinery and other equipment. In short, at the same time as the Tanzanian economy suffered a balance of payments crisis and domestic production declined, investments, and hence imports of capital

Table 4.16. *Foreign exchange allocations to manufacturing industry. Share of allocations to requests.*<sup>56</sup>

Year	Raw materials	Machinery spares	Total
1977	59.4 %	29.3 %	55.8 %
1978	51.4 %	29.1 %	48.9 %
1979	22.0 %	11.6 %	21.2 %
1980*	25.0 %	8.0 %	23.6 %
1981*	6.0 %	5.0 %	5.9 %

\* Provisional figures.

goods, a substantial share of which were financed by foreign aid, continued at a higher level than ever before (cf. Tables 4.6, 4.10, 4.11 and 4.15).

The additional productive capacities which were created by the high level of investments required increasing imports of spare parts, components and all kinds of intermediate goods and materials. These categories of imports had to be financed by Tanzania's export earnings. However, the volume of imports financed by export earnings fell by 47.6 % from 1973 to 1980, resulting in a declining share of intermediate goods in total imports (cf. Tables 4.14 and 4.15) and a severe underutilisation of productive capacities as shown in the previous section of this chapter.

In this situation the government was compelled to reduce drastically the foreign-exchange allocations to manufacturing industries and other sectors of the economy. Table 4.16 shows allocations as shares of total requests from manufacturing firms. There can be no doubt that manufacturing industry was allocated a sharply declining share of foreign exchange in comparison with its requirements towards the end of the 1970s. But it is likely that this trend is somewhat exaggerated in the table, as many firms will tend in the present situation to ask for more foreign exchange than they actually need.

## SOME CONCLUDING REMARKS

At an early stage of industrialisation most industries will not be competitive on the world market. On the contrary, in order to grow, such "infant industries" may need protection from world market competition. The net foreign-exchange earnings needed by the manufacturing sector must, therefore, be produced mainly by other sectors of the economy. The only sector which can generally play this role is the primary sector, and, in the case of Tanzania, first and foremost agriculture.

We have seen that industrial investment – largely financed by foreign aid – occurred at a very high pace, especially towards the end of the 1970s. At the same time, the food component of the agricultural surplus stagnated, necessitating increasing imports of staple grains; and the export component of the agricultural surplus declined dramatically, resulting in stagnating export earnings despite increasing overall prices for Tanzanian exports. As a result of these processes, the economy became increasingly less able to cover the foreign-exchange costs of operating its acquired productive capacities, and a grave underutilisation of capacities in manufacturing industry developed. The production shortfalls in turn nourished inflation and contributed to the further depression of the export sector. In brief, the Tanzanian economy became increasingly unable to sustain the productive capacities it had acquired through foreign aid combined with high domestic costs, especially within the manufacturing sector.

Today, Tanzania depends on foreign aid, not only to increase its industrial capacities, but also to operate already installed capacities. In this situation *import support* has come on to the agenda. However, import support alone does not provide any solution to the present crisis. To become effective, any import support should be accompanied by political measures to overcome the internal structural causes of the present crisis.

First, investments in new industrial projects should be postponed until the present crisis has been overcome. The only exceptions to this rule should be industries which can be shown to be important bottleneck breakers and/or reduce considerably the import dependence of existing essential industries, including industries which contribute substantially to Tanzania's foreign-exchange earnings.

Second, more efforts should be made to reduce the import dependence of existing industries and to increase the use of local material resources in industrial production. The problem of the import content in industrial production should also be given far more attention in the assessment of future industrial projects.

And third, for Tanzanian industry to recover, it is of paramount importance that the agricultural sector is revived. In the short run, an efficient realisation of the agricultural surplus to support the industrial sector and the economy as a whole, requires drastic improvements in crop procurements, storage, processing and marketing. In the longer run, traditional agricultural techniques must give way to the introduction of more efficient production techniques if the agricultural surplus is to increase substantially. The questions remain as to whether the structures created through villagisation can provide a potential basis for the introduction of improved techniques, and whether the government will be able to handle the severe problems related to the poor performance of crop authorities and manufacturing parastatals.

## NOTES

1. Cf. Rweyemamu, Justinian, *Underdevelopment and Industrialization in Tanzania. A Study of Perverse Capitalist Development*, Oxford University Press, London/New York, 1973, pp. 53 and 112; The United Republic of Tanzania, *Tanzania Second Five Year Plan 1969–1974*, Dar es Salaam, 1969, Vol. I, p. 59; and World Bank, *Tanzania – Basic Economic Report: Main Report*, Washington D.C., 1977, p. 145.
2. Cf. Rweyemamu, *op.cit.*, p. 112.
3. *Ibid.* p. 116.
4. *Ibid.*
5. *Ibid.* p. 41.
6. *Ibid.* p. 146.
7. *Ibid.* pp. 117 ff.
8. Cf. Skarstein, Rune and Samuel M. Wangwe, *Industrial development in Tanzania: Some critical issues*, Preliminary report, Trondheim, January 1985, p. 10.
9. *Ibid.*, p. 15.
10. Source: World Bank, *Tanzania – Basic Economic Report: Annex V – Industry*, Washington D.C., 1977, p. 40.
11. Pratt, Cranford, *The Critical Phase in Tanzania 1945–1968*, Cambridge University Press, Cambridge/London, 1976, p. 176.
12. Estimated from United Republic of Tanzania, *The Economic Survey/Hali ya Uchumi*, several issues, 1971–1975.
13. Estimated from data in United Republic of Tanzania, *National Accounts of Tanzania 1966–1980*, Dar es Salaam, 1981.
14. Cf. Skarstein and Wangwe, *op.cit.* pp. 196–202.
15. Pratt, *op.cit.*, p. 167.
16. Source: *Ibid.*
17. Figures derived from various issues of *The Economic Survey*.
18. Cf. also Havnevik, Kjell J. and Rune Skarstein, *Agricultural Decline and Foreign Aid in Tanzania*, DERAP Working Paper No. A 341, Chr. Michelsen Institute, Bergen, January 1985.
19. Nyerere, Julius K., *Freedom and Development*, Oxford University Press, London/Nairobi, 1973, p. 277.
20. Pratt, *op.cit.*, p. 228.
21. *Ibid.*
22. Shivji, Issa G., *Class Snuggles in Tanzania*, Tanzania Publishing House, Dar es Salaam, 1975, p. 79.
23. Nyerere, *op.cit.*, p. 279.
24. Cf. Clark, Edmund W., *Socialist Development and Public Investment in Tanzania, 1964/1973*, University of Toronto Press, Toronto, 1978, p. 102. Cf. also Shao, John, *The Private and Asian Character of Tanzanian Manufacturing Industry*, mimeo, University of Dar es Salaam, 1981, pp. 6–7.
25. Sources: World Bank, *Basic Economic Report: Annex V*, *op.cit.*, p. 49; *National Accounts of Tanzania 1964/1972*, Dar es Salaam, 1974; and *National Accounts of Tanzania 1966–1980*, *op. cit.* Fixed capital formation at current prices has been deflated to 1966 prices by using the implicit deflator for total capital formation in the *National Accounts*.
26. Estimated from figures in Table 4.8.

27. Silver, M.S., *The Growth of Manufacturing Industry in Tanzania*, Westview Press, Boulder and London 1984, p. 272.
28. Ibid.
29. Ibid., p. 274, emphasis added.
30. Kim, Kwan S., Enterprise performances in the public and private sector: Tanzanian experiences, 1970–1975, *The Journal of Developing Areas*, 15 (April 1981), p. 482, emphasis added.
31. Ibid., p. 483.
32. Source: *National Accounts of Tanzania 1964–1972 and 1966–1980*, op.cit., and Skarstein and Wangwe, op.cit., p. 10. Source of figures for 1981 to 1983 is *The Economic Survey 1983*, Dares Salaam 1984. There is some discrepancy between the VA figures in *National Accounts* and *Hali ya Uchumi*, respectively. However, to keep macro-consistency with manufacturing FCF figures which are available only in *National Accounts*, we have used VA figures from *National Accounts* up to 1980.
33. Source: *The Economic Survey*, several issues 1971–83. Value added at current prices has been deflated to 1966 prices by using the implicit GDP deflator for total manufacturing industry in the named publications.
34. Cf. Skarstein and Wangwe, op.cit., pp. 199–200.
35. Source: *National Accounts*, op.cit. Also here manufacturing FCF at current prices has been deflated to constant (1966) prices by using the implicit deflator for total FCF in the named publications.
36. Sources of VA and FCF figures: See Tables 4.4 and 4.6.
37. Sources: World Bank, *Basic Economic Report– Annex V*, op.cit., p. 49; UNIDO, *The potential for resource-based industrial development in the least developed countries: The United Republic of Tanzania*, UNIDO Regional and Country Studies Branch, February 1982, p. 57; and *The Economic Survey*, several issues up to 1982. Value added at current prices has been deflated to 1966 prices by using the implicit GDP deflator for total manufacturing industry in *The Economic Survey*.
38. See also Wangwe, S.M., Industrialization and Resource Allocation in a Developing Country. The Case of Recent Experiences in Tanzania, *World Development*, 11, (6) (1983), pp. 483–92.
39. Sources of capacity figures: UNIDO, *The potential for resource-based industrial development*, op.cit., p. 49; and Ministry of Industries, *Strategy for Increasing Industrial Exports*, mimeo, Dar es Salaam, 23 March 1984. Sources of actual output figures: Ministry of Industries, ibid; *The Economic Survey 1981*; and Bank of Tanzania, *Economic and Operations Report*, June 1981. In some cases there are discrepancies between the capacity figures from the Ministry of Industries and UNIDO respectively. In those cases I have taken the lowest figure.
40. Cf. Skarstein and Wangwe, op.cit., pp. 204–5; and Table 4.6 above.
41. Source: Skarstein and Wangwe, op.cit., p. 195.
42. Nyerere, J.K., *Five Years of CCM Government. The Address given to the National Conference of Chama Cha Mapinduzi, Dar es Salaam 22 October 1982*, The Government Printer, Dar es Salaam 1982, p. 44.
43. Source: Skarstein and Wangwe, op.cit., p. 204.
44. Cf. *The Economic Survey 1982* p. 17, Dar es Salaam 1983.
45. Munanka, E.M.B., *Macro-Aspects of Industrial Financing in Tanzania*, M A Thesis, University of Dar es Salaam 1981, pp. 19 and 30.
46. Source: *The Economic Survey*, several issues up to 1983.
47. Cf. *The Economic Survey 1981*, Dar es Salaam 1982.

48. See e.g. Schäfer, H.-B *Landwirtschaftliche Akkumulationslasten und industrielle Entwicklung*, Springer-Verlag, Berlin/Heidelberg/New York, 1983, p. 61.

49. Cf. e.g. Kaldor, Nicholas, *Strategic Factors in Economic Growth*, Cornell University Press, Ithaca/New York 1967, p. 55; and Taylor, Lance *Structuralist Macro-economics*, Basic Books, New York, 1983, pp. 162–70.

50. In the literature it is not generally agreed that a rise of labour productivity in agriculture is a necessary precondition for increasing the agricultural surplus even in the longer run. (See e.g. Schäfer, *op.cit.*, p. 92). However, it will take us too far to discuss this point in greater detail here.

51. Source: World Bank, *Economic Memorandum on Tanzania*, Report No. 3086 TA, Washington D.C. 23 January 1981, p. 54.

52. Cf. *ibid.*, pp. 53–4; and Skarstein and Wangwe, *op.cit.*, pp. 244–245.

53. Source and further references: Skarstein and Wangwe, *op.cit.*, p. 245.

54. Cf. *The Economic Survey 1982*. p. 31, Dar es Salaam 1983.

55. Sources: *The Economic Survey 1977/78* and 1982.

56. Source: UNIDO, *The potential for resource-based industrial development*, *op.cit.*, Table 3.14.



# 5. Eating the Carrot and Wielding the Stick: The Agricultural Sector in Tanzania

*Phil Raikes*

Tanzania's agriculture has been far from a success story in recent years. During the past decade production of major export crops has declined in volume and still more in value. While export proceeds have declined, import requirements have continued to grow, implying a steadily worsening balance of payments. Sales of food on official markets have declined, while the urban population continues to grow rapidly, implying both food shortages and increasing imports.

The marketing and transport systems for agricultural products, agricultural inputs and consumer goods are in a state of disarray and a wide variety of basic goods is available only with difficulty and at high prices. Since, in addition, official agricultural producer prices have failed to keep pace with inflation, both incentives and capacity to produce within the peasant sector have been reduced severely. This has led Goran Hyden' to talk of peasants exercising an "exit option" from the cash economy, back to subsistence production, a formulation with which I disagree strongly. Peasant participation in the *official* market economy has fallen, but most of the change has been to unofficial sales rather than subsistence. Moreover the implied element of choice seems absent. Peasants have been forced out by lack of markets or inputs rather than "exercising an option" to go.

The Tanzanian crisis has been discussed so widely that the effect can be to exaggerate its relative seriousness. Certainly the situation in Tanzania is bad, but nothing like so bad as in Ethiopia, Sudan or Mozambique. There have been serious food shortages in Tanzania, but no large-scale famine. The official marketing system is increasingly ineffective, but an unofficial one makes good at least a part of the deficiency. In a curious way, Tanzania's debt problem is partly that it does not owe enough for default to be a serious worry to creditors. Were the debts on a par with those of Nigeria, Sudan or Ivory Coast, it would almost certainly have been easier to get access to bridging finance in recent years.

Turning to policy, it is true that there have been major errors and gross mismanagement. But these do not appear to have been much worse than in a number of other African countries. One of the things which strikes the

observer is the similarity of many of the policies implemented over a wide range of tropical African countries, with very different formal political affiliations. These may have been exaggerated by Tanzania's definition of socialism, but scarcely to the extent of putting it in a separate category.

A disturbing feature of contemporary comment on Tanzania is a tendency to see "policy" as resulting purely from voluntary choices, made within the country on the basis of political ideology. No one doubts that Tanzania's socialism has been an important factor in determining the direction of policy and thus its effects. But to assume that policy choice was either unconstrained or purely an internal matter is absurd. Among Tanzania's major problems has been a series of costly and unproductive investment projects. To be sure, decisions in favour of these were taken in Tanzania. But not one of them could have been undertaken without foreign finance and technical assistance. Apart from this, many policies rest on assumptions about agricultural "**modernization**" held in common by the Tanzania Government and its anti-socialist critics, while no small proportion of policy has been carried over (with or without change) from the colonial period.

The above is in no sense an attempt to "exonerate" the Tanzanian Government and policy-makers. But, as I shall attempt to show, it does throw serious doubt on some (not all) of the policy prescriptions currently being offered as a solution to Tanzania's problems. Some of these seem simply unrealistic. Others remain within the framework of assumptions which has contributed to the current situation.

The remainder of this chapter puts some flesh on the outline and assertions above. The next section provides a brief sketch of the geographical and demographic conditions which lie behind Tanzanian agriculture. This is followed by sections which outline firstly long-term tendencies and then trends in production of the past decade or so. There follows an account of policies, and the way in which they have affected production. The final section attempts to draw the different strands together.

I should add that, in spite of the inordinate length of the paper, there are still many things missing. Any discussion, or even mention, of the position of women in Tanzanian agriculture is one obvious example, and with it any serious discussion of the internal dynamics of small peasant agriculture. Nor am I satisfied that the conclusion has either drawn together enough threads or that it has managed to weave them into a coherent piece. I hope though that some of the pieces can contribute to further analysis.

## CLIMATE, SETTLEMENT AND LAND-USE

Tanzania is among the larger countries in tropical Africa, with a land area of over 880,000 sq. km. and a population of over 20 million. It is a country of

enormous variety and contrast, ranging from a dry central plateau with mean rainfall under 500 mm, to highland areas with up to 2500 mm per annum.

The range in population density and production is equally large. Highland areas, above about 1500 m, account for under 5% of the total land-surface, between 15% and 20% of population, about 30% of total agricultural production by value, and as much as 50% of total export-crop production. Since these were also the areas upon which Christian missions first concentrated, levels of education are also higher, and these areas have produced far more than their share of senior civil servants and professionals. They have also received a disproportionate share of foreign aid. At the other end of the scale are areas where rainfall is inadequate for settled agriculture, where soils are especially poor, or where much of the land is tsetse-infested and where income and education levels as well as population density are very much lower. Unlike Kenya, where the highland and high-potential area forms a consolidated block, Tanzania's highland areas are spread around the periphery of the country, much increasing costs of transport and communications.

This has enormous significance for agricultural policy and its effects. Specific crops and livestock are suited to particular climatic areas and vegetation. But besides this, different parts of the country have very different histories of settlement, agriculture, culture and, not least, interaction with state authorities. Often these differences go back to well before the colonial period. During the period of slave-trading, some local societies were ravaged, while others consolidated. The Chagga of Kilimanjaro, in the relative security of their mountain homeland, were extending their irrigation system, while the Ha of Kigoma suffered from slaving, warfare and the related advance of tsetse-fly.<sup>2</sup> During the colonial period, coffee and missionaries brought income and education to Kilimanjaro, while recruitment agencies maintained Kigoma as a backward "labour reserve" for the plantation sector. When forced villagization came in the 1970s, Kilimanjaro and Bukoba, with their high-ranking politicians and civil servants, were subject to far less thorough-going and traumatic resettlement than Kigoma or Dodoma. It is thus worth looking briefly at some of the major determinants of settlement and agricultural practice, and their interaction with historical events.

Climate is the major single factor affecting rural population distribution and the level of economic activity. Map 4 shows the distribution of rainfall in Tanzania, the major features being a dry centre with higher rainfall to east and west and with small highland pockets of rainfall sufficient for perennial crops. Rainfall variability increases both statistically and in terms of its impact on crop/livestock production as the level of rainfall falls.

Only just over 50% of the country gets 750mm or more per annum in four

years out of five, this being about the minimum required for viable **non-irrigated** cultivation at the temperatures characteristic of Tanzania. Cultivation takes place in drier areas, but almost always accompanied by livestock production, which functions in part as a form of insurance against drought. On the other hand, tsetse-fly, which infests much of the south and west and precludes cattle-herding, is usually associated with rainfall above 750mm per annum.

The availability of household drinking water also varies enormously. In the well-watered highland areas, few households would have to go more than half a kilometre to get water. By contrast, during the dry season in the drier areas, a woman might have to trudge up to five or ten kilometres, using most of the day and a lot of energy to provide a family with one four-gallon container. There are also areas which could be cultivated and settled if drinking water was available.

The pattern of soils in Tanzania is highly variable, resulting both from the complex underlying rock-formation in an area through which the great rift valleys pass, and from volcanic action. The most fertile soils in the country are volcanic in origin. Otherwise it is hard to generalise about soil nutrient content or structure, since variations due to topography and **geomorphological** processes are also great.

In many areas, soil erosion is a major problem, notably where there is overgrazing, where large areas have been cleared for mechanised farming, and where density of peasant cultivation has increased beyond the limit of what can be maintained with existing techniques. This includes so-called “**modern**” techniques, involving continuous cultivation with **mono-cropping**, fertilizers and chemicals. While such techniques are widely seen, by government and aid donors alike, as a solution to the problem of increasing agricultural production, their negative effect on soil structure makes them, in reality, one of the major dangers for the future. Not only do they increase vulnerability to rainfall variation, but chemical imbalances arising from mono-cropping reduce yields and returns to fertilizers.

The variation in vegetation is also enormous, ranging from tropical rain forest through various gradations of woodland, **bushland** and savannah to semi-arid short-grass savannah. It is said that 60% of Tanzania's land surface is tsetse-infested woodland and bush, though rates of infestation range from minimal to unbearable. This precludes large areas of the country from livestock husbandry and much smaller ones from human settlement. Tsetse infestation is not invariant. The area infested has grown considerably during the present century, while, at the same time, significant areas have been cleared from tsetse for peasant **cultivation**.<sup>3</sup>

Vegetation affects methods of cultivation. Bush-fallow systems, which predominated until recently, have different implications depending upon the pattern of vegetation. For a given rainfall, the more extensive the forest

cover, the longer the fallow period required and the lower the labour requirement and sustainable population density. Equally importantly (though non-measurably), it affects the ways in which people cultivate and the sequences of crops cultivated.

Permanent cultivation was practised, in the previous century, only in a few mountain areas with high population densities. This had considerable significance for colonial policy, since colonial officers tended to assume that a more intensive agriculture implied a more "advanced" people, relating this to pseudo-genetic factors rather than climate, population density and history. Favoured "advanced tribes" were treated very differently from those thought to be backward, shiftless and lazy.<sup>4</sup> Apart from this, there are very real differences in the forms and scale of social organization which emerged, and these can be related, though not in any simple way, to environment.<sup>5</sup>

Average population density in Tanzania is around 20 sq. km but varies between under 2 and over 400. There is thus no generalised land shortage, though there are areas where land is very scarce and where a significant proportion of the population has insufficient land. At the same time, only between 5% and 10% of the country is cultivated<sup>6</sup>, and even allowing for a significant proportion precluded from cultivation by tsetse-infestation, by insufficient rainfall or by distance from drinking water, this provides considerable space for expansion.

Average farm size in Tanzania is said to be below 2 ha, with only an insignificant proportion of land in holdings above 10 ha. This seems biased downward. Apart from the estate, state farm and large private farm sectors, there is a significant intermediate category composed of peasants cultivating between ten and fifty ha or more. These peasants form a small proportion of the total population, but they are more significant in terms of production (and local political and economic power).

The pattern of settlement follows climate and vegetation, with exceptions relating to specific historical circumstances. The highest levels of population density are found in mountainous areas, not only because of their potential for permanent cultivation but because the plains were often controlled in the pre-colonial period by larger and more militaristic tribes, dependent wholly or in part upon livestock. Because of this, one finds highly intensive systems of cultivation in some of the mountain areas. The Chagga people of Kilimanjaro introduced irrigation and permanent cropping before the arrival of the first Europeans. Ukara Island in Lake Victoria was already supporting a population in excess of 500 per sq. km in the mid-nineteenth century, under a highly labour-intensive system in which virtually every available form of nutrient, including leaves of trees and human manure, were integrated with irrigation and a complex system of rotation. This provides a very clear example of Esther Boserup's<sup>7</sup> conten-

tion that necessity in the form of population pressure is the mother of agricultural innovation. Further evidence for this comes from the fact that Ukara Islanders who migrate to the mainland, where population density is far lower, promptly drop their labour-intensive methods (over ten hours per day throughout the year) for the much easier methods practised on the mainland.

In some parts of the country people have lived in villages for a long time, though the villages of different areas have little in common with one another. **Banana**/coffee villages (as in Kilimanjaro and Bukoba) are usually tight clusters of intensive permanent farms and houses within them. Riverine and coastal villages, which rely on irrigation, fishing and tree crops, or the traditional plains villages of Sumbawanga, tend to include little cultivated land within them.

Natural fallowing, of one or other form, was, until quite recently, the standard method of cultivation over much of the country. Land was cleared and cultivated until fertility fell or weed growth became excessive, after which it was allowed to revert to natural vegetation for whatever period was required for the restoration of fertility. Or rather, this was the ideal, which was followed in areas where land was sufficient. But for decades now, population pressure has been reducing fallow periods in many areas.

It is often claimed that natural fallowing systems are destructive of the soil and the result of backwardness and laziness. Like any other system of cultivation, they will be destructive in the long run if more is taken from the soil than is returned to it. It is also true that they require less labour for a given output than more intensive systems, though it seems merely common sense rather than laziness not to do more work for a given output than is necessary.

But natural fallowing does not preclude other means of maintaining or restoring soil fertility. Allen<sup>8</sup> and other authors have shown how mulching, green manuring and a variety of ways of heaping or ridging the soil were used to improve soil fertility and how various forms of rotation were used to extend the cultivation period without reducing fertility.

Important among the latter is *inter-cropping*, in which a variety of different crops are grown on the same land, either simultaneously or in overlapping succession. This is another practice which has been widely condemned by agricultural modernisers, but whose value is now coming to be appreciated by those who have taken the trouble to consider it in detail. Belshawe<sup>9</sup> has summarised some of the advantages, including fertility maintenance through the planting of complementary crops (i.e. grains and legumes), erosion control (through the maintenance of constant soil cover), weed-control (for similar reasons) and increased total yield per acre.

Another means of maintaining soil fertility under permanent cultivation

is to concentrate fertility from a wider area. For example, in Bukoba District bananas and coffee have been cultivated permanently for up to several hundreds of years, both by nutrient replacement (mulching and green-manuring) and fertility concentration (application of manure from cattle grazed on the surrounding infertile grasslands). In the process, soil fertility and structure were not just maintained, but raised far above the level of surrounding land, though the system is in crisis now.

Many of these processes have been breaking down in recent decades. Increasing population density limits the length of fallow periods. Where farms have been expanded by cash-cropping, labour constraints often necessitate less labour-intensive methods (as, in some cases, does labour migration). In many cases packages of "modern methods", including pure-stand cultivation, purchased seeds, fertilizers, chemicals and quite frequently mono-cropping, are promoted to replace rather than supplement previous husbandry practices.

Given rapid population growth, the agricultural practices of most Tanzanian peasants do need to be intensified. But more fruitful than simply discarding existing practices in favour of "modern methods" would be to see what in these systems can be used as a basis for further improvement.

There are several major problems in doing this. The first is lack of knowledge. Any natural fallowing system will involve a cycle of at least ten and up to thirty years. During the short periods of research now common, cultivation inevitably gives the appearance of being permanent, whether it is or not. Few studies of traditional societies consider the cultivation system in detail and virtually no use is made of such information as there is by agricultural policy-makers. This in turn relates to the second problem, lack of interest on the part of policy-makers. A widespread attitude in the Ministry of Agriculture and among experts is that "traditional agriculture" is simply backward, and not worth knowing about.

A third problem is that the extent of natural fallowing has been drastically curtailed during the past decade, by the villagization of the population. When 250 or more families are congregated in one village, travelling-time to fields builds up very rapidly. There is thus a strong tendency to concentrate on the fields nearest to the village, cultivating them permanently to the detriment of their long-term fertility. While fertilizer use has increased substantially over the past decade, limited availability precludes its regular use by the majority of peasants. In addition, fertilizer replaces soil nutrients but does not, without appropriate husbandry, maintain soil structure. This is especially a problem where agricultural innovations are based on mono-cropping.

To appreciate the drastic nature of villagization, one must know that, until ten to fifteen years ago, the characteristic settlement pattern over large

parts of Tanzania was highly disaggregated. During the **mid-1960s**, it is estimated that some 85% of the rural population lived in isolated homesteads or small groups of one or a few extended families. In some parts of the country people lived in villages, but the trend during the colonial period had been away from nucleated **settlement**.<sup>10</sup> Under compulsory **villagization** operations between 1970 and 1975, something like 85% of the rural population is claimed to have been moved into nucleated villages of 250 people or more.

Apart from the effects on cultivation methods, increased travelling-time to fields affects production negatively by reducing the time available for cultivation. Similarly the **firewood** requirements of large villages lead to deforestation in their vicinity, which both increases the time women have to spend collecting **firewood** and accelerates erosion. The traditional **land-tenure** systems of Tanzania were largely based on use-right, deriving from tribe, clan or family membership, rather than property ownership. Within this general structure, however, there were enormous variations. This has been overlaid, in some cases, by something more closely approaching ownership rights, with purchase, sale and inheritance of land. This has gone furthest in highland and other areas of high population density. In formal terms, all land in Tanzania belongs to the state, but while this is of enormous importance in allowing policies like **ujamaa** / resettlement and making it easier for the state to commandeer land for state farms and ranches, it affects day-to-day use or transactions indirectly, through lack of security.

For example, the Ismani Valley in Iringa Region was first opened up by African commercial farmers using tractors, in the early 1950s, and rapidly became Tanzania's largest single maize-growing area. Due to a type of farming aimed at maximising short-term profit – effectively mechanised shifting cultivation – the area is now so eroded and degraded that production is a fraction of its previous level. Rayah **Feldman**<sup>11</sup> has related this to the lack of secure property rights. So long as new land was "free" for the cost of clearing and so long as land rights were insecure, as they were, one would hardly expect other than short-term profitmaking.

Many other factors affect settlement and agricultural production patterns, including incidence of vermin, pests and diseases, proximity to railways, roads, national borders and urban markets and local **socio-political** structures.

Overlaid by national structures imposed during and since the colonial period, the latter still have considerable significance. It is no coincidence that some of the poorest people in Tanzania come from the subordinate sections of societies once divided into Tutsi Hima overlords and peasants (like the Ha of Kigoma or the "Biharamulo natives" of note 4), often subject to the worst ravages of slavery and subsequently a major source of plantation labour. In short, there are wide variations not only



between but within areas. Often the two are combined, where migrant labourers form an under-class in the more prosperous peasant farming areas.

## LONG-TERM TRENDS IN TANZANIAN AGRICULTURE

Figures for total marketed output of crops, in the following section, give an impression of stagnation. A widespread current of opinion looks at African peasants using hoes and assumes that technical change has been minimal. Neither is true. The apparent stagnation in production masks a significant move to unofficial markets and, to the extent that it is true, results largely from failure of other sectors to deliver inputs and goods for purchase. The present century has seen enormous changes in population density, technique of production and commercialization to say nothing of regional changes in production and settlement.

*Commercialization* of agricultural production has been the most important single trend, though unevenly distributed over time and space. It started in some areas well before the colonial period and has accelerated since. The colonial regimes, both German and British, first emphasized white settler farming and its labour requirements, sometimes involving efforts to *limit* peasant commercial production.

The 1930s saw a significant switch towards peasant production, relying heavily on coercion and the use of minimum acreage laws. The world depression having hit export prices, and so reduced settler production, the government sought to maintain tax and railway revenues by forcing increased peasant export production. Production increased but not by much.

But after World War II, which involved a return to emphasis on large farms, came a period of really major change.

The post-war period started out with a further intensification of the 1930s use of laws and regulations, though the focus had shifted from increased export production to conservation, erosion control and destocking. A generation of agricultural officers had been much influenced by books like "The Rape of the Earth" and by Tanganyikan examples in it, like Kondoia-Irangi.<sup>12</sup>

All other tendencies, however, were in the opposite direction. The estate sector had access to increased credit, and was mechanizing and shedding labour. This, for the first time, ceased to be in short supply, thus removing one major source of pressure against the growth of peasant commercial production. Commodity prices rose to record levels during the Korean War. The nationalist movement began to gather strength, one source of support being peasant dissatisfaction with enforced agricultural change.<sup>13</sup>

Slowly, attitudes to peasant agriculture changed. The new emphasis was

on development and increased commercial production, rather than preservation. Its aim was to assist the emergence of rich peasants rather than to preserve the dominance of chiefs, even where those involved were the same people. This fitted well with the new "diffusion of innovations" school of agricultural extension, which stressed both the external origin of innovation and the importance of "progressive farmers" as transmitters of innovation.<sup>14</sup>

In some ways, this represented a major advance. Africans were allowed, for the first time, to grow crops like **virginia** tobacco and pyrethrum, hitherto reserved for Europeans. The incidence of coercion and regulation dropped significantly during the 1950s. Peasant commercial production grew more rapidly than ever before or since. Concern with economic farming led to a partial change in outlook from the "traditional peasant" to the "rational economic peasant", another over simplification, but generally an easier one for peasants to live with, especially for the richer than usual "progressive farmers" upon whom assistance was focused.

But the change was only partial, for there also developed a notion of modernization, which asserted the existence and desirability of "modern farming", seen to be in some absolute sense better than existing methods regardless of whether it was economic or not. A number of the settlement schemes of the period before and after Independence involved "close supervision" little short of enforcement, to inculcate "modern" methods of farming which were more often than not uneconomic. The almost exclusive concern of modernisers with externally derived innovation, involving purchased inputs, focused attention away from existing systems. This was particularly sad in that the earlier concern with conservation was beginning to result in some really interesting research, whose impact was thus reduced.<sup>15</sup>

The period since Independence has seen continued development of commercialized agriculture and a continued if not sharpened conflict between the diverse forms of this and the requirements of modernization. The process has proceeded far enough for it to be simply unrealistic to speak of "**subsistence** peasants" in Tanzania. For the rest, while the majority of peasant households produce the major part of their basic food requirements, almost all are dependent on the market for basic tools and consumer goods.

Another important long-term trend has been a decline in the relative importance of livestock and of the influence of those who herd **them**.<sup>16</sup> Prior to the colonial period, large portions of the plains of Tanzania were occupied by pastoralists or by people relying primarily on livestock. Almost all herders of this type rely on systems involving movement between wet and dry season grazing areas. The former lack both grass and water during the dry season, so survival depends on dry season grazing areas which, how-

ever, are usually insufficient to provide year-round grazing. These dry-season grazing areas became the main focus of settlement both by colonials and, far more importantly, by cultivating peasants, a process which continues unabated. Thus pastoralists have seen their grazing lands reduced enormously in size and even more in value, by the loss of their best grazing land. Since the number of cattle is about five times as large as at the turn of the century, it is hardly surprising that over-grazing has become a major problem in many areas; nor that herders have been forced to move into increasingly marginal areas. The areas most seriously affected tend to be those where cultivation and livestock compete for insufficient land, quite often of low and variable rainfall.

Trends in food production point in a different direction; the main surplus has come from areas of steadily increasing altitude and rainfall. In the late nineteenth century millet and sorghum were the major surplus food crops. Handeni, in the coastal littoral, was a major surplus area and thus relatively wealthy." During the colonial period, maize became the major traded cereal, being more convenient (because of lower labour costs) for settler farmers, both as labour rations and for own production. Handeni switched to less drought-resistant maize, suffered a series of famines and sank towards its present position as one of the poorest and most famine-prone areas in the country. While local maize varieties favoured the growth of areas like Ismani and Mpwapwa, the introduction of hybrids since the mid-1960s has implied a further shift to higher rainfall areas. Most of the available hybrids are suited to high altitudes and long growing periods. Improved open-pollinated varieties have been developed, with a broader range of suitability. But neither the state nor farmers have taken much interest in these, since hybrids give higher yields when all goes well.

Trends in tsetse infestation have been more complex. The area infested increased from about 1880 to 1945, since when there has been little overall trend as some areas were cleared while others became infested. Most land cleared has been the result of peasant in-migration for cropping and herding, which has resulted in reduction in tree cover sufficient to eliminate the habitat of the tsetse. Less successful (and far more expensive) have been state/donor programmes, using heavy machinery and/or pesticides mostly for the formation of ranches – which have often been insufficiently intensively run to prevent re-infestation. Least successful of all have been projects (from the 1930s to the mid-1970s) to combat tsetse-fly by grouping people in villages. This has generally had precisely the opposite effect to that intended, reducing human population and production, and increasing forest cover and tsetse infestation.<sup>18</sup>

Another relevant process is *the tendency for commercial production of either cash or food crops to grow in rapid bursts following the opening-up of a new cultivation area*. Ismani, mentioned above, was one of these.

Another was North Iraqw Division of Mbulu District, where, in one decade, less than 150 large peasant farmers with tractors, and a few thousand smaller ones, established the largest single wheat growing area in Tanzania.<sup>19</sup> Another movement spread from the Sukuma "heartland" south of Lake Victoria, westward into previously tsetse-infested land, and southwards into areas of lower, more variable rainfall. Similar bursts of new settlement occurred in Rufiji (1950s), south and west of Moshi and Arusha (1960s to now), Hanang (late 1960s) and Usangu Plain north of Mbeya (still growing). In most cases, the new settlers use tractors or oxen. Cultivation is usually extensive, for with land "free" to the first cultivator, it is important to get in there fast and grab as much as possible. This often involves soil-mining practices and so soil exhaustion and/or erosion. Since current land-tenure arrangements provide neither protection against land-grabs, nor long-term security, such forms of cultivation can be expected to continue and through their low cost to undercut more sustainable methods.

## POST-INDEPENDENCE TRENDS IN AGRICULTURAL PRODUCTION

About 85% of Tanzanians are peasants, producing for cash and own subsistence on small farms. The major proportion of their time and land is devoted to production of food crops for their own consumption or non-official sale, about which, for obvious reasons, no records exist. The figures presented below thus refer only to export-crop production and that small proportion of food-crop production which passes through official markets. In the latter case, the figures almost certainly understate the growth of total production, because the proportion marketed officially has declined.

No-one knows with any degree of certainty either the level or the trend in per capita food production. Estimates of total cereal production vary by a factor of three or four and trend estimates are certainly no stronger. My own "best guess" would be that per capita food production has been more or less maintained at the national level, though with variations between years and regions. What is not in doubt is that officially marketed production of both food and export crops has declined.

### *Food Crops*

Table 5.1 shows official purchases of food crops from 1970 to the present.

The most obvious feature is the wide inter-annual variation about a declining trend. Official markets aim to feed the urban population, which has been growing at 8–10% per annum over the past fifteen years. So while total deliveries are about 60% of the 1970 level, per capita deliveries have

Table 5.1. *Official purchases of major food crops, 1970–85 ('000 tonnes)*

Year	Maize	Rice	Wheat	Sorghum & Millet	Cassava	Beans
1970/1	186	63	43	0	0	0
1971/2	43	46	57	0	0	0
1972/3	106	49	47	1	14	0
1973/4	74	40	28	4	19	0
1974/5	24	15	14	4	18	0
1975/6	91	12	25	5	17	0
1976/7	128	15	23	21	20	12
1977/8	213	36	35	70	37	31
1978/9	220	35	28	99	64	28
1979/80	162	31	27	38	44	34
1980/1	104	13	27	21	8	16
1981/2	90	14	25	10	9	14
1982/3	86	25	31	4	19	10
1983/4	71	27	28	6	31	8
1984/5(est)	93	29	32	11	46	12

declined to a mere 15–20%. On the face of it this would seem to indicate a drastic fall in total production and a catastrophic fall in urban consumption.

In fact, it indicates neither, but rather a major shift away from sale to official purchasing agencies to sale through unofficial channels. Availability of food in the towns has deteriorated, but not by anything like 80%. The difference has been made up by unofficial purchases and imports. Imports now account for over three-quarters of the total official cereal supply, but since the urban population has expanded to about four times the 1970 level, the growth in unofficial purchases is probably still greater.

Trends and variation in official deliveries can be related to prices and weather respectively. From about 1968, official producer prices of food crops were allowed to decline, partly through failure to take account of inflation, but also because Tanzania was then self-sufficient and with local prices well above export parity, exports involved losses to the government.

Deliveries declined, with the exception of 1970/1, an exceptionally good harvest year, with further downward pressure from villagization and poor climate in the period 1973–75. This provoked the state to increase producer prices and to purchase millet and sorghum on official markets for the first time, which led to the rapid increase in deliveries up to 1978/9. Rising costs, consumer price control, and failure to adjust for inflation, led to declining producer prices, this time exacerbated by serious shortage of consumer and producer goods and deteriorating physical performance of the marketing agencies. By the early 1980s, deliveries had been reduced to a

Table 5.2. NMC regional maize purchases 1972–85 (tonnes)

Year	Iringa	Mbeya	Ru- vuma	Rukwa	"Big Four"	Aru- sha	Dodoma	Total	" B Fas % of total
1972/3	8.2	0.1	0.5	0.0	8.8	17.3	54.1	106.5	8.2
1973/4	11.2	1.4	0.1	0.0	12.7	7.0	34.5	73.6	17.2
1974/5	4.2	0.7	4.3	1.0	10.3	2.9	0.0	24.9	41.3
1975/6	10.5	2.2	12.7	3.0	27.4	10.1	6.0	91.1	30.0
1976/7	14.7	6.6	10.2	12.0	43.5	11.8	11.9	124.0	35.0
1977/8	20.9	9.8	16.1	9.9	56.6	60.3	19.3	213.3	26.5
1978/9	26.9	7.2	25.7	5.1	65.0	69.9	37.1	222.3	29.2
1979/80	26.3	6.4	17.8	15.9	66.4	47.4	27.1	161.2	41.1
1980/1	21.8	5.4	14.0	17.8	59.0	17.4	23.7	104.6	56.4
1981/2	33.1	7.1	21.1	16.0	77.3	3.2	4.4	89.4	86.4
1982/3	26.1	9.5	22.8	17.6	76.0	1.2	1.5	86.0	88.3
1983/4	25.1	7.7	12.9	10.1	55.9	6.3	5.3	71.0	78.7
1984/5	26.2	11.7	22.7	13.3	73.9	6.6	7.6	93.3	79.2

Note: "Big Four" (BF) is the term often used for Iringa, Mbeya, **Ruvuma** and Rukwa.

basic minimum coming partly from state farms and partly from areas, which were so far from markets that the official price could compete with the unofficial.

There has also been a major change in the structure of production. In 1970, almost all wheat was produced privately, much of it by peasants in Arusha Region. Now almost all deliveries come from a complex of large Canadian-supported state farms. Private production ceased because of low prices, nationalization of large farms, villagization of rich peasants and absence of equipment and spare parts. Much the same has been the case for rice, though mechanization is less important and instead of disappearing, peasant production has been diverted to private unofficial markets (less important for wheat because of factory-scale milling).

For maize, peasants produce by far the major portion of deliveries and the shift has been geographical, as shown in Table 5.2. Recent reports about the Tanzania food situation, often refer to the four Southern Highlands regions as Tanzania's "traditional" maize-surplus areas. As the table shows, this is wrong. Until the early 1970s, Iringa was the only major maize producer among the four, other major surplus regions being Arusha, Kilimanjaro, Morogoro and Dodoma. As recently as 1979, Arusha delivered more maize to The National Milling Corporation (NMC) than the four Southern Highlands regions combined. Since then, maize from Arusha has gone almost exclusively to the unofficial market, including smuggling to Kenya. So long as "panterritorial pricing" (see below) continues, it seems

Table 5.3. *Net imports of major grains, 1966/7–1984/5*

Year	Net imports by volume (tons)				Total \$mn	Food aid as % of total imports		
	Maize	Rice	Wheat	Total		Maize	Rice	Wheat
1966/67	7	6	0	13	1.5	—	—	—
1967/68	—1	5	13	17	1.8	—	—	—
1968/69	—32	0	37	5	0.6	—	—	—
1969/70	22	0	36	55	3.0	—	—	—
1970/71	—24	—1	12	—13	—1.0	—	—	—
1971/72	63	—4	45	105	5.6	—	—	—
1972/73	79	—7	8	80	2.9	—	—	—
1973/74	291	66	91	447	80.6	—	—	—
1974/75	225	14	29	269	41.2	—	—	—
1975/76	107	21	61	189	29.3	25	0	75
1976/77	42	5	34	81	10.4	16	0	100
1977/78	34	49	41	124	29.7	100	44	100
1978/79	0	41	62	103	22.2	0	48	74
1979/80	33	55	33	120	30.8	0	90	100
1980/81	275	65	49	389	70.6	31	78	100
1981/82	235	70	83	388	99.6	88	84	100
1982/83	(160)	(117)	(33)	(310)	—	—	—	—
1983/84	253	56	45	354	—	31	100	100
1984/85	239	94	51	384	—	29	27	100

— = not available.

likely that large amounts from the northern areas will be sold to the NMC only in years of bumper harvest in both Tanzania and Kenya (as, for example, 1985/86).

Among the major functions of the official marketing system is to keep the urban areas and institutional market supplied with basic foodstuffs. Decline in local deliveries has thus led to increased food imports, as shown in Table 5.3. The table shows that 1972/73 was a major turning point. Until then, net maize imports had been small and imports of rice negligible. Between 1972/73 and 1973/74, cereal imports increased by over five times in volume terms and *almost thirty times* by value. Since then, the cost of food imports has been significantly reduced by food aid and by a fall in world cereal prices from the very high levels of 1974–76.

To summarize, food procurements have certainly failed to keep pace with urban demand for food. Urban growth has been among the highest in Africa, and average incomes are well above those in the rural areas.

Table 5.4. *Tanzania: exports of major crops 1960–84: volume (tonnes) & value index (1969=100)*

Year	Coffee	Cotton	Sisal	Cashew	Tea	Tobacco flue- cured	Pyre- thrum	Total value index
1960/1	27.0	89.9	198.0	40.0	4.4	1.6	1.3	
1965/6	44.7	231.3	225.1	74.3	6.8	3.6	4.4	
1970/1	46.7	223.8	181.1	112.5	9.2	8.8	2.7	100
1971/2	52.4	193.5	156.8	126.0	11.6	10.6	4.3	130
1973/3	47.5	225.7	155.4	125.5	13.3	10.8	4.0	138
1973/4	42.4	188.4	143.4	145.1	12.3	15.3	3.3	154
1974/5	52.1	206.5	120.5	118.9	13.9	11.9	4.7	106
1975/6	55.4	122.9	113.7	83.7	13.1	14.5	4.2	175
1976/7	48.8	194.0	104.8	97.6	15.2	18.4	3.6	190
1977/8	51.9	150.5	91.9	68.4	18.5	17.1	3.7	132
1978/9	57.8	166.6	81.3	57.1	17.6	17.3	1.6	124
1979/80	47.9	180.5	86.0	41.4	17.3	17.2	1.4	85
1980/1	66.6	174.8	73.8	56.6	16.3	16.8	1.7	85
1981/2	54.8	134.3	60.6	44.3	15.5	16.1	1.2	
1982/3	53.8	129.1	46.2	32.5	17.6	13.6	1.7	
1983/4	49.7	140.4	38.4	48.4	11.9	11.0	1.4	
1984/5(est)	53.0	152.9	56.0	50.0	15.0	14.0	2.0	

Sources: Hali Ya Uchumi, 1983. *Daily News*, Budget No. 1985.

Consumer subsidies on maize meal and other cereals up to 1983 further helped to increase urban demand. Shortages then led to bidding up of prices on unofficial markets, reduced deliveries to the NMC and on, in a vicious spiral, to still larger disparities between official and unofficial prices.

### *Export-crops*

Table 5.4 shows trends in exports of crops by volume and an index of total value, indicating that both amounts and prices have contributed to the problem.

The most striking cases are cashewnuts, cotton, sisal and pyrethrum, for which current exports are well below the levels of the mid-1960s.

*Cashewnut production* grew rapidly from the 1950s until 1973, since when it has declined steadily and rapidly to a level just above that of 1960. The most likely reasons for this are those proposed by Ellis<sup>20</sup>; relative prices and the effects of villagization, when large numbers of producers were moved away from their cashew trees. Directives ordering peasants to weed their cashew trees, on pain of fines or jail sentences have probably made the situation worse.



Cotton production grew slowly from the turn of the century until 1945. The return to labour was poor and periodic compulsory campaigns seldom increased production for more than a few years. For two decades, from the late 1940s, growth was steady and rapid, starting with high Korean boom prices and expansion of the major growing-area in Sukumaland to the south and west, assisted, after Independence, by increased availability of credit and tractors.<sup>21</sup> Extension campaigns for intensification had no discernible effect.<sup>22</sup> Growth slowed down in the late 1960s and decline started in the early 1970s. Sukumaland suffered from an energetic villagization campaign, and from crop-failures in some of the new settlement areas, exacerbated by low and falling producer prices and the change from cooperative marketing to crop authorities. As the decade drew to an end, non-availability of consumer goods, inputs, tractor-spares and fuel, together with increasing disorganization of marketing and processing, hastened the decline. Compulsory campaigns to expand the cultivated area and increased use of fertilizer and insecticide, seem to have had further negative effects.

Cotton's low value per labour input makes it especially vulnerable to relative price changes – such as occurred in the mid-1970s in favour of food crops. It also implies relatively little "fat" in the marketing system. Cotton cooperatives seem always to have major problems of inefficiency and corruption, compared with those handling coffee (in Kenya as well as Tanzania). Put crudely, the price of coffee is high enough for marketing officials to take their cut and leave some for the farmer, which is not the case for cotton. Monocropped cotton leads to soil depletion and acidity, this being quite advanced in some of the older cotton areas. With world-market prospects also poor, it is far from clear that Tanzania should focus on cotton in the long run.

Sisal is grown almost entirely on large plantations. Production peaked in the early 1960s, and has been bedevilled since then by low prices owing to competition from synthetics. Many of the private estates were nationalized in 1967, as much to prevent them from going out of business as anything else. This did not prevent further production decline, especially from the mid-1970s when failure to replant began to show.

Tea and tobacco follow a slightly different trend, with production peaking towards the end of the 1970s, and stagnation since then. Poor producer prices in relation to the high labour input and cost of inputs are said to be the main reason, with the latter two increased for peasants by intensive methods imposed on producers in managed schemes.<sup>23</sup> Both crops have been seriously affected by fluctuations in the supply of credit, both being major input-users.

For coffee, Tanzania's major export-crop, there has been no significant trend in production since 1970. With the EEC funding a programme for coffee improvement for several years, the record harvest of 1980/181 was

claimed at the time to indicate its effectiveness. Subsequent results indicate otherwise. But, most likely, more coffee is produced than is sold officially. Much is produced near to the Kenya border and some doubtless smuggled over it.

## AGRICULTURAL POLICY AND ITS IMPACT

Agricultural production for official markets has clearly fallen in Tanzania during the past fifteen years, and policy factors have evidently been among the reasons for this, producer prices, lack of goods to buy, villagization and arbitrary directives being among the more significant. The following section takes the argument further, looking both at the effects of particular policies and how they arose.

### *Agricultural pricing policy*

Official price policy is said to have favoured food crops since the mid-1970s and this has been held responsible for falling export-crop production. But the real incentive to substitute food for export crops is more likely to have been the difference between the official price for export crops and the *unofficial* price of food crops. This has more to do with their respective markets than with government policy. Unless smuggled abroad, there is little that can be done with coffee, cotton, cashewnuts or tea, except sell them to official marketing agencies. For food crops there is always an alternative. This in turn limits the degree to which official food prices can be reduced, if the official agencies wish to purchase anything.

Beyond this, the argument is divided into two parts, one stressing the impact of exchange-rate overvaluation, and thus the need for devaluation, the other concerning itself more with the high marketing margins charged by the crop authorities which have had a state monopoly over crop purchase. The case for devaluation is now widely accepted, though it remains to decide by how much to devalue, and then to take the difficult political decision to do so, adding to the rate of inflation when prices are already sky high. The case for cutting official marketing margins is universally agreed, but easier said than done (see below).

Pan-territorial pricing is a different issue, in that it derives intentionally from policy, rather than being an effect of inefficiency and failure to devalue the currency. Among the components of Tanzania's socialism, the notion of regional equalization has always been strong. During the 1960s, equal prices were paid for crops at regional level. When crop authorities took over from cooperatives and purchased crops direct from villages, equal prices were paid at the village level (known as "pan-territorial pricing").

After the food shortage of 1974–75, there was a major push to increase official purchases of foodstuffs. This involved increasing producer prices and extending the areas from which food crops were officially purchased and the range of crops purchased (to include sorghum, millet and cassava). In this context, the impact of pan-territorial pricing was greatly increased and a number of new producing areas brought into the national system.

Where most of the other policies considered here have been expensive failures, pan-territorial pricing has been an expensive success. It aimed to increase deliveries of produce from areas distant from Dar es Salaam, and achieved just that. But since this also involved lower prices to, and deliveries from, areas closer to Dar es Salaam, the result was a major increase in aggregate transport costs and a reduction in total **deliveries**.<sup>24</sup>

Pan-territorial pricing clearly involves major costs. But one encounters a major inconsistency in the thinking of critics like the World Bank. On the one hand, they are highly critical of the policy and have pressed for its repeal. On the other hand, they accept the new spatial structure which it has generated, and implement policies in its **support**.<sup>25</sup> A major obstacle to ending pan-territorial pricing is that its existence and the production generated by it, have also built up political pressures for its retention. One of the more important things which a politician can achieve for "his" region is higher crop producer prices. Rukwa and Ruvuma are well represented in this respect.

### *Cooperatives and crop authorities*

One can hardly discuss pricing and marketing policy without considering the development of the institutions concerned, cooperatives, marketing boards and crop authorities, which have had statutory monopolies for most agricultural marketing for much of the period since Independence.

During most of the colonial period, primary agricultural marketing was in the hands of private traders. It was not competitive, since only licensed traders could operate and the colonial authorities normally only licensed one trader for a given area. During the 1950s, this pattern changed in three respects. Licensing grew less rigid and competing traders were allowed. The growth of cooperatives was encouraged and proceeded **rapidly**.<sup>26</sup> With the exception of cotton, the marketing boards and regulations set up during or after the War, were allowed to slide into disuse.

Where the colonial government had seen the growth of cooperatives as a means of supporting peasant commercial production, while diverting the energies of rising Tanzanians away from politics, the Independent Government saw it rather as a means for the implementation of development programmes. Further growth of cooperative societies and unions was **en-**

couraged, including movement into food-crop marketing. They were also the focus of a number of credit, input-supply and tractor-service programmes. This, in turn, implied a major increase in the quantities of funds and materials passing through the cooperatives and, given their relatively weak accounting procedures, provided opportunities for personal enrichment and institutional impoverishment through corruption. Already by the mid-1960s, this was causing problems and marketing margins were rising, prompting various consultants and a special committee to call for limiting the scope of their activities to marketing.

However, in the post-Arusha period, the government had more ambitious plans for cooperatives as "socialist" institutions and continued to expand their geographical and sectoral scope and to draw them into state development policy. This accelerated the process whereby regional cooperative unions increasingly became parastatal institutions at the command of central and regional state authorities. The nationalization of wholesale trade from 1969 onwards threw a further burden on to them, while at the same time they were being increasingly pressured to operate tractor-service schemes for **ujamaa** villages (at their own cost) and to perform other activities defined for them from outside.

Not surprisingly, morale declined as these extra activities put downward pressure on crop producer prices and as cooperative committees continued to use their position to enrich themselves. By 1975, when the cooperative unions were abolished in favour of crop authorities, there was little popular complaint. Not that there was any reason to expect the latter to be any better. The marketing boards had for years been criticised for inefficiency and high costs.

The thinking behind the setting-up of crop authorities, as the expanded marketing boards were known, came, as did so many other Tanzanian institutional policies of the time, from the American management consultancy firm **McKinseys**. The idea was that each authority should have overall charge of the crop(s) for which it was responsible, not only purchasing, processing and selling it but providing credit and extension, operating innovation campaigns and investing in processing facilities. Thus the producers of a given crop would pay for "development" through deductions from the producer price, it being assumed that the benefits would outweigh the costs.

The first effect was disruption of the flow of produce. The change had been made in haste, without proper preparation, and the crop authorities lacked transport, facilities and cash for crop purchase. But even after the initial phase, marketing margins continued to increase and real producer prices, especially for export crops, to fall. Excessive centralization was part of the problem. Inefficiency and corruption were others, increased by the passage of large quantities of foreign aid funds through the authorities as

part of their "developmental" function. Procedures for price-setting turned producer prices into a residual after authority "costings" had been (generously) covered. But such was the level of waste, corruption and cost overrun that, even then, nearly all of the authorities built up huge deficits.

For food crops, the situation was more complex, since the statutory monopoly was less effective. Even in the 1960s, more food crops were sold privately than through official channels, despite the fact that this was mostly illegal. This proportion was much increased by the food shortage of 1974-75 and then by the problems and inefficiency of the National Milling Corporation which took over food crop marketing, as a crop authority in all but name.

Under any circumstances, an official monopoly agency purchasing food crops from peasants faces major problems. A significant proportion of the total crop is produced mainly for subsistence and for most families this will take priority. Thus the "surplus" available for sale will fluctuate far more widely than the crop. Where (as almost always) an unofficial market coexists, its prices will tend to be higher than those on official markets, but more importantly will vary, seasonally and from year-to-year, with supply and demand. Thus in poor harvest years, unofficial prices rise (official prices being fixed before the season begins), attracting a greater proportion of the reduced harvest away from the official agency. In years of bumper harvest, by contrast, unofficial prices fall, often below the official level, resulting in a flood of produce for which the agency is ill-prepared and has insufficient transport and storage.

In addition to this, the NMC was not an efficient agency. Delays in collecting produce stretched for months and sometimes even years. Delays in paying for it were generally longer. Due to a combination of inefficiency and government price policies, the NMC also accumulated a deficit so huge as significantly to increase the national rate of inflation.

To summarize, monopoly agricultural marketing and the tendency to load non-marketing (and cost-increasing) functions upon marketing agencies, have increased margins since the early 1960s. This had its main negative effects on crop deliveries during the 1970s for a number of reasons. Earlier reductions had already cleaned any "fat" from producer prices. The "whirlwind of structural change" of the 1970s and consequent disruption, made any given marketing structure likely to operate worse than before. Crop authorities were even less easy to control than the supposedly independent cooperatives had been, so that marketing margins rose still higher. Finally shortage of goods, partly as a result of monopoly wholesale trading (but also due to foreign exchange shortage) began to bite seriously.

*Industry and agriculture*

A significant part of the fall in real agricultural prices derives from the high price and non-availability of goods for purchase from other sectors. So it is worth considering briefly, the development of agro-related industry.

As is widely forgotten nowadays, the Arusha Declaration proposed that Tanzania should reduce the emphasis on industry and concentrate on peasant agriculture. What happened was almost precisely the reverse, with industrial investment increasing from 1969 until the late 1970s. The change is not hard to understand. Most Tanzanian decision-makers see industrialization as crucial to, or even synonymous with development. Nationalization of the "commanding heights" under parastatal corporations led to further strong pressures for expansion.

Moreover, nationalization, apparently paradoxically, increased the interest of foreign firms. These had not been interested in investing own funds in Tanzania up to 1967. But providing materials, services and management to nationalized firms, under *loans* guaranteed both by the Tanzania Government and their own national agencies, was virtually riskless and more profitable. More problematically for Tanzania, it meant that the foreign firm had no direct interest in the profitability of the undertaking, since loans have to be paid regardless. Their parastatal partners were anxious to maximize growth and had influence within, and access to, funds from the state. Incipient or actual losses could thus be covered by subsidies, grants and price increases, the latter assured by local monopoly and external protection, both parts of the strategy previously intended to attract foreign private investors.

What emerged was a high-cost, import-dependent series of industries, whose impact on agriculture was worst precisely where, according to received theories, it should have been most positive. It is often asserted that the role of industry in agricultural development is to provide necessary inputs and equipment and to increase value-added by processing its products. The concealed premise in this is that local industries should perform these functions more cheaply and better than before. But this has seldom been true in Tanzania. A fertilizer factory in Tanga produces an inappropriate selection of fertilizers at well above the import price and has still relied heavily on further subsidies. The protection imposed when the local Ubungo Farm Implements was set up considerably worsened the supply of basic tools for agriculture, exacerbated by the way in which the monopoly agencies controlling imports performed their jobs. Processing factories seem as often to have subtracted from as added value to crops, and in so doing have contributed to price reductions to producers.

Nor have developments in the *trade sector* been helpful to agriculture.

The nationalized-import-export firms were organized, with the help of McKinseys, into a highly centralized corporation, whose cumbersome procedures had already begun to produce shortages by 1970. Subsequent reorganization have not improved operation. By the end of the 1960s, most internal wholesale trade was also taken under government, regional or cooperative control. The system of "confinement" (limiting trade in specified goods to one specific agency) has also contributed significantly to delays and shortages. Since then, the situation has been made worse by lack of foreign exchange and by rigid, arbitrary systems for allocating what foreign exchange there is.

### *From Ujamaa to villagisation*

The compulsory resettlement of most of the rural population in villages between 1970 and 1976 had both short- and long-term negative effects. But the original paper, proposing *ujamaa vijijini* as Tanzania's means to achieve rural socialism, had specifically stressed persuasion, gradualism and cooperation, rather than resettlement and compulsion.

The most important reason for the transformation of ujamaa from voluntary cooperation to compulsory villagization seems to have been its definition as *policy*. Once defined as government policy, ujamaa became the responsibility of government and party leaders to implement and demonstrate that they had been doing so. This led directly to a concern with the number of villages and villagers, since this was easier to implement and to demonstrate than the degree of cooperative production. This, in turn, introduced a competitive dynamic. One Regional Commissioner would announce that (say) three ujamaa villages had been formed in his Region. Another that five or more had been formed, and so on. Within a couple of years, there were "campaigns" for whole districts and even **regions**.<sup>27</sup>

"Persuasion" initially took the form of offering services to those willing to move – here piped water, there a dispensary, in another case a tractor or free tractor-services. But this became increasingly difficult to afford as the number of villages increased. Thus it began to be replaced by direct compulsion.

Then in late 1973, President Nyerere reversed his former position stating that all the rural population should be in villages within three years and that, since voluntary persuasion had "failed", compulsion could be used to move people into villages – though not to force them to produce communally. This set off a further burst of "campaigns" and "operations" (the military terminology is significant) in which state force was used to move people and often to smash their previous houses to ensure that they did not return when things had quietened down. While three years is a short enough time to

move most of the rural population, true to the spirit of competition (socialist emulation ?) which had built up, many authorities found it still better to villagize within one or two years. Thus the bulk of the operation was completed within 1974 and 1975, undeterred by a poor harvest in 1973 and food shortage which would have been serious even without villagization.

Some writers on Tanzania claim that **villagization** did not contribute significantly to the food shortage. I fail to see how movement to new and often unknown areas with different soils, water availability and disease patterns, together with the necessity to build new houses, clear new plots from the bush and generally get the rhythm of life and production going again, could fail to have a serious negative effect. And this does not even take account of the significant number of cases where villages were very poorly sited in relation to soils and water, where household plots were far too small, or where people's main fields were distant **and/or** vulnerable to vermin.

The longer-term negative effects of villagization have already been mentioned. They include increased travelling time to and from fields, over-cultivation of fields close to the village, greater distances to collect firewood and drinking water. All of which has both increased labour requirements and had negative effects on soil fertility. For the next few years, however, this was rivalled in terms of labour-time requirements by another factor.

## **Directives**

Nucleation made the rural population more easily available to government services and orders, while the process had mobilized "leaders" for a continued "policy input". Moreover, again with the guidance of **McKinseys**, local government had been "decentralized", giving more power to regional political authorities, which now had charge of officers from "functional" ministries, like agriculture and water. But there was not enough money for investment or provision of services, so, in the meantime, orders predominated. From the president himself, down through cabinet ministers, regional and area commissioners, government and party leaders there issued a deluge of "directives" concerning everything from drinking and travel, to the area of specific crops which should be cultivated and the means to be used for this. These were aimed at increasing production by combatting "laziness" and drunkenness (on local beer, not the bottled variety which the leaders drank). Alternatively one could see this as the use of force to compensate for reduced incentives (declining producer prices) and reduced morale from the effect of villagization and the directives themselves.

This may seem to have represented a return to the colonial policies of the 1930s. But with far more persons involved, with the concurrence of villagization and with "politics in command", its impact was far greater. Lead-



ers whose knowledge about agriculture, economics or the constraints of peasant farming were minimal, felt free, indeed obliged, to issue directives, to show their commitment. A significant proportion of Tanzania's agricultural extension advice was already of dubious value to peasants. Its further simplification into directives further increased the proportion which was irrelevant or technically incorrect.

There is a current tendency to discount the impact of this on agricultural production and to concentrate almost entirely on producer prices. In my opinion this is dangerously wrong. Apart from the considerable waste of time **and/or** energy involved in **either complying** with or evading directives, they appear to have contributed significantly to a decline in morale: a feeling that whatever one does to try to organize one's life sensibly, some clown in office will come along and mess it up. Production appears to have declined most rapidly for those crops where directives were most widely used in an attempt to increase it (cotton and cashewnuts). The prevalence of directives (and of punishments for failure to comply) has also been cited as among the causes of increased drunkenness in some rural areas, though, by the nature of the case, this is not susceptible to proof.

#### *State farms and ranches*

While there are a number of state farms in Tanzania, they have never been a major part of the country's agricultural policy as, for example, in Mozambique. With the exception of a number set up in the period between 1969 and 1975 on "political" grounds, they have mostly originated as foreign aid (or colonial government) "projects", attached to one or other parastatal corporation. State ranches and dairy farms were built up under World Bank assistance (and have mostly collapsed since it ended). The wheat farms are CIDA assisted and rice farms have been assisted by a variety of donors, especially the Chinese. Many sisal plantations were nationalized in 1967, as much to prevent their demise in a period of low prices as for specifically socialist motives. A number of these have recently been offered for sale, because of the total disarray of the Tanzania Sisal Corporation.

Few, if any, state farms have covered their full costs, including those which are technically efficient. Only for wheat and rice do state farms produce a major proportion of (officially) marketed production and this is less a credit to the state farms than a reflection of the impact of policy on peasant deliveries. This said, Tanzania has probably spent no more on state farms than countries making no claim to be socialist. The expansion of state farming owes more to pressures within the parastatals (and the availability of aid funds) than to state policy.

### *Crop improvement programmes<sup>28</sup>*

Among the major purposes in setting up crop authorities was that they should implement and coordinate programmes for intensifying production of food and export crops, and the 1970s saw a large number of such programmes. As the figures in the previous section show, none was successful, with the partial exception of the National Maize Programme (World Bank funded). The programme itself was generally reckoned to be a failure. But in conjunction with pan-territorial pricing, it provided the credit and back-up for a major geographical shift in maize production to the Southern Highlands. As indicated above, this has been a mixed (and expensive) blessing.

Otherwise, there is no evidence of success at all. The World Bank funded the building of ten new cashewnut processing factories and a campaign to increase production. Since the latter fell rapidly and continuously, most of the factories are unused today. The World Bank also funded a new pyrethrum factory in the Southern Highlands, and the EEC a programme to increase production, again without success. Cotton was subject to several programmes to increase use of insecticides and fertilizer, to no avail. The EEC has been implementing a "coffee improvement programme" through several phases, without much evidence of increased production, and there were also programmes for tea and tobacco.

To some extent, these programmes suffered from the change and disruption which had resulted from villagization, decentralization and changing to crop authority marketing, together with a persistent tendency on the part of local officials to interpret all advice as orders, to be issued as compulsory directives. But the programmes themselves almost certainly made the situation worse. Even if they did not envisage orders and directives, they started from the assumption that the technical answers were known and needed only to be transferred to the peasants. The increase in functions loaded on to new and weak crop authorities certainly assisted their further breakdown, while the large amount of money and materials involved made corruption worse. It also increased the proportion of farm inputs and other materials which were distributed on the basis of "policy" with the effect that some peasants who were not interested in inputs were forced to accept (and pay for) them, while others who were crying out for them went without.

### *External factors*

Given the above list of domestic policies, it may seem unnecessary to consider external factors, but that would be seriously wrong, for they seem consistently to have encouraged the most wasteful and counterproductive

aspects of Tanzanian policy. Foreign capital declined to risk its own funds, but assisted the Tanzanian Government in a spending spree on borrowed money. The "whirlwind of structural change" of the 1970s was largely thought up by foreign firms and donors. The enormous increase in international food prices came just in time for Tanzania's worst food deficit to date, while the easy money of the following years enabled the Government temporarily to ignore its implications. Finally, since 1979, with money tight and a constant situation of crisis, the terms of World Bank and IMF conditionality may well have made it more difficult for Tanzania to "back down", since it was being ordered to do so in such unmistakable terms.

## RECENT POLICY

Nonetheless, there have been significant changes in policy during recent years, although crisis management has, of necessity replaced long-term development in practice if not in theory.

The view from the outside is that not much has changed, that the state still retains its formal control over the economy and that conditions for structural adjustment loans from the IMF and/or World Bank have not yet (Spring 1986) been fulfilled. But, whether or not the rumours of shortly forthcoming agreement on this score are true, there have been significant reforms although major ambiguities remain.

Most of the decentralization of 1973 has now been reversed. Ministries have regained (some) control over their regional personnel and District Councils have regained their elected members. Agricultural primary marketing has been returned from crop authorities to cooperatives. Various versions of the cooperative legislation give different degrees of control to the political party and this remains a serious problem if they are to regain their positions as marketing agencies, since the Party is more inclined to stress production and non-marketing activities.

Similar ambiguity surrounds a variety of other measures of "liberalization". There has, as yet, been no relaxation of the state and state agency monopoly of agricultural product and input marketing, though an increasingly blind eye is turned to private trading. An innovation of late 1984 allowed those with "their own" foreign exchange to use it to import with "no questions asked" about where it was earned. On the other hand, this privilege remains insecure and Nyerere has threatened (as President) and advised (as ex-President) its withdrawal.

The above have been policy-changes which break with the previous line but are generally popular. But some of the other changes have been more

difficult. There has been a sharp cutback in new investment, though this mostly reflects the unwillingness of donors or lenders to supply finance. A number of different "structural adjustment" plans and proposals have been produced, with the dual aim of improving the state of the economy and persuading the World Bank to release a structural adjustment loan. A number of measures have been taken to reduce the size of the bureaucracy, to cut military and civilian state expenditure and to cut urban food subsidies. None of these has been an easy or popular decision.

One problem with the above is that it is very difficult for all concerned to gauge how large and secure the changes are. To a considerable extent, initiative has now been largely thrown to the various private sectors. The state is increasingly accepting tacitly that there are areas of the economy which it cannot control. But the private sector is far from developed and its members have been pushed into short-term profit-making by insecurity. It is, moreover, very far from being competitive, and further privatization, under existing conditions would most likely benefit the politically well-placed without increasing the degree of competitiveness. Given that Tanzania's legal system is not set up to cope with such problems, it could give rise to a rush on land and other resources. There is also the major problem that a "shortage economy" now exists and can be extraordinarily difficult to get rid of, without large amounts of funds to "flush through" the various markets. Even if Tanzania does get bridging finance, it is unlikely to be of the order required for this. Even if it were, the Tanzania state would be as likely to use it for further investment as for increasing the availability of incentive goods and improving their prices. Tanzania needs foreign finance, but not too much.

## CONCLUSIONS

Agricultural export production has declined over the past decade, and this, combined with falling real export prices has had disastrous effects on the balance of payments. These have been exacerbated by increasing food imports, for while it is unclear what is happening to food production, deliveries to the towns are clearly failing to keep pace with urban demand for basic **staples**.<sup>29</sup>

It is fairly obvious that state policies (among other things) have been instrumental in bringing this state of affairs about, but it is worth distinguishing between two different sorts of effects. Firstly, state policies cost money (wages, transport, materials, buildings, etc.) which must eventually come mainly from the peasantry, as by far the largest productive sector. The extraction of revenue and the means for its extraction affect producer prices, returns, real incomes and incentives, as well as the physical **availabil-**

ity of inputs and consumer goods. Secondly, one has the direct effects of the policies themselves.

There is a current tendency to focus almost exclusively upon one aspect of the former, the real producer price for crops. In consequence a large proportion of donor policy (and conditionality) is primarily aimed at "getting the prices right", through devaluation and privatization of trading, which, it is claimed, will increase competition, lower margins and increase real producer prices.

Given that the black-market rate for foreign exchange is up to ten times the official rate, some reduction in the degree of price-distortion is clearly needed, though there is disagreement about the degree of devaluation required and its effects on incomes. Privatization is a more complex and contentious issue. **Torben Rasmussen**<sup>30</sup> has questioned whether official recognition of existing black-market traders would really lead to reduced margins. More generally, privatization in Tanzania would almost certainly be to a few selected licence-holders and certainly nothing approaching a free market.

But more relevant, for the present, is to consider the direct effects of state policy towards agriculture, since there is little evidence that lessons from the past decade have had much impact here. The level of direct coercion may have been reduced in recent years by lowered morale and lack of transport, but there is no indication that it has been rejected as policy. Given that new crop improvement programmes seem very similar to previous ones, that both assume that the experts know all the answers, that export crop prices are unlikely to reach high incentive levels in the coming year, and that the state remains desperate to increase revenue and foreign exchange receipts, a reversion to higher levels of coercion is not at all impossible.

It is therefore important to stress the negative effects of agricultural development through coercion, and specifically those affecting the level of production. Personally I am in no doubt that a coercive agricultural policy has a direct negative effect on the quality of life and that the coercion of the mid-1970s took forms and reached levels which would be considered an outrageous intrusion into the rights of the individual in most Western countries (except for specifically disadvantaged sections of the population). But I am only too well aware that such "moralistic" arguments cut little ice with developers and policy-makers. It is therefore worth stressing how this coercion consistently leads to misspecified policies which have to be enforced for that very reason and obstructs criticism and revision of such policies, since the problem is defined beforehand as being one of peasant obstinacy and conservatism. It is true that for the coming years, a high proportion of agricultural policy implementation is likely to be donor-funded and that most aid-donors shy away from direct implication in

coercion. But they have also shown themselves powerless to stop such practices.

It is not just coercion, however, which is the problem. There are serious economic problems with many crop improvement programmes, ranging from subsidies on inputs and transport to the encouragement of **mono-cropping**, and with a general tendency to introduce agricultural systems which are non-sustainable in a variety of different ways. They may depend on far more effective delivery systems for goods and services than are at all likely to emerge. They may involve costs in excess of returns (when the subsidies are removed) and they may involve production systems which fail to maintain soil fertility. In addition, crop improvement programmes often involve precisely those local institutions accused of increasing marketing margins, not to mention many of the activities which increased them. There is therefore a certain inconsistency in calling for reductions in revenue collection and freeing of markets while at the same time proposing programmes requiring parastatal organizations and their revenue-raising **monopolies**.<sup>31</sup>

### *Development and modernization*

In tracing the development of agriculture, it is striking how often one of the major underlying problems is "development policy" itself, whether directly or through the costs it imposes. As one looks closer it emerges that much of this derives from a perceived need to control peasant production, based on the widespread notion that peasant farmers cannot be trusted to develop themselves and must be pushed into doing so. This in turn derives from a paternalist ideology of modernization, or development through the adoption of externally-derived innovations – and from the conflicts arising from many decades of enforced policy. Both reinforce the view that peasants are "traditional" and non-responsive to opportunities for betterment.

This part of the ideology is largely myth. All experience shows that peasant farmers are at least as concerned to increase their cash and total incomes as anyone else is for them to do so. Given the opportunities, they will usually grasp them with both hands. But the way in which they do so, adopting selectively, adapting innovations to their requirements and diversifying into other economic activities than the crop or innovation being encouraged, comes into conflict with the notion, common to modernizers, of "modern farming", which is supposed to be absolutely better than traditional methods because it is "scientifically-based". Research station results are seen as demonstrating unambiguously "optimal" methods for peasant farms which differ from them as regards both means and goals.

This is nonsense since, anywhere in the world, farming is a way of making

a living, which implies that it is, at least in part, economically-based. However defined, this implies choices based on prices, climate and other variable factors to achieve a certain income level with given labour constraints. There is no one "best way" of farming. A successful farmer is one who can respond flexibly to opportunities and changes, not one who slavishly follows the advice of the extension service, especially in Tanzania, where extension advice has probably been more often wrong than right.

But there are also real issues between state and peasants. One relates to "economic farming" and the time-period over which this is defined. Those who opened up the Ismani Valley during the 1950s were certainly economic operators and many became rich. But soil-mining has ruined the fertility of the area for many years to come. There are plenty of other examples where herders and cultivators have used land to the detriment of its long-term fertility. But these seem mostly to be a result of land pressure and **land-tenure**. Tanzania's land tenure system has neither controlled land-grabs nor given security to cultivators. Given the strong incentive which this gives towards short-term maximization, regardless of the long-term effect, regulations are unlikely to be an effective means of improving agricultural practice, as has been shown on numerous occasions during and since the colonial period. This is, in any case, not at present a major area of conflict between cultivators and the Tanzania state, which seems scarcely more concerned about the long-term effects than the maximizing rich peasants.

The most basic conflict between state and peasants concerns the extraction of revenue or surplus, and this explains some, but not all, of the tendency of officialdom to ignore or disapprove of peasant production or economic activity outside its approved crops and programmes. For while this generates income for the peasants concerned, it denies revenue to the state – and where it involves exports, foreign exchange as well.

It is not only in Tanzania that African peasant entrepreneurs diversify their activities and straddle the boundaries between production, trading and politics. This is as widespread as the kinship and patronage linkages, which can be equally important in determining both the distribution of resources and the use to which they are put.<sup>32</sup> None the less it seems clear that Tanzania's policies have exacerbated the problem. The combination of state, parastatal or cooperative monopoly, with pervasive party control over these institutions, tends to increase the relative importance of political and patronage linkages. Insecurity over rights to property ranging from land through productive facilities to stocks of produce, encourages short-term profit maximization in diverse activities, over long-term accumulation based on production. Shortages and high margins encourage the diversion of energies into arbitrage and the cultivation of influence rather than crops.

But this is not simply a conflict between "state and peasantry", still less a

class conflict between them. The state is not a class and its extraction of revenue does not correspond precisely to any form of class exaction. All would agree on the necessity of some state expenditures, such as on economic and social infrastructure, at least some of which is necessary for the development of peasant commercial production. Given the very low level of Tanzania's officially marketed (or exported) agricultural production, any but the most cautious and conservative of development policies would have run into budgetary problems, though their incidence could no doubt have been much reduced.

There is another reason for rejecting the idea of a "state versus peasant class conflict". Tanzania's peasant entrepreneurs may have been obstructed in their development as agricultural producers, but that has not, at least for some, inhibited their further accumulation of wealth and political influence. Indeed, it is precisely through political influence and position that many have continued to accumulate. In short, there is a powerful interest group *within* the peasantry which implements, benefits from and sometimes depends upon the system of state, party and parastatal controls over the flow of materials and services and over how peasants (villagers) use their time.

While this is clearly part of a process of class-formation and consolidation, it is a rather complicated one and not easily fitted into standard class terminology. This tends to yield the assignment of all groups with any significant influence and power to the petty-bourgeoisie, which does not take one very far in considering the significantly different situations and interests of its various fractions. One school goes still further and assigns the whole peasantry to the petty-bourgeoisie, giving a simple class division between the workers and the rest. Not only does this seem rather unrealistic in economic terms, given the size of the working class and the major source of surplus production. It also ignores that a considerable proportion of the working class is also organized in ways bearing a good deal of resemblance to those operating in rural areas. Access to goods, availability and security of jobs, not to mention other perks, depend to a considerable extent on political influence, patronage, tribal and family ties. But there seems, in any case, something rather unfruitful about a class analysis in which 95% or more of the population turn out to be *petty-bourgeois*.<sup>33</sup> It also seems intuitively wrong as a description of Tanzania. For the moment, it may be more fruitful to pursue what are the dynamics of this class emergence and the means for control over resources and labour, relating this to development.

"Development" is not just a matter of increasing agricultural production, still less just peasant production. It invariably involves the concentration of resources for their expenditure in activities deemed "developmental".



Almost all versions of development theory, from whatever political angle, see the peasantry as a source for the extraction of surplus for the development of other sectors. With socialism as ideology and an ambitious programme of social and economic infrastructural development to fulfill, it is not surprising that, in Tanzania, this is seen as being channelled primarily through the state or that the amounts should be large in relation to the (extremely limited) development of commercialized production, thus making some degree of conflict virtually inevitable. This in turn has contributed to the maintenance of an ideology justifying the use of coercion by explaining this conflict in terms of peasant "traditionalism" and unwillingness to accept (undefined) "change".

Thus Hyden, writing in 1980, from a viewpoint proclaiming its similarity of aim with that of the Tanzanian regime, throws doubt on the relevance of prices to peasants and stresses the need to "capture" the peasant and "make *him* produce more than for his own needs".<sup>34</sup> He continues "development is inconceivable without a more effective subordination of the peasantry to the demands of the ruling classes" and "development is largely a matter of power, not only the use of power, but the creation of power structures that facilitate development".<sup>35</sup> Hyden has retreated in more recent writings to a more market-oriented position. But there is little doubt about the thrust of his 1980 work, or its similarity to the ideology of Tanzanian modernizers.

Of course similar opinions underlay much of colonial agricultural policy in Tanganyika. Such thinking and policies always emerge most strongly when, for one or other reason, the state lacks the funds (or is unwilling) to offer the carrot and takes recourse rather to the stick. During the 1930s, it was occasioned by falling world prices and reduced settler production. During the 1970s, it was rather the increase in state expenditure and monopoly marketing margins which provided the economic context for increased coercion. In this case, mobilization for villagization had a dynamic of its own, over and above the economic. Indeed, for the most enthusiastic implementers of villagization, economics was the very least of considerations. Moreover, as on other occasions, enforcement has clearly failed to increase production and done so at considerable cost.

But while this process can be considered as a failure in terms of revenue extraction by the state, the development of the institutional structure for monopolizing resource flows and exercising political control does provide the basis for the emergence of a coalition of different interest groups, patronage networks and hierarchies competing and colluding for control over resources and political power. While not structured as a class and containing a variety of disparate interests and forces, this coalition clearly represents a process of class and system consolidation – at least in some respects. This occurs in two different ways.

At the level of official policy, the channelling of most resources through state, parastatal or cooperative institutions, all significantly controlled by the party, ("Regional Commissioner orders rural bank to assist villagers." etc), allocates resources so as to achieve policy-goals. Villages (or selected villages) are supported. Price policies tend to favour regions far from Dar es Salaam. The physical distribution of resource's reflects various policy goals.

At the same time, however, the abundant corruption to which this gives rise assists the emergence of political-economic coalitions and networks, operating a system of primitive accumulation through straddling<sup>36</sup> and misappropriation.

For obvious reasons, both coalition and system are inherently unstable. Control over resources is unrelated to production and unbound to any requirement to use the resources productively. Rather the reverse, there is every reason to plough at least some into cultivation of political connections through extravagance. With the effect on incomes, incentives and production of the majority outside the charmed circle of influence unambiguously negative, and with rapidly increasing population (especially urban), competition for increasingly scarce resources becomes sharper. It seems to be an important internal contradiction of such a system, that the very means by which wealth and influence are accumulated generate insecurity and arbitrariness in access to resources and capacity to use them. I do not claim (or believe) that this simplified and depressing scenario adequately summarizes the political process in Tanzania. I do think that it bears some relation to what is going on. To return to a point made earlier, the variations between different parts of Tanzania and different groups within them, are so great as to defy any simple analysis.

This does, however, point to some of the difficulties. Given the rate of population growth and urbanization, agricultural production has to increase, has to do so on a sustainable basis and has to provide a livelihood for a fair proportion of the present and increased population. This would seem to require the development of a settled and intensive peasant agriculture in areas with sufficient rainfall, based on long-term, and probably labour-intensive, improvements to the soil like levelling and drainage, and cultivation practices which enhance soil structure, like rotation, green manuring, and inter-cropping. Not only are the best combinations of these often not yet known; they cannot be expected to appeal to most Tanzanian cultivators unless their security of land rights is very considerably improved. Neither current decision-making based on insecurity, nor text-book economic analysis based on discounting, favours such practices. Probably the only thing which can do so is the security of knowing that, in improving a given plot of land, one is providing for one's heirs and the continuation of the

family. Even if I knew how this was to be achieved, it would require another paper.

Meanwhile, it is worth restressing that Tanzania is far from being the worst off country in tropical Africa, for which its diversity is partly to be thanked. But in another sense it is more united than most. Not only is tribalism less serious than in other countries, but there appears to the outsiders, to be a greater unity, if partly of shared adversity, than is to be found in other countries. Part of this is a sense of humour which, while it may occasionally add to the problems, makes their effects far easier to bear.

## NOTES

1. Hyden, G., *Beyond Ujamaa in Tanzania*, Heinemann, London, 1980.

2. See Kjekshus, H., *Ecology Control and Economic Development in East African History*. Heinemann, London, 1977. For a more wide-ranging discussion of the tsetse problem – and a most fascinating blend of ecology, entomology and history – see Ford, J., *The Role of the Trypanosomiasis in African Ecology*. OUP, London, 1971.

3. See Kjekshus, *op.cit* and Raikes, P. L., *Livestock Development and Policy in East Africa*. CDR Publications No. 6, SIAS, Uppsala, 1981.

4. Thus, for example, Kitching, a District Officer in the 1920s, was enthusiastic for the highland-dwelling, cushitic-speaking Iraqw, relating the fact that they were "steady, hard-working and people of their word" (or words to that effect), to their "nilo-hamitic" origin. Of the people of thinly-populated, war, slavery and disease-ravaged, tsetse-infested Biharamulo District, he had the following to say: "All the tribesmen are exceptionally backward, unprogressive and stupid; their cultivation is extremely primitive and their huts little better than hayricks . . . Their outlook for years has been one fixed and settled hopelessness. Natural stupidity and laziness . . . are the main difficulties which have to faced in development." See Raikes, P.L. (1978)

5. While discussion of this important topic is essential to any real understanding of the Tanzania rural sector, it would add at least ten pages to an already too long chapter. I have tried to go more deeply into some of the relevant factors in an, as yet unpublished, book-length manuscript, "State and Agriculture in Tanzania".

6. Estimated at 10% until revised downwards in the early 1970s after an FAO "sample census", which was downward biased in most other respects. FAO have kept the same figures for cultivated area since then, although the population has increased by almost ten million. On this general topic, see Raikes, P. L., "Report on Food Production in Tanzania to Irish Advisory Council for Development Cooperation". Mimeo, Dublin, 1985, or forthcoming research report.

7. Boserup, E., *The Conditions of Agricultural Growth*, Allen & Unwin, London, 1965.

8. Allen, W., *The African Husbandman*, Oliver & Boyd, Edinburgh, 1965.

9. Belshawe, D., "Taking Indigenous Technology Seriously: the case of inter-cropping systems in East Africa." Workshop on the Uses of Indigenous Technical Knowledge. Inst. of Dev. Studies, Univ. of Sussex, mimeo, April 1978.

10. This has been variously attributed to Pax Britannica (allowing hill people to settle in the plains); to efforts to avoid colonial taxation, rules and regulations; and to the development of commercial farming. The latter is probably the most important. Peasants involved in expanding operations and increasing income often prefer to live on their farms, where they can control production, guard it against vermin, and react quickly to problems.

11. Feldman, R., "Custom and Capitalism: a study of land tenure in Ismani, Tanzania." ERB Paper 71.13, Mimeo, Dar es Salaam, 1971. Also in **Oxaal, Barnett & Booth** (eds), *Beyond the Sociology of Development*, London, 1974.

12. Jacks, G. V., & R.D. Whyte, *The Rape of the Earth*. Faber & Faber, London, 1939. Most of the really bad examples in this book concern large-scale farming. But this did not stop colonial officers assuming that the problem was African peasant ignorance.

13. See **Cliffe**, L., "Nationalism and the Reaction to Enforced Agricultural Change in Tanganyika in the Colonial Period." In Cliffe, L., & J. Saul (eds), *Socialism in Tanzania*, EAPH, Nairobi, 1972.

14. For a discussion and critique of this dominant school of extension see P.L. Raikes and Wicky Meynen, "Dependency, Differentiation and the Diffusion of Innovations: a critique of extension theory and practice." *Proceedings*, E.A. Univ. Social Science Conf. Mimeo, Nairobi, 1972. Or Chapter 8 of Raikes (unpublished).

15. For example, Nye, P. H., and D.J. Greenland, *The Soil under Shifting Cultivation*. Commonwealth Bureau of Soils, Technical Communication No. 51, London, 1960, or Allen, *op.cit.* 1965. Ford's monumental work (*op.cit.* Note 2) has received insufficient attention for similar reasons.

16. Some aspects of East African livestock economy are considered in Raikes, P. L., *Livestock Development and Policy in East Africa*, Centre for Development Research Publication No. 6, Scandinavian Institute of African Studies, Uppsala, 1981.

17. **Iliffe**, J., *Agricultural Change in Modern Tanganyika*, East African Publishing House, Nairobi. 1971, page 10, citing Baumann, a German traveller, writing in 1890, who refers to "export (of) grain in very considerable quantities . . . Imports of European goods and the spread of the culture of the Coast . . . etc."

18. For example, while colonial concentration policy was leading to depopulation and tsetse advance in parts of Biharamulo and Geita Districts, in other parts of the same Districts, spontaneous expansion of people from the south and east Lake area was clearing land for grazing and cultivation. See Raikes 1981, *op.cit.*

19. See Raikes, P. L., *The Development of Mechanized Commercial Wheat Production in North Iraqw, Tanzania*. Unpublished Ph.D. Thesis, Stanford Univ. 1975.

20. **Ellis**, F., "A Preliminary Analysis of the Decline in Tanzanian Cashewnut Production 1974-79". ERB Paper 79.1, Mimeo, Univ. of Dar es Salaam, 1979.

21. A major tractor programme of the early 1960s involved losses so large as considerably to increase the cotton marketing margin. But this helped a fortunate (and well-placed) minority to get started in tractor-farming. The "Maswa tractor fleet" was said to number up to 500 at its peak, and was a loose grouping of individual tractor owners, operating on a contract basis over a large part of northern Tanzania and even Kenya, until controls and lack of fuel and spare parts severely curtailed operations in the 1970s.

22. For example, **Hulls**, R. M., "An Assessment of Agricultural Extension in Sukumaland, Western Tanzania". ERB Paper 71.7, Mimeo, Univ. of Dar es Salaam, 1971, page 25: "The failure (of the extension service) to communicate modern agricultural technology to the vast majority of the farmers of Sukumaland, has been almost total". Other studies have shown that the low returns to labour of the proposed "modern agricultural technology" are the main reason for this.

23. See **Boesen**, J., and **A.T. Mohele**, *The "Success Story" of Peasant Tobacco Production in Tanzania*. CDR Publications No. 2, S.I.A.S., Uppsala, 1979.

24. The current pricing system is not "pan-territorial" any longer, but still further accentuates the above trends by paying higher prices to "high potential" areas, most of which are situated far from Dar es Salaam.

25. For example, a current International Fund for Agricultural Development (FAD) proposal to provide inputs for maize in the Southern Highlands, which are referred to as the "traditional" maize surplus area. Without preferential pricing, maize production for sale to Dar es Salaam would not be economic in **Rukwa** or **Ruvuma** Regions.

26. Cooperatives were granted statutory monopolies over crop purchases for the crops and areas which they covered.

27. See, for example **Raikes**, P. L., "Ujamaa Vijijini and Rural Socialist Development". *Review of African Political Economy*, No.3, 1975.

28. There has been a steady stream of crop improvement programmes for most major export crops, since the early 1950s. Some of these (for example the early development of tobacco production under "close supervision") were claimed to be successful, though later events made clear that high prices were more important than supervision. **Boesen & Mohele**, *op.cit.* The 1970s saw a number of programmes for maize.

29. Though part of this is the transport system, as in 1985/86, when a near-record crop failed to improve supplies in Dar es Salaam, whose residents would, paradoxically, probably have been better off with a poor harvest which persuaded donors to provide food aid.

30. See **Rasmussen**, T., "The Private Market for Maize in Tanzania; a preliminary analysis.", CDR Project Paper D.85.13, Mimeo, Centre for Development Research, Copenhagen.

31. Or in calling for the removal of pan-territorial pricing and financing maize-development programmes which would be unviable without it. See note 25 above.

32. See for example **Berry**, S., "The Food Crisis and Agrarian Change in Africa: A Review Essay". *African Studies Review* 27(2), June 1984, pp. 59-111, a very interesting and useful paper.

33. Though to be fair, most of them are also taken to be workers and thus exploiting themselves, in the ingenious formulation (which I have unfairly oversimplified) of **Bernstein** from **Gibbon** and **Neocosmos**. This and other attempts to replace the "descriptive" category peasant with more "analytical" ones do not seem to me to achieve very much. The heterogeneity of the peasantry is the reason why the term is not an adequate tool of Marxist analysis, a problem which cannot be overcome by changing terminology. On the other hand, a recent book by **Bernstein**, shows that such formulations do not prevent interesting work at a "lower level of abstraction".

34. **Hyden**, *op. cit.*, 1980, p.31. Well over half of those working in peasant agriculture are women.

35. **Hyden** refers throughout this book to socialist development. The notion of a socialist ruling class is apparently unproblematic for him.

36. **Michael Cowen's** useful term for those with one foot each in public and private sectors.



## 6. Soil Erosion and Conservation in the Drylands

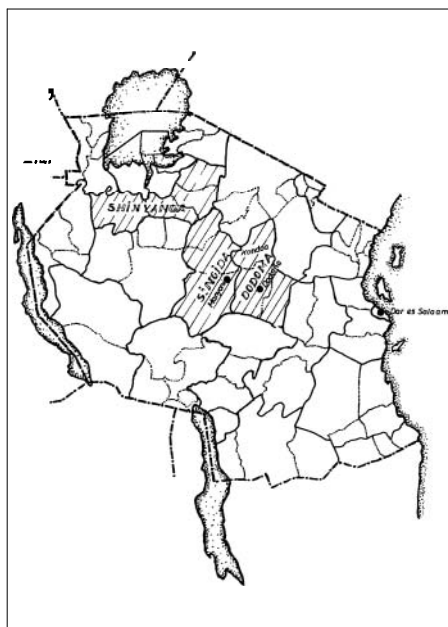
*Carl Christiansson*

Tanzania's **drylands** or semi-arid parts are those receiving an **average** annual rainfall of less than 800 mm.' They are agriculturally marginal lands of low productivity. The rainfall is unreliable and the water-balance strongly negative with the potential evaporation exceeding precipitation throughout the year. Rough estimates indicate that these semi-arid areas cover approximately half of Tanzania's land area mainly in the northern and central parts of the country. Some 20% of the human population and the majority of livestock are found in these dry regions.<sup>2</sup>

Throughout the drylands, symptoms of land degradation are evident. Hillsides have been cleared of natural vegetation by man and intensely cultivated and overgrazed. This has resulted in excessive surface runoff and soil erosion which has removed considerable parts of the precious top soil. The roots of trees and bushes are exposed on the ground surface. In places alluvial fans and pediment slopes are dissected by gullies up to 10 metres deep.

Large amounts of water are lost through the increased runoff. Heavy loads of sediment in the streams rapidly silt up surface water reservoirs. These circumstances in turn have led to repeated food shortages and dwindling water supplies.

Many factors have combined to make land degradation a serious problem in semi-arid Tanzania. As will be demonstrated below, the rainfall is sometimes inadequate for the crops grown and often ill distributed, falling



in intense storms of great eroding power. In addition, human and cattle populations are now concentrated in or near villages or where water supplies are ample and tse-tse flies absent, and this leads to drastic local over-exploitation. In fact, in Tanzania the semi-arid areas represent the last great frontier into which the population is expanding under the pressure of rapid growth and decreasing availability of land 'in the surrounding more fertile areas.'

Thus, in parts of Shinyanga and Singida regions soil erosion has developed into a serious problem. Former bush- and grasslands have been converted to desert-like conditions due to bush clearing for tse-tse eradication and extensive overgrazing by cattle. Sheet wash is the dominant degrading process in the gently undulating landscape but where slopes are steeper gullies have developed. These supply material to sand lobes that build up below the slopes. This situation creates serious practical problems as the best cultivation and grazing areas in the valleys are gradually covered by infertile sandy sediments.

In the open landscape now dominating much of Singida region strong winds blow throughout the dry season exposing the sandy soils to wind erosion. In the most exposed positions virtual dune landscapes are under formation and drifting sand is invading cultivated fields.<sup>4</sup>

## DODOMA REGION

The most intensely degraded part of Tanzania is probably Dodoma region in the very centre of the country.

### Natural *environment*

In terms of the physical environment Dodoma region is typical of large areas of interior Tanzania. The dominating climatic features are a long dry season and a short but often intense wet season. The dry season lasts for about seven to eight months, generally beginning in April and ending in November or December. The mean annual rainfall is between 500 and 600 mm; potential evaporation amounts to 2000 mm/year.

All streams in the area are ephemeral. They flow only during short periods of the year, and then as intense flash floods carrying considerable loads of sediment.

The topography is characterised by plains with scattered inselbergs or ridges or rows of hills. The soils of the area occur in catena sequences. On the upper slopes of the inselbergs, thin stony soils dominate. The pediment slopes are covered by red or grey sandy soils, usually poor in nutrients. Black or grey clayey deposits of higher fertility prevail on valley bottoms and floodplains.



*Land use*

Most of the inhabitants of the Dodoma region are agro-pastoralists, dependent on agriculture for subsistence but maintaining herds of cattle and small stock for social, capital and insurance purposes. In many households livestock also play a role as suppliers of manure and protein. The staple crops of the area are maize, millet, sorghum, cassava and groundnuts.

The present livestock carrying capacity of the area is low.<sup>5</sup> According to recent surveys the area is overstocked.<sup>6</sup> The overstocking causes overgrazing and destruction of the grass sward by trampling of cattle. Disturbances in the grass cover and the upper soil layers have resulted in extensive soil erosion.

Earlier the dominant type of arable agriculture within the area under consideration was shifting cultivation. This is now mostly replaced by rotational bush fallowing<sup>7</sup> and also to a growing extent permanent cultivation.

Soil erosion is not a serious problem under shifting cultivation provided that clearing is restricted to gentle slopes, that there is a minimum of burning and that a short period of cultivation is followed by a long period of fallow. This system of land use can be satisfactory if the ratio of land to people is high. Due to increased population pressure, fallow periods in the cultivation cycle are now short. To compensate for decreasing fertility and consequent low yields the cultivated area is continually extended. New fields are cleared on the upper parts of the pediments around the inselbergs. Soils in this position are highly erodible. The fields rapidly lose their topsoil and gullies dissect the slopes. Yields decrease and the basis for an adequate food production is undermined.

*Rates of environmental degradation*

Research on land degradation carried out in Dodoma region has revealed high rates of erosion and sedimentation.<sup>8</sup> Annual denudation rates on moderately grazed upper pediments average between 1 and 2 mm per year rising to around 10 mm per year on overgrazed slopes with erodible soils. Cultivated areas experience erosion rates in the same range. With the present agricultural system, the soil cover on part of the slopes will be lost down to bedrock within 50–100 years.

Due to the high sediment yield, surface water reservoirs in the region have extremely short lives. Of four reservoirs studied two have an expected life of 35–45 years only, before they are totally silted up.

Today many experts claim that the most serious threat to the country's forest resources and consequently to the soil resources is the uncontrolled gathering of firewood. In a study of the firewood consumption in a number

of villages in the Dodoma region Nkonoki<sup>9</sup> shows that all households in the study use firewood for cooking. Practically all the firewood used originates in "natural" woodlands or bushlands which today cover 35% of the region. The estimated annual regrowth in these wooded areas was some 840,000 m<sup>3</sup> in 1983 while the annually required volumes of wood for cooking amounted to 1,450,800 m<sup>3</sup>. This indicates a consumption of 610,000 m<sup>3</sup>/year in excess of the regrowth. Apart from consumption for cooking, firewood is also used for many other purposes, among them brewing, distilling, smoking of fish and production of bricks and pottery. It has been estimated that the total annual consumption of firewood in the region amounts to between 1–2 m<sup>3</sup>/person.<sup>10</sup> If the present trend continues the region will lose its remaining "forests" in less than 50 years.

### *Climate, erosion and food production*

An important constraint on food production throughout this semi-arid area lies, of course, in the paucity of rainfall but even more so in its erratic nature, both within the season and from year to year.

Over the 40 years from 1938 to 1977, Dodoma, with an annual average of 546 mm (over 55 years) experienced seven years of heavy rains – more than 100 mm over average – and thirteen years of light rains – more than 100 mm under average." Furthermore, an average year may start well and then produce a dry month at a critical point in plant growth, reducing the harvest to meagre proportions. Another constraining feature is the extraordinary spatial variability of the rainfall, which has led to farmers spreading risks by cultivating several widely separate fields and distributing their cattle amongst relatives and friends to avoid the worst consequences of drought.

As rainfall becomes less effective on eroded land, food shortages increase in the semi-arid regions. During the period 1923–77 Dodoma and Singida regions experienced 18 years of inadequate food supplies varying in severity from "appreciable shortages" requiring food imports to "severe famine" resulting in the loss of many lives. Four of these years occurred in the 1970s, requiring famine relief at a rate of 37,000 t per year. During the 1970s Dodoma region with around one million inhabitants imported more than 300,000 t of relief food.<sup>12</sup>

### *The formation of "cultivation steppe" <sup>13</sup>*

The ecological history of central Tanzania over the last hundred years can be reconstructed in some detail from the accounts of early travellers and colonial officials. During this period remarkable changes have taken place. Areas which were described a hundred years ago as clear enough to make it possible to see a caravan three days march away are now bush covered,

whilst previously uninhabited areas of bush have been cleared for habitation and **cultivation**.<sup>14</sup>

The original population of the dry plains of central Tanzania mainly subsisted on hunting and **gathering**.<sup>15</sup> Eighteenth and nineteenth century invaders, among them the Wagogo, who brought cattle with them found that the more open parts of the area were well suited for pastoralism. The natural grazing areas were gradually extended by means of burning. In the same way areas for cultivation were cleared by means of the axe and fire.

Thus, semi-arid central Tanzania, Ugogo, was in the mid nineteenth century characterised by a mosaic of deciduous thicket, open grassy areas and small cultivated clearings surrounding the scattered settlements. Extensive areas were also covered by dry woodland of miombo type, "the jungles and forests of **Ugogo**",<sup>16</sup> particularly in the east and north. Although gradually disappearing, large areas of woodland still remained in the second half of the century."

The recurrent drought years with famine and precarious grazing continuously changed the settlement **pattern**.<sup>18</sup> Abandoned fields were invaded by secondary vegetation, first grass then thorn bush. Thus, the woodlands and the thicket were succeeded by open scrub which, in combination with grazing left large areas **bare**.<sup>19</sup>

Traditionally the settlements were small and isolated. A cluster of average size consisted of some ten **households**.<sup>20</sup> With the emerging pressure from neighbouring peoples, defence aspects became important and larger village-like clusters were **formed**.<sup>21</sup> The reason for the formation of larger clusters was also of an ecological nature: the scarcity of water over large stretches of land made an even distribution of settlements **impossible**.<sup>22</sup> This effect was also emphasised by differences in the fertility, waterholding capacity and drainage properties of the soils.

In the early years cultivations in Ugogo were concentrated on the light soils along some river banks and on the lower pediment **slopes**.<sup>23</sup> Good land for agricultural use may have become scarce at a relatively early date, particularly as the paucity of permanent water excluded huge tracts from human habitation. On the upper pediments and the steeper slopes of the inselbergs the vegetation was dense enough to make access by people and cattle **difficult**.<sup>24</sup> Successively, however, thicket areas and upper pediments were cleared.

Along the main nineteenth century caravan routes; some of which passed through Ugogo, more intensely cultivated areas **emerged**.<sup>25</sup> Much of the natural vegetation was removed and gradually a so-called cultivation steppe was created. The heavy food and **firewood** requirements of the hundreds of thousands of travellers necessitated clearing of woodlands and cultivation of marginal soils, until then uncultivated, without any conservation **measu-**

res. In the dry savanna climate the result could be only one thing – soil erosion.

As a consequence of the expansion of the caravan trade the pressure on central Ugogo became excessive and the woodlands disappeared within large tracts.<sup>26</sup> The resulting scarcity of firewood forced both the local population and the caravans to use grass and cow dung as substitutes.<sup>27</sup> With the devastation of the woodlands the water supply dwindled. The total rainfall did not decrease but due to land degradation, rainfall became less effective than it used to be.<sup>28</sup>

Thus the cultivation steppe gradually developed (cf. the description by Hore<sup>29</sup> of the plains of Unyamwezi: "Once forest, but now clear and cultivated"). Gillman<sup>30</sup> distinguished between two different types, one fully developed and one called semi-cultivation steppe. In the former very few traces of original vegetation remained, while in the latter primary vegetation still occupied large areas. The semi-cultivation steppe originated in recent expansion from congested areas into marginal land.

The regeneration of woodland on fallow fields was prevented by short fallow cycles and by the high demand for firewood and charcoal. The lack of large trees may also be attributed to the need of fuelwood for the railway engines.<sup>31</sup> "Over the years this was to have a profoundly adverse effect on the ecology of the district, and already in 1917 there were reports of Greek and Indian firewood contractors denuding the country of trees".<sup>32</sup>

The abundance of game in Ugogo was emphasised by most nineteenth-century European travellers.<sup>33</sup> However, already in the 1850s the wild animals were disappearing from the more densely populated areas and from the vicinity of the caravan routes. "At Ugogi", Burton<sup>34</sup> writes, "the game has suffered from the frequent haltings of caravans and of the people's want for meat. In the more populous parts game has melted away before the woodman's axe and the hunter's arrows".

By the early 1900s game had become scarce in major areas. Meyer<sup>35</sup> wrote that in northern and central Ugogo the larger animals were no longer common due to the scanty grazing resources and the competition with domestic animals and also because of the expansion of the Wagogo settlements. An additional reason was the rinderpest that hit the area in the 1890s.

## "LAND DEVELOPMENT" IN DODOMA REGION DURING THE COLONIAL PERIOD

During the German colonial period some interest was directed towards the possible development of the land potential of Ugogo. A thorough survey was carried out in the years 1910–11. The conclusion of the survey was that

the area was primarily suited for pastoral purposes. Some of the larger plains and mbugas (Itiso, Logi, Nondwa, Nyika ya Itumbi and others) were recommended for ranching projects.<sup>36</sup> These ideas were again taken up by the UNDP/FAO Livestock Mission to Dodoma during the late 1960s."

Under the British mandate Tanganyika was badly provided for, according to Rigby,<sup>38</sup> and the Central Province, including Ugogo, was one of the most neglected parts of the country. However, a number of development projects were formulated and a few concentrated on the provision of grazing for livestock.<sup>39</sup> Most attempts, however, were geared at making people more "agricultural" and involved sedentarisation of the population as well as attempts to create villages."

### *Anti-erosion measures*

In the late 1920s soil erosion became a matter of concern among the colonial administrators in Tanganyika. Among the areas most obviously affected were parts of the semi-arid interior.

In 1929 an advisory committee on soil erosion was set up. It met for the first time in 1931 and arrived at the conclusion that in the absence of sufficient funds reliance had to be placed on persuading the people to adopt improved land use methods rather than carrying out extensive conservation schemes." This was thus the policy and practice of the 1930s and early 1940s.<sup>42</sup>

The anti-erosion programmes carried out in Ugogo involved, apart from reduction of stock numbers, contour ridging of cultivated land, contour banking of uncultivated land, gully control, reafforestation and in some cases resettlement. The anti-erosion measures were closely linked to demonstrations on the use of farmyard manure and to range control and anti-famine programmes.<sup>43</sup>

Contour ridging became a major part of colonial policy as early as 1937 when orders were issued in the Central Province that everyone should cultivate cassava on contour ridges. Nevertheless, although people agreed about the rationale behind the order," cassava was an alien crop to the Wagogo and the cultivation of cassava ceased when central controls were relaxed." However, the method of ridge cultivation had long been known in the area<sup>46</sup> and nowadays cassava on ridges is again being accepted by the Wagogo.<sup>47</sup>

In the 1940s and early 1950s there was a continued expansion of soil conservation in the Central Province where it was estimated that over 2,000 miles of contour banks were needed." The banks were constructed by the local population under the supervision of staff of the Department of Agriculture.<sup>49</sup> Heavy rains often destroyed the banks, however, or caused breaks that increased rather than alleviated the problem.<sup>50</sup>

In addition, water supplies were constructed with a view to opening up new pasture areas, controlling stock movements and encouraging people to move to relieve the overgrazed **areas**.<sup>51</sup> There were rapid improvements in pasture quality and bush regeneration when rotational grazing was introduced into the Msomalo area of Dodoma district in the 1940s, and two-thirds of the population were moved to conform with grazing and cultivation **rules**.<sup>52</sup> But when rotational grazing was introduced without the construction of new water sources, thousands of cattle converged on one spot for water in the dry season, destroying grazing and **soil**.<sup>53</sup>

## THE POST-COLONIAL DEVELOPMENT

Because the colonial soil conservation programme was associated with measures of a discriminatory nature and unpopular restrictions, the whole programme broke down around the time of Independence. Soil erosion was no longer considered a major problem for the development of agriculture in Tanzania and early party policy was to denounce conservation measures as being part of bad colonial **rule**.<sup>54</sup>

During this period a marked increase in the human and livestock population occurred. In Dodoma district the livestock population went up by 47% between 1957 and 1964. This caused an intensification of the degradation processes, exemplified by the increase in eroded material trapped in water reservoirs in the district. In one reservoir near Dodoma town the rate of sedimentation increased by 40% during the 1960s compared to the 1950s.<sup>55</sup>

By 1968 conditions had become so alarming, particularly in the Kondoa district, that the local administration issued by-laws prohibiting grazing, cultivation and felling of trees without special **permission**.<sup>56</sup>

### *The role of villagisation*

To increase agricultural production and facilitate the provision of social services, President Nyerere in his writings on "Socialism and Agriculture"<sup>57</sup> advocated the idea of changing the traditional settlement pattern of the country. The peasants were to move from their scattered homesteads and concentrate in sizeable villages located at strategic points. In the villages (ideally consisting of some 250 households each) all larger investments (water, schools, etc.) were to be on a communal basis as well as production (crop and animal) and marketing. Only small garden plots were to be owned privately. In this way rural development was intended to be brought about quickly and efficiently managed. This effort was the direct opposite of the development programmes of the 1950s and early 1960s.<sup>58</sup>

The planning stage preceding the implementation of the above ideas was

considered by the authorities as being of a purely technical nature. The plans and the solutions rested with the authorities. The major task was to supply the innovations and to see that they were implemented. The regional authorities decided on the location of the new villages. The farmers themselves were seldom consulted on practical matters or on the agricultural suitability of the areas **chosen**.<sup>59</sup>

In the Dodoma area the villagisation programme (Operation Dodoma) started on a large scale in 1971. By September 1973 the whole population of the district (250,000) had been moved into 142 villages. Some of these were new, while others were traditional trading centres, not necessarily possessing the land resources needed for an expanded population.

Most of the villages in the district are concentrated in the central belt, an area covering about one-third of the total area of the district. Even before the movement this area had a much higher population density than the rest of the district. Thus, at present the majority of the population of the district is concentrated in one-third of the total **area**.<sup>60</sup> This has changed the **man/land ratio** unfavourably.

From a soil conservation point of view, criticism can be voiced on the size and location of many villages. The production capacity in relation to the expected population was never assessed, and seldom if ever was the question considered as to how viable agricultural production was to be maintained with existing **techniques**.<sup>61</sup>

### *Land reclamation efforts in the 1970s and 80s*

However, as parts of the second Five Year Plan (1969–74) soil conservation measures once more appeared in government **proposals**.<sup>62</sup>

During a meeting in Iringa in 1972 TANU representatives discussed the causes and effects of soil erosion and recommended steps to be taken to improve the situation. The recommendations were included in "Siasa ni Kilimo", an agricultural policy programme.

Having realised the crucial part played by overgrazing in land degradation, the TANU Annual General Meeting of 1975 recommended a 10% reduction in livestock numbers to relieve the most badly overgrazed areas of excessive pressure. The recommendation has not been strictly **followed**.<sup>63</sup>

Recently the government has spelt out clearly in its agricultural policy, not only the necessity and liability of soil conservation but also guidelines for the methods that are to be applied in soil and water conservation. In order to encourage long term agricultural planning and sound and sustainable land use the government now allows the villages to lease their land for periods of considerable length. The village authorities in turn may sub-lease land to individual farmers for periods ranging from 33 to 99 years.

Today three ministries share the responsibility for soil and water con-

servation work in Tanzania, namely the Ministry of Agriculture and Livestock Development, the Ministry of Water Development, Energy and Minerals and the Ministry of Natural Resources and Tourism."

The conservation efforts of the Ministry of Agriculture and Livestock Development have so far been concentrated on the Arusha region in the north. They include construction of terraces and cut-off drains, introduction of contour ploughing and the planting of trees as wind breaks mainly on large commercially-oriented farms. Within the livestock sector, the work is directed towards the introduction of restrictions on free range grazing in agropastoral areas.

The Ministry of Water Development, Energy and Minerals is responsible for developing water supplies in the rural areas, an important factor in land management. This refers particularly to the distribution of wells and dams constructed to provide water for livestock.

The Ministry of Natural Resources and Tourism is responsible for the majority of Tanzania's soil and water conservation work. Plans have been worked out to protect 13 million ha of so-called catchment forests, forest areas of immediate importance for the country's water resources. The Ministry is also responsible for the national tree plantation programme, and for the demarcation of village boundaries. Well-defined and documented village boundaries presumably will initiate more efficient utilisation of the land and motivate the villagers for soil and water conservation work.

#### *Dodoma Region Soil Conservation Project (HADO)*

The Ministry of Natural Resources and Tourism is also responsible for the most comprehensive soil conservation project in the country, the Dodoma Region Soil Conservation Project (HADO), which was started in 1973. Initially the project concentrated on the Kondoa area north of Dodoma. Later activities expanded and today there are local offices and reclamation work going on in Dodoma and Mpwapwa districts.<sup>65</sup>

Apart from emphasis on the development of arable agriculture, HADO rehabilitation work has also involved the construction of contour bunds and check dams, the planting of grass and sisal in gully bottoms, the establishment of nurseries, the production and distribution of seedlings, tree planting and the provision of equipment for soil conservation work. Thus between 1973 and 1983, 11,400 ha of eroded land was reclaimed in Dodoma region by the HADO project. During this period the project established another 2600 ha of demonstration tree plantations. Moreover, an area of some 2000 ha, divided into a great number of small plots, near settlements, along roads etc. was afforested on the initiative of local authorities, associations, schools and individuals.

During the initial phase of the project mechanical engineering techniques



were used. Due to the high running costs of the machinery and difficulties of maintenance and supply of spare parts, these techniques were abandoned. Today all construction of contour ridges, drains, check dams etc. is carried out by manual methods. So far the project has been running on an extremely low budget. During the ten-year period 1973–83 the whole project consumed only Tsh 13 million.

An interesting aspect of the measures taken to rehabilitate the degraded areas of Kondoa was the political decision to enforce the 1968 by-law prohibiting grazing within the project area. Backed by national and local authorities this move was effected in October 1979 and so far has met with considerable success. The prohibition of grazing has initiated a marked ecological transformation from a desolate landscape of bare ground, heavily browsed shrubs and scattered trees to impressive views of grass and vigorously sprouting shrubs.

When the Kondoa area was closed to livestock more land suddenly became available for cultivation, as earlier it had not been possible to cultivate many areas since unofficially they had the status of grazing areas only. Some of these areas are **wetlands** that are possible to utilise for crop production even during the height of the dry season.

With less surface runoff as a consequence of the denser vegetation, the sediment transported in the streams has decreased, and this has resulted in many so called sandy rivers becoming stabilised from earlier conditions with oscillating courses over wide areas. Less heavy surface runoff has also reduced the peak discharges in the streams, which has resulted in narrower and more stable river courses. The river banks can now be used for cultivation. At the same time, the stream flow extends further into the dry season than it used to. Wells which used to dry up early in the dry season now yield water permanently. These results have not yet been quantified, but were observed by the inhabitants of the area some years after the land use reform.

However, the project has also met with local opposition. Between 1980 and 1983, 188 offences against the 1968 by-laws were recorded. These included unlawful cutting of trees, grazing of cattle within the restricted area, and lighting of fires on other than cultivated land. In 1983 a **HADO** worker on duty was killed by enraged cattle owners.

## FUTURE PERSPECTIVES

In many parts of semi-arid Tanzania the concentrated settlements, in combination with the wasteful agricultural methods widely applied, are creating an ecological imbalance that is undermining the production potential of the area. Part of the solution to the problem lies in improved land

management. Earlier experience shows that legislation per se is not enough, even if observance of the laws is carefully supervised. All decisions that are not fully agreed by the local farmers risk encountering opposition and even sabotage. Thus, it is important to create consciousness about the need for soil and water conservation. One way to reach that goal is to demonstrate how yields improve as a direct consequence of soil conservation work.

Apart from concentration on technical solutions and intensification of the tree planting programme, greater emphasis must be placed on extension work, something which has received little attention so far. Demonstration farms should be established near schools and village centres. Suitable methods for animal husbandry should be demonstrated, aimed at reducing the number of animals with a parallel increase in the production of meat and milk. The possibility of stall feeding should be considered. This method has been applied for a long time in other parts of Tanzania. However, in the semi-arid areas, a great problem is posed by the collection and storing of hay.

The objectives mentioned above require well-educated technical staff as well as administrators, villagers and politicians. Thus, emphasis must be placed on educational organisation, so that courses for extension staff on all levels can be provided continuously.

The earlier the soil conservation ideas can be communicated to the rural population the better. It is quite obvious that soil conservation should be included in primary education. For higher levels a national research and education body should be established to provide for soil conservation education and to develop better land management methods.

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# 7. Wood – the Other Energy Crises

*Per Nilsson*

Despite all the talk about oil crises and oil prices, the overwhelmingly most important source of energy in Tanzania is wood. According to a commonly quoted estimate, fuel wood accounts for about 91% of the total energy consumption of the country. Oil, the import of which eats up about a half of the total export earnings of Tanzania, constitutes only 7% of the energy consumption and hydro power, great potential notwithstanding, 2%.

The dominance of wood as an energy source is mainly due to the dominance of households as energy consumers in Tanzania. Households are estimated to consume 87% of the total energy, and fuel wood and charcoal are the principal sources of energy for around 95% of the total population. In practice, this means that the rural population (87% of the total) is almost entirely dependent on fuelwood, while around 80% of urban residents (13% of the total) depend on charcoal or an "energy mix" with other sources.

Industry, with a proportion of 8% of total energy consumption, mainly uses hydro power and oil, while transport (4.1% of the total) is largely dependent on oil. Almost two-thirds of the oil products are supplied to the transport sector; a fifth goes to industry.'

The present economic crisis is increasing rather than decreasing the importance of fuel wood. Electricity has always been confined to a **minority**. In 1979 some 90% of the electricity produced in the country was consumed in only seven major urban centres, Dar es Salaam alone consuming as much as 52%. It is also estimated that only 5% of the population has access to electricity. Kerosine, the only oil-based commodity used by households on a larger scale (for cooking in urban areas and lighting in rural areas), has become expensive like all other oil products. The price for 1 litre of kerosine went up from Tsh 0.53 in 1968/69 to Tsh 4.60 in 1982, and the rise has continued since then. This tremendous rise in prices has increased the demand for charcoal and fuel wood in urban centres and in turn has also increased the prices of these resources.

Thus, to the vast majority of people in the country the importance of wood for energy cannot be overemphasised. A research report on energy policy puts it like this:

...wood, like firewood or charcoal, will remain the principal source of fuel for the majority of people both rural and urban for at least the next three decades. The provision of trees to meet domestic fuel needs must be the principal focus of energy policy outside the industrial fuel sector.<sup>2</sup>

But the supply of fuel wood has not been able to match the demand and this has led to what has been called "the other energy crisis". That crisis is the subject matter of this chapter.

## EMERGENCE OF THE FUEL WOOD CRISES

The first energy crisis, over a decade ago, hit the developed countries and the tiny "modern" sector of the developing countries suddenly and spectacularly. The second drama, the energy crises of the rural areas in the world, took a much longer time to unfold. But just as the first crisis of 1973–74 was not only about the price of energy but also about politics and power, lifestyle and responsibility, similarly the second crisis too is much more than a mere rural energy issue. Wood which is used for fuel is also vegetation cover which has to be cleared for cultivation. Yet the vegetation is the habitat of other living organisms and helps to retain soil fertility and keep up the moisture of the climate. It is also a source of building materials and a medium for processing food. The availability of wood fuel has stark implications for the workload of women. The use of wood is influenced by the attitudes, technologies and purchasing power of different sections of the population. It is not only an ecological and technological issue but an economic and social one as well. In short, the fuel wood question in Tanzania and in most other African countries cannot be discussed in isolation but must be considered in the context of the whole question of rural development.

There are many factors behind the accelerating depletion of the forest resources. Only three which appear to be the most important ones will be mentioned briefly here: the growth of human population, the growth of livestock population and villagisation.

In a predominantly rural country like Tanzania, when the population increases the land resources come under increasingly heavy pressure. And the population of Tanzania is growing at an extremely rapid rate. It is expected to rise from 17 million in 1978 to some 35 million in 2000.<sup>4</sup> The current population density of slightly over 20 persons per square kilometre will then double to 40 per sq. km. Again, the population is unevenly distributed; among the administrative regions, Rukwa has only 6.6 persons per sq. km in contrast to Mwanza with 73.3 persons per sq. km or with Dar es Salaam Region, dominated by the urban agglomeration, with a density of



553.2 persons per sq. km. Variations between districts and wards in the rural areas are also wide.

Villagisation has accentuated the uneven distribution of population. In one of the most massive programmes of population redistribution in Africa, a major part of the rural population of Tanzania was shifted into nucleated settlements during the first half of the 1970s. As a result of the implementation of this policy, access to natural resources, which had been relatively abundant for individuals often became more competitive and scarce when the area for effective exploitation was reduced by villagisation. Intensive resource use which once was confined to the immediate surroundings of individual homesteads was now extended around clusters of homesteads which could consist of as many as 1,000 households. In several parts of Tanzania the sudden pressure on land created by villagisation must be seen as one of the main contributing factors to the fuel wood crisis.

In addition to the human population, Tanzania has a rapidly expanding livestock population. In the 1978 livestock census it was estimated that there were 12 million head of cattle, 4 million goats and 2 million sheep in the country. Cattle densities also vary. Mwanza has around 56 head per sq. km in contrast to less than 1 per sq. km in the Coast Region. The highest cattle numbers are to be found in the semi-arid parts of the country. Cattle keeping with the attendant use of fire has brought extensive areas under grassland since the beginning of the century and it has also opened up land previously "protected" by tse-tse flies. However, high cattle densities and overstocking seriously interfere with the natural regeneration and land degradation is already occurring in several parts of central Tanzania.

The expressions of the fuel wood crisis are manifold. For the common man (or more usually woman) the crisis of fuel wood begins to be felt when the earlier conveniently accessible wood is no longer available in the required quantities. As one moves further and further away from home, the time required to obtain fuel wood competes more and more with other domestic and economic activities, whether it be fetching water, cooking, agricultural work or simply leisure. With increasing distances the loads have to decrease, the frequency of trips must also decrease and the scarcity develops. In such a situation, the fuel is used either sparingly, or more efficiently if the technology is available. Substitutes may begin to play a dominant role.

Another aspect of the crisis is ecological. Natural vegetation from which most domestic fuel is obtained has many other functions. The vegetation covers the ground and protects it from the destructive impact of wind, rain and running water. It also increases percolation and protects the watersheds. The rotting of foliage from trees continues the cyclical return of minerals and organic matter (and the direct intervention of the roots of some plants even assists in nitrogen fixation) and in the process of **replenish-**

ment makes it possible for agriculture to be sustained. Disturbance of this trend results, in the absence of fertilisers or other technological innovations, in a crisis in agriculture.

But the increasing scarcity of fuel wood is felt in urban centres as well. There it is mainly reflected in prices. The charcoal consumption in urban areas has increased very rapidly since the mid-1970s.<sup>5</sup> Charcoal can be transported from as far as some 150 km away and made available to consumers. The price of charcoal was up to Tsh 175 per bag in 1982 compared to Tsh 40–70 just a couple of years earlier.

## WOOD SUPPLY AND DEMAND – THE OVERALL PICTURE

In this section we shall take a closer look at the figures on wood supply and demand in Tanzania and attempt a critical assessment of them. Such an exercise is essential because many figures used in discussion are based on very limited empirical evidence and on assumptions which may apply only in a few, if any, parts of the country.

### *Woodland and wood supply*

With a total land area of around 887 000 sq. km, Tanzania is at present officially estimated to have a forested area of some 430,000–440,000 sq. km. The maximum annual cut which can be renewed is around 19.6 million m<sup>3</sup>sw, out of which about 0.7 million m<sup>3</sup>sw is expected to come from planted trees.<sup>6</sup> However, statistics pertaining to the area of natural forest and its standing volume of trees originate from inventories conducted in the early 1970s. Forecasts based on these figures are bound to be unreliable, because they imply that no changes would have taken place during the last 15 years! Only about a quarter of Tanzania's forested areas have been inventoried during the 1980s and accurate statistics covering the whole country simply do not exist.

In addition, very little is known about the annual burning and clearing of forests for agricultural purposes. As fuel wood becomes scarce, the existing regulations are increasingly circumvented and there is a danger that even some forest reserves may end up existing only in name.

The productivity of the forests varies. Most of the natural forests which usually provide fuel wood and charcoal are in the woodlands, intermediate woodlands and bushlands.

The annual increment of vegetation in these areas is only 1–2 cubic metres solid wood per hectare and 50 m<sup>3</sup>sw when clear felling is practised.<sup>7</sup> Replanting estimates are based on a nursery replanting norm of 1,800 plants per ha and the mean annual planting target of 1975–1981. No consideration

has been given to the actual number of seedlings which survive in the reforested area. In many areas the survival rates are rather low. For example in a study conducted by the Institute of Resource Assessment in the rural areas of the semi-arid zones in 1983 it was found that even at its best the average survival rate was only around 50%.<sup>8</sup>

On the basis of the above considerations it must be concluded that the present figures on land to forest ratio do not give a fair picture of fuel wood supply potential in large areas of Tanzania. This is because the figures do not account for the rates of depletion, recovery and efficiency of replanting. Moreover, the actual rates of woodland and forest depletion are controversial, mainly because of the lack of a continuous data base over time. Very little systematic work has been done on deforestation rates in Tanzania and the figures most frequently quoted are either based on localised examples or merely on "intelligent" guesswork.<sup>9</sup> But all the information we have suggests that the figures exaggerate rather than underestimate the wood supply potential of the Tanzanian forests.

#### *Demand for fuel wood*

In the Five Year Afforestation Plan 1982/83–1986/87 the forecasts of the annual demand for fuel wood are based on a figure of an annual per capita consumption of 2.0 m<sup>3</sup> solid wood. Domestic consumption of fuel wood and charcoal, including both urban and rural households, is thought to amount to 1.9 m<sup>3</sup> sw per capita and non-domestic consumption such as tobacco curing, fish-smoking, tea drying, pottery and brick burning, to 0.1 m<sup>3</sup> sw per capita.<sup>10</sup> This gave a total fuel wood consumption of about 43 million m<sup>3</sup> sw in 1983 and thus about twice the rate at which natural woodlands were estimated to be able to supply it.

The per capita consumption figures of the afforestation plan correspond quite well to those assessed by Openshaw in 1970 and Nkonoki a decade later." However, Tanzanian consumption figures are surprisingly high when compared with those for other Third World countries where figures seldom rise above 1.0 m<sup>3</sup> sw per capita. But it should be remembered that the estimated annual per capita demand is an average figure. The demand is bound to vary as between regions, districts, villages and even within the same village depending on such factors as the availability of fuel wood, cooking habits and climate. Different fuel wood studies carried out in the country confirm this statement.

Gilliusson and Persson found in a study of Mwanza and Shinyanga that the rural household consumption varied according to the availability of fuel wood around villages." The average consumption of 0.71 m<sup>3</sup> sw per capita in both regions ranged from 0.43 m<sup>3</sup> sw in villages surrounded by no or very little forest/bushland to 1.51 m<sup>3</sup> sw in villages with plenty of forest/

bushland. In addition, supplementary energy sources such as cow dung and crop residues were also used to a much higher extent in villages where fuel wood was scarce compared to those villages with an abundant supply. In urban areas, where 97% of the fuel wood was consumed as charcoal, the study revealed an average household consumption of  $0.66 \text{ m}^3 \text{ sw}$  per capita with a range from  $0.57 \text{ m}^3 \text{ sw}$  in low-income groups (less than 500 Tsh) to  $1.41 \text{ m}^3 \text{ sw}$  in high income-groups (more than 1,000 Tsh/month). The non-household consumption in  $\text{m}^3 \text{ sw}$  per capita was estimated to be 0.045, 0.006 and 0.04 for poles, sawn wood and tobacco respectively.

Similarly, Margaret McCall Skutch found in her survey of 18 villages in Dodoma and Morogoro that fuel consumption varied greatly between different areas.<sup>13</sup> The average rural consumption for domestic purposes including cooking, heating and water heating was calculated to be  $0.97 \text{ m}^3 \text{ sw}$  per capita per annum. Villages which were "warm at night" (altitude below 1,000 m) used only  $0.63 \text{ m}^3 \text{ sw}$  per capita, while those that were "cool" used as much as  $1.2 \text{ m}^3 \text{ sw}$ . The need for heating in the cooler villages explained the difference. The nondomestic demand for fuel wood included local beer brewing, pottery making, charcoal production and other local crafts. Out of the total consumption of  $1.26 \text{ m}^3 \text{ sw}$  per capita, about 14% was for pombe brewing and 6% for other crafts using fuel wood. The survey did not include the use of wood for non-fuel purposes, the most important being poles for house construction. Shortages of poles was often mentioned as a big problem in villages.

The latest survey available at present, carried out by the Institute of Resource Assessment in 1983, revealed that the annual fuel wood consumption for all domestic purposes in the rural areas of the semi-arid zone ranged from 0.5 to  $1.8 \text{ m}^3 \text{ sw}$  per capita with a median of  $1.0 \text{ m}^3 \text{ sw}$ .<sup>14</sup> For some communities and households the use of crop residues and cow dung as supplementary energy sources was common. The substitution of crop wastes for fuel wood in areas of fuel wood scarcity had become more deliberate, a matter of need instead of convenience. In addition, the annual median per capita consumption for beer brewing was about  $0.10 \text{ m}^3 \text{ sw}$  and the annual per capita demand for building poles varied from  $0.06 \text{ m}^3 \text{ sw}$  in Mwanza to  $0.32 \text{ m}^3 \text{ sw}$  in Dodoma.

Summarising the results of the studies presented above, it appears that the official estimate for annual per capita need of wood energy may be somewhat overstated. However, there can be no doubt about the fundamental imbalance between fuel wood supply and demand in large parts of Tanzania, and, for the reasons already spelled out above, it is certain that the deficiencies in wood supply are rapidly increasing.

## ENERGY CONSUMPTION - ESTIMATES FROM THE SEMI-ARID ZONE

In order to give examples of the rural energy complex some results from a recent study in the semi-arid parts of Tanzania are discussed below.

The survey covered parts of Dodoma, Singida, Arusha, Shinyanga and Mwanza regions. Interviews were undertaken in 11 districts and a total of 28 villages were covered. In 15 of these villages 504 household interviews were conducted. The survey was carried out at the Institute of Resource Assessment, University of Dar es Salaam, 1982/83 as a part of larger FAO study.

### *Domestic fuel wood use*

Fuel wood was the main energy source in all villages for most purposes. In 22 out of 26 villages it was estimated that more than 95% of the households used fuel wood for cooking. However, it was often supplemented by crop residues and in some households also by charcoal or cow dung. In addition to preparation of meals, fuel wood was used for many other purposes as well, most importantly for heating but also for beer brewing, fish smoking, brick burning and pottery making.

Based on the survey of 504 households in 15 villages, the average consumption of fuel wood, mainly for cooking and heating was calculated to be  $1.0 \text{ m}^3 \text{ sw}$  per capita, with a range from  $0.5 \text{ m}^3 \text{ sw}$  to  $1.8 \text{ m}^3 \text{ sw}$ . The consumption rate was directly related to altitude. All six villages above 1,000 metres in elevation had rates above the median. This reflected a great need to use fuel for heating, in particular during the nights of the cool season, as well as the longer cooking time at higher altitudes.

The production of local beer proved one of the major local activities which utilised a considerable amount of fuel in certain areas. It was found to be a widespread activity all over the study area although the intensity varied between different villages. Brewing was registered in all but one of the household-surveyed villages with variations from 3 to 80% of household brewing, the median being 25%. Brewing depends mainly on fuel wood, but when there was a shortage supplementary energy sources such as cow dung and crop residues (e.g. cassava sticks, maize cobs, sisal leaves) were added. Consequently, a wide range was observed in the annual per capita use of fuel wood from  $0.02 \text{ m}^3 \text{ sw}$  to  $0.30 \text{ m}^3 \text{ sw}$  with a median of  $0.1 \text{ m}^3 \text{ sw}$ .

Brick burning is at present a periodic and relatively minor wood-consuming activity. It was reported to take place occasionally in 13 of 28 villages surveyed which were all located in Mbulu, Hanang, Iramba and Singida districts. In these cases brick burning was mainly done for village projects such as schools and dispensaries. However, if improved housing program-

mes were launched with burned bricks as main construction material the fuel wood requirements would rise dramatically. A rural house with two rooms and having an area of 40 m<sup>2</sup> would require some 10,000 bricks. A minimum of 3 m<sup>3</sup> sw would be necessary to burn this amount of bricks. Transformed to a single village with 350 households this would mean at least 1050 m<sup>3</sup> sw, representing a 20 ha clear felled area of woodland.

Pottery making and fish smoking are other rural activities creating localised demand for fuel wood. Although pottery making was taking place in 21 out of 28 villages, the proportion of households involved in the activity never exceeded 3.5% and the fuel wood demand was negligible. Fish smoking, on the other hand, creates a heavy demand for fuel wood. The fuel wood use per tonne of fish varied from 0.7 m<sup>3</sup> sw to 1.4 m<sup>3</sup> sw depending on the drying technique, type of fish and season of the year. Around larger and more important inland fisheries fuel wood is becoming extremely scarce and a division of labour has started to appear, for example, around most of the wellknown fishing sites in Lake Victoria. The forest located nearby has long disappeared and the fishermen have to buy their fuel wood. Partly because of this scarcity the prices for fuel wood have multiplied in the last few years. In 1982 a tractor-load of fuel wood cost Tsh 400.

More rarely fuel wood was mentioned as a source for lighting (four villages) and as a source for protection (two villages).

### *Charcoaling and other competing uses of wood*

Charcoal is not commonly used as a village energy source. In the survey it was registered in about 60% of the villages but it was used very sparingly and exclusively for cooking. In the household survey charcoal was present in seven out of 15 villages. In five of these villages a few households said they used it all the year round though their proportion never exceeded 10%. Between 5% and 43% of households used charcoal at least sometimes during the year with 14% being the median. Most of the charcoal users were people with a regular cash income, such as teachers and other government officials.

But charcoal is important for many rural dwellers as a source of income. Because of the growing demand for charcoal in the urban areas, its production is increasing in villages which are located either near urban centres or along roads to major marketing centres. In the survey area charcoal production took place in 40% of the villages. Interviews revealed that the scale of production had developed rapidly during the preceding five years, e.g. in Misigiri village in Iramba district the number of charcoal producers had increased during this time from 20 to 200. Unfortunately, due to the survey design no production figures were collected. However, it was observed that many of the charcoalers undertake production as a part-time activity during

the dry season and the trade is controlled by middlemen and is highly speculative.

Of the remaining competing uses of wood, the most important is for **building**. The annual per capita demand simply for replacement of old and destroyed building poles varied from 0.05 m<sup>3</sup> **sw** in Mwanza region to 0.27 m<sup>3</sup> **sw** in Dodoma region. Variations were closely related to housing design, quality of building poles and whether or not the area was inhabited by termites. In all villages people complained that it was more difficult now than five years ago to get hold of suitable building poles. Even in the rural areas building poles have become increasingly commercialised as evidenced by the fact that in more than half of the villages surveyed it was common for people to buy them. When shortage of trees starts to appear, it is also first noted in the shortage of building poles. Small trees and bushes can be used as fuel but building materials cannot easily be substituted by trees of inferior quality.

### *Collection*

Most of the rural households collect their own fuel wood from a number of sites including farmland, communally held bush, woodland or even from forest reserves. Over 90% of the households in the sample collected the lion's share of their fuel wood needs. However, in 8 of 15 **household**-surveyed villages people had started to supplement their own collection with the purchase of some fuel wood. Only in four villages were there households which purchased all their fuel wood, and their proportion never exceeded 5%. These households were usually headed by people with a salaried income. Six villages had households combining collecting and purchasing, ranging from 3 to 30% of all households.

In the study area, as in most parts of Tanzania, women are the ones responsible for bringing the fuel wood home, but they are often helped by children. Between 7% and 58% of the village households had children to help, the median being 30%. Children's participation depended on the number of them attending school. The contribution of men in fuel wood collection was very limited and took place only under certain circumstances, such as bringing home one or two small logs as they were returning from work. Adult males occasionally collected wood in 10 out of the 15 villages, with their rate of involvement varying from 3% to 18% of reporting households.

The percentage of households who regularly combine fuel wood gathering with other activities tends to vary, depending on the location of fuel wood collection in relation to the farms and on cultural habits. It also depends on the time of the year. In the dry season there is not much agricultural work and special trips can be made to collect fuel wood.

However, in four villages carts had made an appearance. In Mugunda (Singida), for example, 12.5% of the households were using carts to transport fuel wood; corresponding figures for **Kijota** (Singida), Mwamashele (Shinyanga) and **Sayaka** (Mwanza), were 2.5%, 8.1% and 2.5% respectively.

Distances to the sources of fuel wood vary **greatly**. In the **household**-surveyed villages averages ranged from 2.5 to 4.2 km with a median of 3.1 km. Distances may vary more within one and the same village than between villages. Individual households walked anything from 0.5 to 10 km each way to reach their collecting area.

The time spent on collecting fuel wood varied per trip from 20 minutes to six hours, with village averages between one and a half to four hours. Based on the assumption that all fuel wood bundles are brought home by adults, that such bundles are of average size and that a suitable consumption norm is used, it was calculated that the average time spent per week and per household varied from 2.6 hours to 10.7 hours. The findings of this study come close to those of other studies, e.g. 11 hours per week in **Usambara**,<sup>16</sup> 10 hours per week in **Mbeya**,<sup>17</sup> and 10–13 hours per week in **Iringa**.<sup>18</sup> Transformed into working days of eight hours per man-day this implies a range of from 17 to 70 wood-collecting working days per year.

### ***Perceptions about the fuel wood situation***

Some questions were asked in the villages concerning the perceptions as to whether there was a shortage of fuel wood, when such a shortage had begun, and what were the reasons for it.

In 18 out of 28 villages the village leaders thought a shortage did exist. Seven villages had just enough and three had a surplus of fuel wood. The main reasons behind the present situation were claimed to be the clearing of land for agricultural purposes and population increase. In Hanang and Mbulu the clearing of forest to eradicate tse-tse flies during the 1940s and 1950s was also given as one of the main reasons for the present shortage. To obtain an idea of the development of the situation, households were asked how the distances to fuel wood sources and the time spent on collecting fuel wood had changed over the past five years. Some 70% of households replied that both the distance and the time had increased.

### ***Supplementary fuels***

Besides wood and charcoal there is a wide range of supplementary fuels available and used. Perhaps most important are crop residues, including cassava and **cowpea** stems, maize and millet stalks and maize cobs. These residues were used mainly for cooking and brewing and, to a limited extent,



for heating and pottery **making**. In most cases they were used as supplementary fuels and their use was confined to the dry and post-harvest periods. The survey indicated that crop residues were found commonly used in 21 villages and for brewing purposes in 8 villages.

However, data were obtainable only in 7 out of the 15 **household**-surveyed villages. Here the percentage of households using crop residues varied from 6% to 68% with the average number of "bundles" used per week and per household ranging from 2.7 to 6.1. Whatever the quantities used, they obviously reduce the pressure on fuel wood, especially during the post-harvest periods of the year.

Another **popular supplementary** fuel is cow dung. Its use as an energy source was registered in 17 out of 28 villages. In five villages it was used for cooking, in 3 for heating, in 4 for brewing and in 5 for pottery **making**. In the communities where cow dung was used for cooking, between 28% and 47% of the households were actually utilising it. Cow dung is used mostly during the dry season and the number of times it is used per day, between once and twice, indicates how important it is. Important factors guiding its use are ownership patterns of cattle among households, the distance from grazing areas, the amount of cow dung that is used as manure, and whether cattle are penned or not.

Practically, the only oil-based fuel used in the villages was kerosine. It was used exclusively for lighting and was one of the most expensive energy sources. The number of households using it varied considerably between different villages and households, probably due to its availability and prices and the economic status of the household. At the **time** of the survey an average of 72% of households used kerosine. The number of users ranged in different communities from 10% to **100%**, and the household consumption per week varied from 0.7 litres to 2.2 litres, with an average of about 1.5 litres. Kerosine was being sold in 24 of the surveyed villages. Of these, 40% complained of irregularity in supply; as a result the price was prohibitive with variations from Tsh 6 to Tsh 20 per litre against the then official price of Tsh 4.50 per litre.

## AFFORESTATION

The main efforts to combat the phenomenon of forest depletion in rural Tanzania have been centred on tree planting. The depletion of forest resources was already recognised during the colonial era. In the 1920s and 1930s some attempts were made towards communal tree planting and conservation. In the 1936 report of the Provincial Commissioner of the Lake province it was stated that:

... the native authorities continue to plant more trees each year, either in the form of windbreaks or avenues along the roads, and today parts of Sukumaland have been entirely transformed as a result of these plantations. In some of the chiefdoms individual natives have been persuaded to plant their own trees around their homesteads, and have done so successfully. An attempt has been made to reserve hilltops from the ravages of cattle and goats. The native authorities in Sukumaland have declared a number of hills as reserves under native custom and the experiment promises to be a great success.<sup>19</sup>

However, little is known of the success of this and similar efforts.

After independence, the fuel wood problem was officially recognised by the Government of Tanzania and the first communal afforestation programme was launched in 1967/68. The programme was presented as part of building a self-reliant rural community. In the programme, the government was responsible for raising the seedlings, and distributing them free of cost to the people, who then had the task of planting and tending the trees. The progress seems to have been slow. According to some estimates from the Forest Division, a total of 6,437 ha were planted annually between 1973 and 1978 compared to the target of 129,000 ha.<sup>20</sup> On the other hand, since 1975 there has been an improvement in the average annual rate of increase of planted areas to the tune of 25% per year. The total area claimed as being planted in the period 1975–1981 is around 49,000 ha. However, it must be reiterated that this area is calculated on the basis of the output from nurseries.<sup>21</sup> A new afforestation campaign was launched in 1980, through the Adult Education Institute, to emphasise the importance of tree planting and to educate people as to how to grow trees. This campaign seems to have had more success. During field work of the Institute of Resource Assessment study 1982/83 it was observed that most of the people who had heard about the campaign, seemed to be aware of the problems as well as the possible solution, and also realised that the success of afforestation was important.

However, even if these efforts were successful in terms of their own targets, they would not be sufficient. The present Five Year Afforestation Plan 1982/83–1986/87 envisages a total planted area of 107,607 ha.<sup>22</sup> But fulfilling this target does not cover even half the requirements for one year alone. Over the time span of five years only about 10% of the demand will be met by a successful completion of the present afforestation efforts. Although the rate of tree planting has greatly increased during the last decade, the efforts must all be strongly stepped up. Sufficient funds have to be made available and geared towards village afforestation. At present only around 20% of the total funds in the forestry sector are spent on fuel wood plantations.

## CONCLUSION

It has been argued in this chapter that Tanzanian forest resources are being depleted at an alarming rate because of the ever increasing demand for fuel wood, and that efforts have not been strong enough to counteract this tendency. It also seems clear that, even though there are also other possible ways ahead, e.g. development of energy-saving cooking and heating instruments, tree planting must retain its major role. However, it is becoming increasingly evident that it might be more rewarding to combine the present afforestation efforts with other activities, the most important being conservation of natural resources. The degraded natural vegetation around villages should be regenerated. This points to the need for collaboration with other sectors such as agriculture, livestock and water. There is a false notion that foresters alone can solve the problem! Therefore, new strategies need to be developed in the wood energy sector. In the words of the Tanzanian Minister of Water and Energy, Al Noor Kassum, there is a

... need to develop stronger inter-agency co-ordination in all aspects of wood fuel development from tree planting to research, new technology development and work in the villages. By its nature the wood fuel sector perhaps more than any other energy sub-sector involves the efforts of many individuals and organisations.<sup>23</sup>

## NOTES

1. For a sectoral breakdown of the total energy consumption and estimates see United Republic of Tanzania, Ministry of Natural Resources and Tourism, *Wood-Based Energy for Development*, Proceedings of a National Seminar, Dar es Salaam, 1984. For other estimates, see Kilahama, F.R.B., *Wood as a Source of Energy for Domestic Uses in Tanzania*. Dar es Salaam, 1983, esp. pp. 25-35; Mnzava, E.M., 'Village Industries vs Savanna Forest', *Unasylva*, 33:131 (1981), p. 24; Nkonoki, S.R., *The Poor Man's Energy Crisis: A Report of the Tanzania Rural Energy Consumption Survey*. Institute of Development Studies, University of Dar es Salaam, 1981, esp. pp. 17-22.

2. International Institute for Environment and Development, *Report on Energy Policy in Tanzania*. London, 1980, p. 2.

3. United Republic of Tanzania, Ministry of Natural Resources and Tourism, *Tanzania Five Year National Village Afforestation Plan 1982/1983-1986/1987*, Dar es Salaam, 1983, esp. pp. 13-23. The estimate of the hectares needed is based on the assumption that total production is 50 m<sup>3</sup> of solid wood per ha in clear felling.

4. For further discussion, see Chapter 2 in this volume.

5. *Village Afforestation, Lessons and Experience from Tanzania*, FAO, Rome, 1980, p. 11.

6. United Republic of Tanzania, Ministry of Natural Resources and tourism op. cit. p. 17 (refer note 3).

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# 8. The Development of Agricultural Mechanisation in Tanzania

*Finn Kjærby*

I've been telling my people, "We've got to change, we must have better tools. But what are better tools: Not the combine harvester. If I were given enough combine harvesters for every family in Tanzania, what would I do with them? No mechanics, no spare parts . . . I shudder at the thought . . . We are using hoes. If two million farms in Tanzania could jump from the hoe to the ox plough, it would be a revolution. It would double our standard of living, triple our product."

[Nyerere].

## INTRODUCTION

### *Abstract*

President Nyerere has often made the case for the development of ox-cultivation in Tanzania. However, despite frequent policy statements and calls for ox-mechanisation, government efforts and budget allocations to the development of ox-mechanisation and the peasant sector at large have been negligible or insufficient, considering both the potential for animal traction and the recent mainly spontaneous expansion of ox-ploughing in the peasant sector. By contrast, well over half of the total agricultural budget has been allocated to the development and maintenance of large tractor mechanised state farms and agricultural parastatals, the performance of which has been poor in terms of output and cost efficiency by comparison with the peasant sector.

The next section of this chapter provides a general outline of the development of tractor mechanisation and agricultural parastatals and tries to relate this development to the present crisis. The third section traces the development of ox-ploughing since the colonial period. The background to the first and second expansion phase (the 1950s and the mid-1970s–1980s) is analysed and the role of government support as well as the potential for further development is assessed.

*The geographical limitation of mechanised farming*

Mechanisation in peasant agriculture in Tanzania (and elsewhere) is generally associated with particular farming systems which have reached a certain degree of intensity, i.e. medium to high intensity systems with grains, cotton, and legumes as the predominant crops. The degree of intensity of the farming system is mainly determined by population density<sup>2</sup> and also by the level of commercialisation, which presupposes access to markets or exchange. Thus, farming systems which depend both on subsistence and on cash crop production will be characterised by higher intensities than those which are predominantly subsistence-based.

Ox-cultivation is limited to the medium intensity grain farming systems of the higher altitude plains and plateaux with medium to high population densities found in the Southern Highlands (Iringa, Mbeya, Rukwa), in the Lake Zone and North-Central grain-growing plains (Mara, Mwanza, Shinyanga, North-Tabora, North Singida) and in Northern Tanzania (Arusha and West Kilimanjaro). Topography, soil conditions, rainfall, and lack of or removal of the natural tree and bush vegetation in these areas make mechanisation feasible. They contain the bulk of the country's cattle population, two-thirds of the tractor population and constitute some of the most important areas for commercial output of the major food crops of maize, rice, wheat, sorghum, legumes, and of cotton for export.

On the whole, there has been virtually no development in the peasant sector of agricultural mechanisation – and neither is there any real present potential for this – in most parts of the coastal, southern, central and western regions, including the mountain areas of the north-east, north-west and south-west. The former areas are characterised by low intensity bush or forest fallow systems with little or no cattle, while the mountain areas have high intensity farming systems with perennial cropping and small plots on steep slopes, making agricultural mechanisation unfeasible.

In the 1970s, the Ministry of Agriculture estimated that 85 % of the country's cultivated acreage was tilled by hoes, 10 % by ox-ploughs, and 5 % by tractors. Of this total cultivated acreage, only some 3 % was large-scale farming, i.e. state farms, estates, settler farms and large African farms, all of them tractor mechanised. Accordingly, only 2 % of the land tilled by tractors belonged to peasant farmers who hire tractor ploughing services.

Since then, the latter acreage is likely to have declined somewhat, while there has been an increase in the ox-ploughed acreage, at best up to 15–20 %. These are, however, rough estimates and only give the most general indication of the extent of mechanisation.

Nevertheless, nation-wide the potential for further expansion in ox-cultivation might seem huge as indicated in the quotation above from

Nyerere. In actual fact, for reasons of land-use, environmental conditions and lack of cattle, ox-mechanisation remains feasible only in certain regions, and even within these, large tracts or whole districts are unsuitable for one or another reason.

## THE DEVELOPMENT OF TRACTOR MECHANISATION AND AGRICULTURAL PARASTATALS

It was not until the 1950s that motorised mechanisation of cultivation, farm transport, and processing really took off in Tanganyika, initially on **foreign-owned** estates growing tea, coffee, sisal, tobacco and wheat. From the late 1950s to the late 1960s, the number of tractors rose rapidly and a number of private, commercial African farms of medium to large size emerged as an important source of marketed maize production in Iringa (Ismani) wheat in Arusha (Mbulu), and cotton in Shinyanga.

This emergent class of African capitalist farmers was mainly encouraged by the newly independent government through easy access to land, and to tractor credits from the co-operatives, the National Development Credit Agency (predecessor of the present Cooperative and Rural Development Bank), the private Tanganyika Farmers Association, and private tractor dealers, but they did not depend on extension services or on government financial support or back-up services. The mechanisation move was spontaneous and the farmers easily acquired the management skills by their own devices, or by observing neighbouring settlers where these were present. They obtained high returns on their investments, expanded rapidly, and proved highly competitive with their settler counterparts in the case of wheat farming in Arusha. Here the rapid growth in the marketed output of wheat mainly originated from African farmers who towards the late 1960s supplied the bulk of marketed **wheat**.<sup>3</sup> The Ismani maize-growing area in Iringa became known as the granary of **Tanzania**.<sup>4</sup>

The farmers achieved high capacity utilisation of their equipment by entering into share cropping or contract hire service arrangements with small farmers and peasants, thus increasing the latter's cropped acreages as well as their rate of commercial production. In areas with a too short tillage season for economic capacity utilisation, (especially Shinyanga and parts of Arusha), the tractor fleet was moved seasonally over long distances to areas with different rainfall patterns (Kenya and Kilimanjaro) to undertake contract ploughing.

This emergent class of farmers thus achieved high rates of profit and contributed by a substantial marketed output through efficient equipment capacity utilisation and self-taught but skilled management, and by having

access to an open land frontier. The main characteristic of this form of mechanised production was rapid land expansion, with only primary tillage and transport being mechanised, rather than increasing yields and profits through land investments, more comprehensive mechanisation of weeding operations and increased use of yield-improving inputs. The negative effects of this were heavy clearing of vegetation, leaving large tracts open for erosion, soil mining through monocropping and continuous use of inappropriate disc ploughs, land monopolisation, and alienation of grazing land from agro-pastoralists and **pastoralists**.<sup>5</sup> Land deterioration has been particularly severe in Ismani, but also in areas around Arusha and in lower Kilimanjaro.

During the 1960s, a limited number of government-run mechanised schemes were started, namely the capital-intensive settlement schemes and public tractor hire service schemes, as well as the co-operative mechanised Block Cultivation Schemes in Sukumaland. These rapidly turned out to be a **fiasco**.<sup>6</sup> The main essentials for efficient and profitable tractor utilisation were simply not there. These included according to a government study in 1968:

...competent management and strict supervision; trained mechanics, adequate workshop and repair facilities; skilled and responsible drivers; availability of cash and credit when needed; large fields and scale of operations large enough to utilize tractors fully; high value-per-acre cash crops of which the major **labor** bottlenecks can be relieved by mechanization; alternative sources of productive employment for **labor** saved by mechanization and additional productive uses for tractors when not being used on main cash crops."

The same study reported that the performance of these tractors has been appalling and that:

...the experience with these tractors (had) been so bad that it must be recognised that the assumptions which were made at the time that they were introduced were wrong and that no degree of tinkering with the organizational set-up can possibly make it work.

In Mwanza in particular "unoccupied land was only rarely immediately available", and in many cases "peasants who actually farmed the land chosen for the block schemes were simply told to **quit**".<sup>8</sup> Finally many farmers "turned to ox cultivation and it was concluded that 'there was no case for the introduction of tractors in areas where ox-plowing is established, these can perform the same function more **cheaply**'".<sup>9</sup>

A more cautious attitude was taken towards tractor mechanisation in the Second Five-Year Plan, 1969–74 and more encouragement was to be given to ox-plough cultivation and the design of animal-drawn equipment considered suitable for peasant farm conditions and utilising the potential of the large cattle population (some 12 million head of cattle in 1978).



In 1970 Ubungo Farm Implements Manufacturing Company (UFI) started to manufacture hand tools and ox-ploughs, with an annual capacity of 8,000 ploughs and a capacity utilisation of below 50 %.<sup>10</sup> The Tanzania Agricultural Machinery Testing Unit (TAMTU, now CAMARTEC) was revived and reoriented towards development and batch manufacturing of ox-implements.

In spite of this emphasis on ox-cultivation, the cautious views on mechanisation expressed in the Second Plan's documents were largely overtaken by events following the Iringa Declaration in May 1972.<sup>11</sup>

Although the document is often credited with giving priority to animal traction, it is rather ambiguous in terms of establishing priorities between animal traction and tractor cultivation. The emphasis placed on the 'modernisation' of farming and farming techniques through the gradual development of communal production was interpreted in practice to mean *villagisation* through a promise to make tractors and other modern inputs available. "Thus with the emergence of Ujamaa and villagization, mechanized tractor cultivation continued to be distributed to selected Ujamaa villages during the Second Five-Year Plan".<sup>12</sup>

Villages continued to get tractors from Tanzania Rural Development Bank loans, from Rural Development Funds, and through tractor hire services operated by regional or district authorities or by such crop authorities as the Tanzania Cotton Authority and the Tobacco Authority of Tanzania. In the annual peasant-day competitions, the best villages were rewarded with tractors. All this happened in spite of the fact that the villages had neither the infrastructural facilities, experience, and organisation, nor the economic capacity to support tractor mechanisation; in many instances the tractors turned out to be a burden on the villagers unless co-operative villages were able to get away with loan defaults.<sup>13</sup>

The operational life-span of the communal or village-owned tractors was short and their utilisation was totally uneconomic. The same applied to the establishment and periodic revival of the agro-mechanisation centres and tractor hire schemes of the District Development Corporations. Thus, the fiasco of public tractor schemes in the 1960s was repeated several times in the 1970s.

In the years after the Arusha Declaration of 1967, the pressures against private mechanised farmers began to be felt. A number of settler farms (coffee and wheat) and private estates were nationalised, while some settlers and private African farmers opted out of farming voluntarily because of economic or political pressures. With the implementation of villagisation, the operations of private African farmers were severely restricted (especially in Ismani) through partial redistribution of their land, and restrictions or discouragement in the use of hired labour. While some farmers went into transport, trading and other businesses in the sphere of

Table 8.1. *Estimates for marketed output of crops through official channels by type of production unit, late 1970s/early 1980s (%)*<sup>1</sup>

	Peasant (under 10 ha)	Medium (10–100 ha)	Large (100+ ha)	Private Estate	Public Estate
<b>Food Crops</b>					
Maize	85*	10*	5*	—	negligible
Rice	50	—	—	—	50
Wheat	—	—	-----5 <sup>a)</sup> -----	—	95
Drought Staples	95*	5*	—	—	—
Sugar	15 <sup>b)</sup>	—	—	—	85
Legumes	90*	5*	5*	—	—
<b>Export Crops</b>					
Coffee	85 <sup>c)</sup>	—	—	10	5 <sup>c)</sup>
Cotton	95*	5*	—	—	negligible
Sisal	—	—	—	50	50
Cashews	100	—	—	—	—
Tobacco	90	5*	—	5 <sup>d)</sup>	negligible
Tea	25 <sup>c)</sup>	—	—	70	5 <sup>c)</sup>
Pyrethrum	100	—	—	—	—
Seed Beans	—	—	-----100-----	—	—

Notes: \* Rough estimates; no precise breakdown available.

<sup>a)</sup> Formerly (early 1970) over 90 % of official procurement.

<sup>b)</sup> Peasant outgrowers at public estates.

<sup>c)</sup> Breakdown between smallholders and public estates estimated.

<sup>d)</sup> Formerly (early 1970s) 25 % of the total.

distribution, the remainder continued to operate through share-cropping and contract hire services, but at curtailed rates of profitability. This was because of more idle time spent in field to field travel, the increasing shortage and cost of diesel and spares, and periodic or permanent non-operation of tractors for lack of these inputs.<sup>14</sup> One of the effects of the deepening crisis has been that, while some 70–80% of the private tractors were operational in 1976–78<sup>15</sup>, the number had dropped to 50% in 1981 (according to World Bank Staff). Upon villagisation, private commercial production of maize in Ismani and wheat in Mbulu and Hanang virtually collapsed, while cotton production declined markedly in the Lake Zone.

Since the first nationalisations of the late 1960s, government, state farm, and parastatal ownership of tractors has grown rapidly at the expense of private ownership. Well over 90% of the tractors were likely to have been in private hands before 1967. Of a total of 5,127 tractors recorded by FAO/Kilimo in 1976–78, 48% were privately owned. Shinyanga (627 tractors) and Arusha (1140) regions together held 35% of the national total with 91%

and 80% respectively in private ownership. The three other big tractor regions are Morogoro (715 tractors), Kilimanjaro (498), and Tanga (490), together holding 33% of the national total. Here private ownership accounted for some 28% and parastatals (mainly sugar, coffee, wheat, and sisal estates) for some 57%.<sup>16</sup>

As the economic crisis has deepened, imports of tractors have tailed off to a virtual complete stop in 1980/81, but with limited import of Indian Swaraj tractors again in 1982–83 and assembly of the Finnish Valmet starting in 1984. Some of these tractors have reached private hands. Nevertheless, it is likely that the share of parastatal and state farm ownership as well as the turnover of equipment has increased further, because of further expansion of the nationalised sugar estates and a remarkable expansion of the Canadian-supported wheat complex of the National Agricultural and Food Corporation (NAFCO) in Hanang, now by far the largest and most capital-intensive state farm in the country.

Table 8.1 gives estimates for the marketed output of crops through official channels from peasant farms, large private farms and public estates to give an indication of the performance of the state-owned mechanised farming sector.

In terms of marketed food crops, the peasant sector supplies both a larger variety (legumes and drought staples included) and the bulk of dominant staples (maize and – less important – rice). Wheat is mainly consumed by high income groups in the urban areas. The table does not show that the peasant sector also provides the main food basis for some 85 % of the population, in addition to a substantial output of marketed maize and rice through parallel channels. As for export crops, it is obvious from the table that the peasant sector accounts for the bulk of foreign-exchange earnings.

The predominant contribution of the peasant sector, *vis à vis* the public sector, to total food production and foreign-exchange earnings in Tanzania stands in sharp contrast to the low share of budgetary allocations made by the government to support the peasant sector. The main support for production in this sector derives from the recurrent budget of the Ministry of Agriculture which finances administrative expenses as well as the research and extension services. Between 1974/75 and 1981/82 the recurrent budget declined by 25 % per cent in real terms. Research and extension services in support of the peasant sector have been grossly insufficient. In addition, this sector has suffered from poor transport and crop collection services as well as from lack of production incentives in the form of appropriate production inputs and consumer goods.

The decline in the recurrent budget corresponds with a rapid increase in the agricultural development or capital budget, 90 % of which over the period 1975/76–1981/82 was allocated to the crop parastatals (including the marketing crop authorities).

In the livestock sector a similar trend can be observed with respect to heavy imbalanced investments to the parastatal beef ranch and dairy sector. Over the 1975/76 to 1981/82 period, the parastatal livestock sector was allocated 78% of the total development budget to only 2% of the national cattle herd, while 98% of the cattle herd in the peasant sector was largely neglected in terms of support services (World Bank Staff estimates).

Overall during the 1970s, a significant part of the agricultural recurrent budget and the lion's share of the development budget have thus been allocated to the parastatal agricultural sector. Nevertheless, the **performance** of this sector has been inefficient and poor and it still remains in need of substantial rehabilitation funds.

Both in terms of foreign exchange and local resources spent, and by comparison with the neglected peasant sector, the foreign exchange and food output contribution of the parastatal farming sector has been low and stagnant. As regards the most efficient and largest NAFCO state farms, Mbarali Rice Scheme and the Basotu Wheat Complex, for example their increase in production has only been possible with high unit costs of production, compared to either private domestic producers or the landed cost of imported grain.<sup>18</sup> This grain, together with the output from the parastatal livestock sector, is mainly destined for consumption by the high-income groups of the urban areas.

Finally, the parastatal sector has been crucially dependent on foreign donor finance, in particular from the International Development Association of the World Bank, Canada, China, and Holland.

Motorised mechanisation of parastatal estate agriculture has thus been part and parcel of a strong general government bias towards this type of agricultural organisation – whatever official policy statements may proclaim to the contrary.

However, despite the government's favouring of tractor mechanisation and parastatals, and its failure to provide the peasant sector with services and investments, at the same time as the economic crisis has deepened, there has been – paradoxically it would seem – a rapid expansion in peasant ox-mechanisation. It is the background and nature of the development of this form of mechanisation to which we turn in the next section.

## THE DEVELOPMENT OF OX-CULTIVATION

### *The first boom in ox-cultivation and subsequent stagnation*

Ox-technology was first used in Tanganyika by settlers from around the turn of the century. In the 1930s and 1940s Africans began to adopt ox-cultivation in Mbeya (Kyela, Mbozi, Usangu, Rukwa), Iringa (Mufindi), Arusha, and in the Lake Zone (North Mara, Mwanza, and Shinyanga).<sup>19</sup>

Although the colonial government tried to discourage or restrict ox-cultivation after the war in the Lake Zone through the 'Sukuma Plough Rules', the adoption of ox-ploughing proceeded to expand rapidly throughout the 1950s in the Lake Zone (North Mara, Mwanza, Shinyanga), North Singida, Kondoa, Arusha, Mbeya, and Iringa (Ismani). By the end of the colonial period there were some 80,000 ox-ploughs in the country.<sup>20</sup>

As in other African countries, the early adoption of ox-ploughing was clearly linked with the development of a commercialised economy and in fact with circumstances resembling a 'boom'. In the earliest important expansion areas of Mbeya and North Mara, it was associated with the development of a market in food crops (rice and maize) through the opening of gold mines employing a large wage labour force.<sup>21</sup> Similar conditions came about in Iringa and Arusha through the development of estate farming and a market in food crops.

These areas, together with Kondoa and North Singida, were also important migrant labour areas. Thus, savings from wage employment and from profitable cash crops constituted the main source of capital for the purchase of oxen and ploughs, and the use of the technology was initially learned by working on settler estates, missions, etc. In Sukumaland increased cotton prices were an important factor in the adoption of ox-ploughing, together with the existence of an open almost treeless land frontier to the south-east into which extensive methods of ox-cultivation spread rapidly.<sup>22</sup>

In Arusha (North Mbulu) and Ismani the colonial government indirectly promoted the expansion of ox-cultivation and the subsequent adoption of tractors by granting planting allotments of 10 ha of land to Africans. But, the adoption of animal traction also spread spontaneously, without the provision of credit, ox-training centres or extension services for the promotion of the technology.

From around the early or mid-1960s and up to the mid-1970s the adoption of ox-cultivation stagnated. Over the last decade since villagisation, with the deepening of the economic crisis, it has once more accelerated to the extent of representing an adoption boom. An indication of this is presented in Table 8.2.

The table shows that over the 15-year period from Independence to villagisation (1975), the national plough population increased by only some 10-30,000 ploughs. During both the preceding decade (the 1950s) and the succeeding decade, it increased by some 70-90,000 ploughs.

It was during the period of declining expansion in ox-cultivation, and in particular after the Arusha Declaration of 1967, that government policies were in favour of animal traction. The Ubungu Farm Implements Factory (UFI) was set up to produce hand tools and ox-ploughs, TAMTU was reoriented towards developing appropriate ox-implements, and a number of Rural Craft Workshops (RCW) were set up under TAMTU in different

Table 8.2. *The number of ploughs in the ox-ploughing regions in Tanzania*<sup>73</sup>

Source	Number of Ox-Ploughs						
	(1) Agric. Dept.	(2) Min. of Agricult.	(3) RDD Survey	(4) FAO/ Min. of Agric.	(5) Min. of Agricult.	(6) RADO + Census	(7) Own Est.
Period	1956-61	1973	1975	1976-78	1982	1983	1984
Arusha	10,000	17,000	18,500	27,463	25,164	32,000	24,000
Dodoma	n.a.	n.a.	3,677	1,835	6,175	4,000 <sup>a)</sup>	4,500
Iringa	2,000 <sup>a)</sup>	328	2,170	n.a.	9,284	25,000	24,000
Ki'njaro	n.a.	118	381	1,166	3,720	1,000 <sup>a)</sup>	1,400
Mara	16,000	5,152	6,606	10,135	12,866	14,000 <sup>a)</sup>	15,000
Mbeya	13,000	16,325	19,492	18,676	24,485	21,000	21,000
Mwanza	4,000 <sup>a)</sup>	1,200	3,397	6,000	14,858	19,000	17,000
Rukwa	1,000	1,820	3,012	3,012	5,358	6,000 <sup>a)</sup>	6,500
Shi'yang	25,000	23,137	25,269	33,592	33,954	35,000 <sup>a)</sup>	36,000
Singida	10,000 <sup>a)</sup>	24,775	25,617	26,585	29,220	22,000	24,000
Tabora	5,000	6,288	6,588	33,536	8,137	34,000	29,000
Total	86,000	96,143	114,709	162,000	175,616	213,000	202,400

n.a. = no account

<sup>a)</sup> = own estimate

parts of the country to undertake batch production, training, and demonstration work in ox-technology. Under the Second Five Year Plan, ox-training centres (OTC) were established in most regions. Political leaders, and especially the President, frequently urged peasants to adopt ox-ploughing.

However, in relation to the potential in Tanzania for the development of comprehensive ox-mechanisation (namely the development of interrow weeding and ox-carting, as well as the further spread of ox-ploughing) and by comparison with investments in state farms, these efforts were but a drop in the ocean. Some of them were blatantly misdirected (e.g. setting up OTCs in coastal, southern and western regions with bush or forest fallow systems and almost no cattle). UFI produced less than 4,000 ploughs per year while imports were more or less stopped in the name of the import substitution, with the effect of reducing the supply of ox-ploughs.<sup>24</sup>

In areas with a lot of private tractors, ox-cultivation stagnated, taken over by the possibility of hiring tractors. Political promises, the granting of credit and rewards of tractors to Ujamaa villages constituted the main thrust of mechanisation policies towards the peasant sector, as reflected in the

modernisation ideology prevalent among the political leadership and the administrative bureaucracy. Thus, a FAO Mission Report on agricultural mechanisation stated that the Mission

**... found it extremely difficult to find any concrete evidence in the regions of a concerted effort to promote a wider and more intensive use of animal power. The program of establishing ox-training centers, mentioned in the Five-Year Plan, appeared to be virtually non-operative and little technical progress had been made at the village level beyond the use of the single furrow ox-plough.=**

In the Mission's view, “. . . ox-equipment has yet to be given a real chance to prove itself, even in those districts where there is a tradition and aptitude for its **employment**”.<sup>26</sup>

### *The second 'boom' in ox-cultivation*

During the past decade since villagisation when the economic crisis deepened, adoption of ox-ploughing has once more expanded rapidly and the number of ploughs has almost doubled from around 100,000 to 200,000.

The general conditions for the second boom seem to be quite the opposite of the favourable conditions of the first boom, which were easy access to land and expansion into open land frontiers, expansion into new cash crops (cotton, maize, rice, wheat) and high crop prices, savings from wage income and migrant labour, fairly easy access to ploughs, increased supplies of consumer goods and improved marketing and transport infrastructures. The general conditions of the second boom have been: insecurity of land tenure and closing in of the land frontier through villagisation, decline in the officially marketed output of cotton, tobacco, wheat, rice, and maize from the peasant sector, relatively depressed official crop prices, a decline in migrant labour employment and real wage rates, increasing difficulties in obtaining ploughs and declining supplies of consumer goods, and finally a serious deterioration in marketing and transport infrastructures towards the end of the 1970s, as compared with the pre-villagisation period. Most of these conditions are related to the growing crisis and they have no doubt hampered the potential rate of expansion in ox-cultivation. The catalysing factor for the second expansion has obviously been villagisation, but the crisis has also played a role.

Villagisation involved a concentration of the rural population, in many instances along roads following watersheds with less fertile soils. More significantly, the concentration of settlement and cultivated land has involved a change from extensive systems of fallow farming towards more permanent or annual cropping of the same fields, thus eliminating the previous system of natural regeneration of soil fertility and causing lower yields. In some areas a method of overcoming lower yields has been to

extend the cultivated acreage by means of hiring or acquiring ox-ploughs. At the same time, annual cropping has made ox-ploughing feasible in areas where the earlier bush fallow required hoeing or tractor-ploughing to break the land.

Villagisation also involved a partial, but not necessarily equitable, redistribution of land as well as the initial imposition of minimum acreages. In areas with tractor farming, the land holdings of the large capitalist farmers have been reduced and redistributed. In Arusha (Hanang and Mbulu) poor households have been allocated more land, but the percentage increase in land holdings has been considerably higher for middle and rich peasant households, and they are the ones adopting ox-cultivation.

Villagisation and associated changes such as universal primary education have imposed increased labour constraints which the wealthier households have tried to overcome by the adoption of ox-cultivation, ox-carts, and ox-drawn sledges. Available household labour time for productive field work has been seriously constrained by increased distances to fields and firewood sources, by withdrawal of child labour into education, and by the large amount of time spent on communal village projects, village meetings, and so on. In addition, the use of hired labour has been discouraged.

Older boys and young men find their prospects of acquiring land and profitable employment in agriculture exceedingly bleak. Traditional work parties mobilising youth for primary hoe tillage are breaking down, and the young people are migrating to the urban areas or finding alternative income possibilities through petty trading in scarce commodities. In such a situation of labour shortages ownership of a plough and ox-team is a common means of recruiting labour. Owners get their fields weeded or get people to operate their ox-teams in exchange for ploughing their fields.

Another important factor in the spread of ox-cultivation has been the change in cropping pattern and cultivation methods from the labour intensive ridge or mound cultivation of finger millet and root crops to maize and sorghum (e.g. Rukwa, Iringa, and Mara).<sup>27</sup> In Arusha, most of the wheat acreage was turned into maize production. Maize and sorghum lend themselves easily to the prevalent methods of extensive ox-cultivation.

Finally, there is no doubt that the concentration of settlement has facilitated the flow of information and the opportunity to learn about technology innovations. In addition, some areas (Iringa, Arusha) have benefited from supplies of ploughs directly to the villages by donor-funded regional programmes.<sup>28</sup>

The *crisis* has provided a further impetus for the spread of ox-cultivation and ox-carting. With the supply of diesel and spare parts for tractors becoming exceedingly short and expensive, hire rates for tractor ploughing have soared and tractor-hire cultivation has become difficult to get at the



proper time. Hiring out of ox-teams has become more profitable and provides an impetus for investing in ox-technology.

The development of a parallel market in food crops, and particularly in maize at high prices, has provided successful producers with high money incomes. Because of the shortages of commodities to spend money on, cash has been available for investment in ox-technology which in turn is a means of expanding cultivated acreages further. Increased distances to fields, together with deterioration in motorised rural transport (with the grounding of lorries and tractors), has also led to increasing adoption of ox-carts.

### *The role of government in promoting ox-cultivation*

The role of government institutions in promoting animal traction during the recent phase of expansion is concerned with research and technology development and extension services as well as the production, distribution, and marketing of the technology.

The two main institutions concerned with research, development, testing, and demonstration of ox-drawn implements are Uyole Agricultural Centre (UAC) in Mbeya and the Centre for Agricultural Mechanisation and Rural Technology (CAMARTEC), formerly TAMTU, in Arusha. These institutions are large, bureaucratically organised parastatals and considerable emphasis has been put on institution building as opposed to solving problems in the field.<sup>29</sup>

The focus has generally been on academic and theoretical research and on unpractical isolated development and experimentation with inappropriate prototypes rather than on adaptive research and development under peasant farming conditions, with cheap, durable, simple, and appropriate implements which can be used on peasant farms to solve the most serious labour constraints beyond primary tillage, especially weeding. Thus, only TAMTU's ox-cart design has gained some popularity in Arusha region, while other TAMTU implements (double furrow plough, planter, harrow) are too heavy, too sophisticated, and too difficult to operate to stand any chance of adoption on peasant farms. The only improved implement which has been adopted on any scale in Tanzania is the ox-cart. Most of these are manufactured by private craftsmen and workshops using local designs and secondhand car wheel sets.

The ox-training centres (OTCs) set up under the Second Five-Year Plan have been the main recipients of the so-called improved equipment available in the country, i.e. the inappropriate prototypes from TAMTU or the ridgers and inter-row weeders imported by UFI from India. The OTCs are on the whole inoperative, holding stocks of unused, broken or rusting equipment. An important constraint on the spread of improved implements

and methods of mechanized cultivation (e.g. in weeding) has been the failure to introduce appropriate prototypes, which have proved themselves on peasant farms in other African countries, and the failure to let peasants test these under their own farming conditions.

In general, the approach by means of institution building and OTCs has had little impact, perhaps with the exception of the costly EEC-funded Iringa Oxenisation Project which has now been terminated. The OTCs (and most likely the proposed Farm Service Centres) will, of geographical necessity and because of transport constraints, remain focal isolated points from which little diffusion can be expected. The idea that peasants lack knowledge of training oxen is misconceived, since the knowledge of ox-training has spread spontaneously without government support.

The extension services have had little to offer because there was no appropriate equipment to demonstrate. Their experience and training are consequently poor, and in any case, there are at present no incentives or controls to ensure that they actually visit farmers. As one extension officer recently put it: "Working as Bwana Shamba for the Ministry of Agriculture is like being on holiday".<sup>30</sup>

To sum up, the research, development, and extension efforts of the government have had little impact on the development of animal traction in the country. The same cannot be said about government-controlled manufacturing, distribution, and marketing of ox-ploughs.

UFI has until recently been the only, and still is by far the single largest, manufacturer and sole importer of ox-ploughs in Tanzania. Up to 1983 the supply of ox-ploughs and spare parts was far below the rising demand and the monopoly distribution of ploughs by Regional Trading Companies (RTCs) was rationed by means of a bureaucratic allocation system from national down to village-shop level. Although the system has functioned in some regions, there have been problems with misallocation of supplies in relation to the buying season, withholding of stocks in RTCs because of unpractical distribution and marketing regulations, leakages of ploughs and spares to black-market dealers selling them at two or three times the official price, etc. The overall effect has been a serious shortage of ploughs when demand was high, high transport costs of ploughs from RTC outlets to villages, and unofficial sales of ploughs and spares at prohibitive prices.

With new management and resources concentrated in UFI in 1983 – partly with Swedish assistance for steel imports – the production of ploughs suddenly shot up. From around this time, ploughs were also imported from Zambia and Zimbabwe under various SADCC trade agreements. In 1985 there were reports of stockpiles of ploughs at various RTCs. However, recent information from Iringa and Arusha confirm that restrictive regulations of allocation and sale are still in operation. Individual buyers are turned away, and ploughs can only be sold in batches in the villages; but the

villages either lack funds or are not allowed to acquire ploughs because they have accumulated debts. In Arusha, peasants complained about the lack of ploughs and the prohibitive transport costs, while the RTC had large stocks of ploughs.

## CONCLUSION

Since villagisation, Tanzania has experienced a fairly rapid expansion in ox-ploughing. This development has come about as a spontaneous peasant response to increased labour constraints and to changes toward intensified land-use and new cropping patterns under which ox-ploughing and the adoption of ox-carts have been means of relieving labour constraints and costs in primary tillage and transport, as well as of extending the cultivated acreage. The extension of cultivated acreage involves a further constraint in weeding a larger acreage. If that constraint is not overcome, yields may actually be reduced.

The research, development, and extension services which were supposed to promote animal traction, have remained isolated within their bureaucratic institutions and out of contact with the peasant sector. They have been oblivious of the real constraints, as well as of the potential of ox-farming, with respect to the development of more comprehensive ox-mechanisation (in particular weeding or inter-row cultivation) and the further spread of ox-cultivation to the less wealthy majority of peasants.

**Although** villagisation and related changes constitute an important reason for the recent spread of ox-ploughing, villagisation has at the same time imposed major constraints on its further expansion, as availability of grazing and land for fodder production has been seriously reduced and cattle have been moved out of the dense cultivation zones in the villages, thus separating crop and animal production. There is consequently a need for using lighter and smaller ploughs which can be pulled by only two oxen, instead of the present heavier ploughs which require four oxen. The research and development sector seems oblivious of this problem and concentrates on the development of over-heavy implements like the Uyole tool carrier and CAMARTEC's double-furrow plough which require a team of 6-8 oxen.

One effect, it seems, of the constraints on ox-cultivation is that skilled and resourceful ox-farmers rely on their own devices and experimentation and are developing improved methods of ox-cultivation and animal husbandry. These comprise dry-season ploughing, parallel row planting, inter-row weeding and throwing ridges with single-furrow ploughs, fodder procurement and even fodder production for supplementary feeding of draught oxen, more use of veterinary drugs for draught oxen, increased application

of manure when ox-carts are acquired, fitting simple wheels to traditional sledges to increase loading capacity, etc. But again the research and extension services are failing to catch up with these innovations and are generally ignorant of their existence.

The final question is whether two million farms (now 3.5 million) in Tanzania will be able to jump from the hoe to the ox-plough, implying a revolution, doubling the standard of living and trebling the product, as Nyerere would have it (cf. our introductory quotation).

Worked out on the basis of the existing total numbers of oxen and bulls in the main cattle areas with ox-ploughing, and using an ox-team factor of 3.5 oxen per plough as the present country average, the existing potential plough population is some 400,000 ploughs, i.e. double the present number of ploughs actually in use." However, this potential is unlikely to be achieved because of the uneven distribution of oxen, poverty and lack of interest in the technology, or shortage of grazing for oxen and suitable fields. Adoption of ploughs is not a revolution. Output from successful ox-ploughing households is not likely to be raised very much under present circumstances and constraints. Often it seems rather to be a means of preventing production from dropping further.

The most positive impact of animal traction would seem to lie in the development of comprehensive ox-mechanisation based on a light and cheap tool system for two oxen only. The most important thing here is to make cheap, light and appropriate weeding and transport equipment available for testing and sale out in the villages. Mechanised weeding and transport could relieve some of the most serious labour constraints of women in hoe weeding and head portage.

At the moment, however, it is difficult to foresee such a development. It would require changes in village settlement and land-use, development of fodder crops, efficient veterinary and extension services, and a complete reorientation of the research and extension sector and of the manufacturing and distribution sector. This is unlikely to happen, given the present vested interests in state farming and parastatal institution building, which consumes the lion's share of the agricultural budget.

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(3) Regional Development Director's Survey (1976): Kamati Maalum ya Uchunguzi wa mahitaji ya zana za **Kilimo** nchini Tanzania 1975-76.

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(5) Calculated by Mr. Kayumbo, updating (2) and (3).

(6) Own data, collected from regional and district offices, November 1983.

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# 9. The Green Revolution in the Southern Highlands

*Torben Rasmussen*

## INTRODUCTION

Some regions in Tanzania have seen a quite remarkable growth in agricultural production, even during the present crisis. These include the highland areas of Iringa, Mbeya, Rukwa and Ruvuma regions, also called the Southern Highlands.

Development of marketed peasant production has historically taken place in fairly small areas with ecological conditions favourable for a certain crop. Though some parts of the Southern Highlands can grow a number of traditionally important cash crops, the area remained marginal in the national economy because of very poor infrastructure. Only high priced crops like coffee in Tukuyu and pyrethrum in the highlands of Iringa region could be marketed profitably. The construction of the Tazara railway and the Tanzam road at the beginning of the 1970s removed this obstacle.

The state and foreign donors provided other incentives to development than the infrastructure. The disadvantages of poor soils and long transport lines of the Southern Highlands were partly removed by the government policies of pan-territorial producer prices and subsidisation of fertilisers. The donors financed projects which provided the inputs for the peasants, often through big credit programmes.

In large parts of the Southern Highlands the main source of cash income in the 1960s was migrant labour, as this was the easiest way of getting enough money for taxes and a few necessities. As a consequence, the development of agriculture was hindered by lack of manpower. After taxes were abolished in 1968 and with the real wages of migrant work decreasing during the 1970s, the peasants chose to stay at home and farm.

While most earlier agricultural expansion had taken place in areas with fertile soils, much of the Southern Highlands is characterised by land with poor to moderate fertility. The introduction of chemical fertilisers helped increase the productivity of these poor soils. Moreover, the combination of a stable rainfall and altitudes above 1500 metres made the area suitable for hybrid maize.

The green revolution, which is a combination of hybrid maize, chemical fertilisers and insecticides, has caused a dramatic increase in maize produc-

tion. From being an area in balance in relation to supply and demand for maize the Southern Highlands have turned into a surplus producer, with a total marketed production of some 250,000 tonnes in 1983. In the areas suitable for maize this crop became dominant, both for food and for sale.

Contributing to the increase in maize production were some big increases in real producer prices of maize in the mid 1970s, and the National Milling Corporation increased its intake considerably in the late 1970s. Later private traders increased their share of the maize marketed. The main reason for this was the big national deficits in maize supply even in some rural areas towards the end of the 1970s and into the early 1980s. These food deficits outside Dar es Salaam were not met by the National Milling Corporation (NMC), and this has led to an expanding private trade. A major part of the marketed production from the Southern Highlands has gone to deficit areas in the central and northern parts of Tanzania. This has benefited the producers in the Southern Highlands both by increasing prices above the official price and in the way of more marketing channels.

In the following sections we go further into the development of maize production in one region, Iringa, where we shall see how the impact has been among the peasants involved in maize production. Later, we shall turn to the consequences for the rest of the economy, including consumers, traders and the state.

## MAIZE PRODUCTION IN IRINGA REGION

From a high level in the late 1960s the marketed production of maize in Iringa region dropped sharply in 1971, as shown in Figure 9.1. In the late 1960s and early 1970s quite large amounts of maize were marketed from Ismani, which lies in the northern part of the region in a semi-arid agro-ecological zone. The production took place on small capitalist farms using tractor and ox-mechanisation and the method of cultivation was bush-clearing wherever the fertility went down. The farming had almost exhausted all the available land, when the forced introduction of ujamaa production effectively put an end to the increase in production. The area is now semi-desert.'

After some years of low production of maize in the mid-1970s, partly caused by the villagisation programme, an expansion gained speed in the late 1970s. This time it was the higher areas of the region which started to market the major part, using the hybrid maize technology.

The trend of official marketed maize shown in Figure 9.1 is like the tip of an iceberg. Already in the 1979/80 marketing season we found that on average only one-third of the marketed maize went through the NMC, which meant that the total marketed production was almost 90,000 tonnes



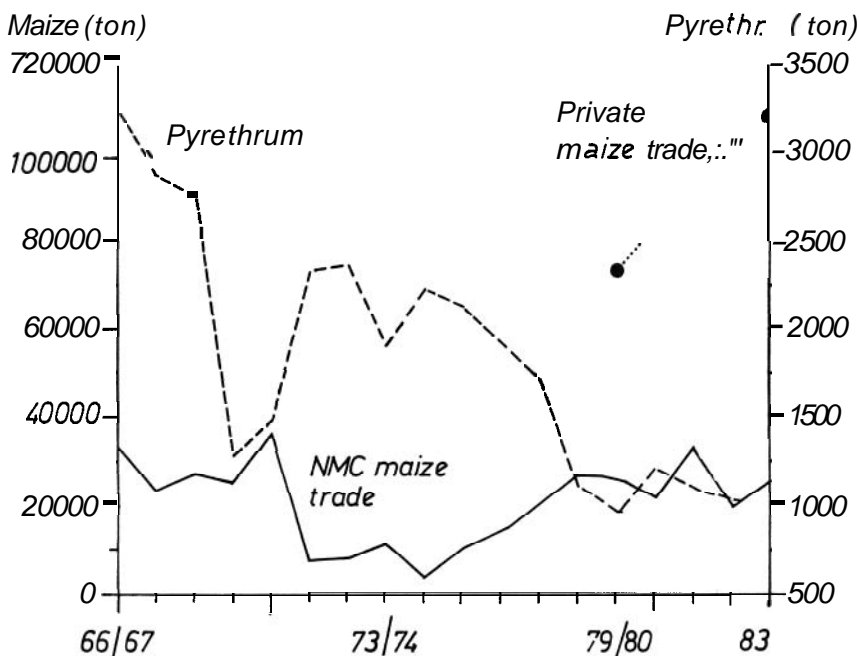


Figure 9.1. Marketed maize and pyrethrum in Iringa region.

with a value at official prices of Tsh 90 m. Estimates from 1983 put the official marketing at 20 % of total marketed **production**.<sup>2</sup> There are no ways of obtaining reliable estimates of the turnover in the private maize trade, and the figures only indicate a possible 'order of magnitude'. There is no doubt that the private market accounts for the biggest turnover of agricultural produce in the region, with a size of Tsh 200-300 m, counted in producer prices.

The highland areas in Iringa suitable for hybrid maize are a long belt in the southern part of the region. At the beginning of the 1960s the world market price of pyrethrum rose, and the production, which until then had taken place only on big farms, was extended to smallholders. The crop gives best yields at high altitudes, and it was quickly adopted by most peasants in the area, as the only alternative income to migrant labour. The real price of pyrethrum declined through the 1970s, and as the peasants started to see the possibilities of getting a cash income from maize the production of pyrethrum dropped.

## THE NEW MAIZE TECHNOLOGY

The introduction of hybrid maize and other inputs began in the early 1970s in **ujamaa** villages, and many of them, especially in **Njombe** District, managed to obtain quite good results. Yields reached 1,000 kg per acre, where private producers had yields of 300 kg per acre, using neither hybrids nor **fertiliser**.<sup>4</sup> Later most **ujamaa** production broke down, but the impact had been that many peasants had learned how to grow hybrid maize. After villagisation the National Maize Programme started providing free inputs to the farmers, but it was taken over by the National Food Credit Programme in 1979, when it was decided that peasants should be able to repay the input costs. The credit was channelled to the villages through the Tanzania Rural Development Bank (TRDB), and the programme was financed by **USAID** and **IDA**.<sup>5</sup>

Hybrid maize can only grow in areas above 1,500 metres; it has a long season and needs a high rainfall. Under these conditions, which prevail in the highlands, it will **outyield** local varieties under most conditions. Hybrid maize is very responsive to the fertility of the soil, and it pays to give it sufficient nutrients. In the package promoted by the TRDB the fertilisers consisted of 50 kg of triple super phosphate (TSP) and 100 kg of calcium ammonium nitrate (CAN), which together with 10 kg of hybrid seed should be used on one acre. Lastly an insecticide, DDT or endosulphan, was included to fight stalkborers. A total package cost Tsh 320 in the 1979/80 season, including interest to the TRDB. Transport was paid by the government.

In the 1978/79 season around 70,000 packages were given as loans from the TRDB but thereafter the number fell, reaching some 15,000 in 1982/83, as the available finance diminished due to low repayment rates. A large proportion of the loans went to village communal fields, so the number of peasants who benefited directly on their own fields was smaller. In 1979/80 a total of 117 villages obtained loans from the TRDB for maize inputs. This corresponds to 20% of all villages in the region, but in the highland areas around 40% of the villages received loans. Those who did not get loans had the possibility of obtaining inputs from the Tanganyika Farmers Association, which has branches in Iringa and **Njombe** towns. Many villages collected money and bought for many peasants together, since the transport was then paid by the District administration, as part of the government subsidy of fertilisers.

The widespread diffusion of the use of biochemical inputs for maize is shown by the fact that, in the 1979/80 season, 86% of all farmers in a sample of 6 villages used some, while the percentage increased to 89 in the 82/83 season. Most popular were insecticides, which were purchased by 76% of

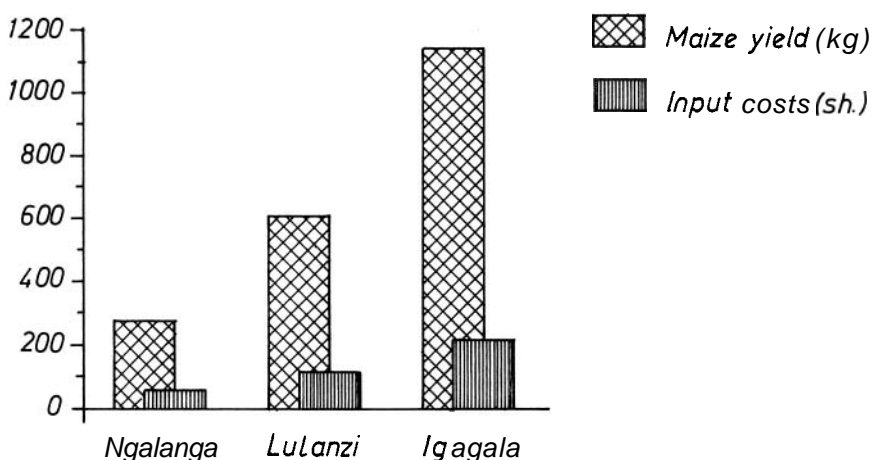


Figure 9.2. Maize yield and input costs per acre 1979/80.<sup>6</sup>

the sample and TSP used by 58%. Only half the peasants used hybrid seeds, while 42% used CAN.

On average the peasants spent Tsh 392 on buying inputs for maize in 1979/80. However, in the villages with loans from the TRDB the average was Tsh 431, while in the two other villages the average was only Tsh 151. Most of the peasants obtaining loans used the whole package, while almost all the others only used parts, fertilisers and/or insecticide. The hybrid seeds were found to be too expensive by the peasants paying cash, though they were the most important part of the package. Though fewer villages obtain loans in 1982/83, the average purchase of inputs per household rose to Tsh 739, expressing an increase in prices since the physical amounts used were practically unchanged.

## THE IMPACT OF BIOCHEMICALS ON PEASANT AGRICULTURE

### *Productivity and income*

The impact of the green revolution depends on the level of adoption of the biochemical inputs used in maize production. In Figure 9.2. we have shown data from three villages typical of the different production systems in the highlands of Iringa Region. The average yield per acre differs from 250 kg in one village to 1,146 kg at the top, with costs of inputs ranging from Tsh 58 to Tsh 216 per acre.

The yield of maize in Ngalanga is not much higher than might be expected with no inputs. Very little maize is marketed, and the net cash income is

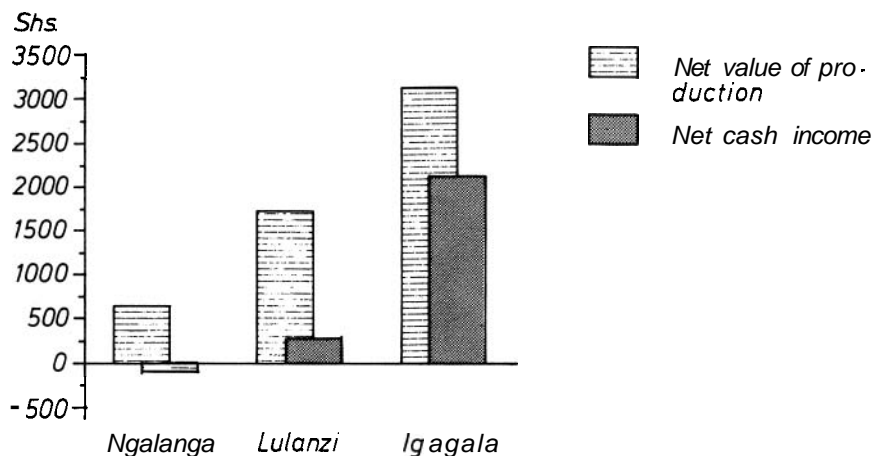


Figure 9.3. *Income from maize per household.*

negative, indicating that the cost of inputs exceeds the value of the marketed production (see Figure 9.3). Maize production is thus subsidised by other income. The maize production is for subsistence, and the fact that the peasants have started to use inputs in spite of the drain on cash, shows that otherwise they do not get enough food. Villagisation has put such pressure on land that, without some use of chemical inputs, food production is endangered.

In Lulanzi the peasants on average use one-third of the input package per acre, and the yield is bigger than in Ngalanga. One-third of the production is marketed and there is a small net cash income from maize. Most of this income, however, is used for hiring tractors and oxen.

In Igagala the maize production has developed into a commercial venture, with 72% of total production marketed. The input used here has reached two-thirds of the recommended package, and practically all peasants used hybrid seeds.

The data from the three villages show how it pays to use inputs, especially if the amount used approximates to the whole recommended package. Net income per working day in Igagala is three times as high as in Ngalanga and is of the same magnitude as the minimum daily salary that year. This analysis is based on official prices. Using the actual prices the peasants received on the parallel market, the net income is even bigger. A peasant in Igagala invested on average Tsh 158 more than the Ngalanga peasant in biochemicals per acre, and that gave him an increase in production with an official value of Tsh 871. With a bigger use of inputs and a bigger yield, the labour use per acre increases, but still the return on the capital invested in

Table 9.1. *Acreage, workforce, input use, and production, 1979/80*<sup>a</sup>

Acreage group acre/household (hh)	Percent of hh.	Work- force*	Input cost/ acre Tsh	Net return/ acre Tsh
0-2	12	1.9	87	304
2-4	48	2.3	108	397
4-6	24	2.6	140	363
6-8	7	2.8	68	239
8 and above	9	3.5	147	473

<sup>a</sup>) Adult labour equivalent.

biochemicals is several hundred per cent. Also the biochemical inputs increase the productivity of land, which is important as land is becoming increasingly scarce. Lastly, they increase the return to labour and income levels.

The best performing villages in our sample are those which get loans from the TRDB. The loans ensure that hybrid seeds and a certain amount of other inputs are used, and this is a precondition for the good yields. The peasants who do not get a loan use less inputs and get a much poorer result. Another reason for the difference in both input use and effect is experience with biochemicals. In Igagala the peasants had on average used biochemicals for more than seven years, while in Ngalinga only for two years.

### *Income distribution*

The benefits from the adoption of biochemicals are very unevenly distributed between villages. A key factor is the distance to the district town. The further away the village, the more difficult it is to market produce and procure inputs. With increasing shortages of fertilisers, and transport services declining, the more outlying villages have problems entering the commercial circuit. It did not help that the TRDB for obvious reasons preferred to give loans to villages which had already begun some commercialised production of maize.

When we look at the different groups of peasants within the villages, we see that the biochemical inputs are being used in equal intensity by small and big farmers. Table 9.1 shows that the big maize farmers have larger workforces, and this is most often because they are polygamous households. But the intensity of input use, measured as the cost per acre, does not differ significantly between the small and the big farmers. Also the net return per acre is of the same magnitude in the different acreage groups.

Table 9.2. *Income, input use, and credit. 1979/80 (Tsh)*<sup>9</sup>

Net cash income per household	Purchased inputs		Total	Credit as % of total
	cash	credit		
0 to 500	52	156	207	75
500–1000	79	174	263	66
1000–2000	91	96	187	51
2000–3000	58	256	314	82
3000–4000	289	310	599	52
4000–6000	247	227	473	48
6000 and above	690	314	1,004	31

Table 9.3. *Maize production among male and female producers in Igagala.*<sup>10</sup>  
1979/80

	Male	Female	Producing together
Number of producers	10	15	9 (four couples)
Acreage/producer	2.1	2.0	1.5
Yield per acre kg	1,071	890	1,283
Input costs/acre Tsh	187	149	246
Total prod./producer kg	2,250	1,780	1,925
Net cash income/producer Tsh	1,248	494	1,043

The capital intensity in production is the same for the different acreage groups, so the main determinant of the total income for the households is the labour force available in them.

The richer households use more inputs per household than the poor, and they also get more on credit in absolute terms, as shown in Table 9.2. The policy of loans in all villages was one package per able-bodied adult found to be a reasonable farmer, and this included women. The richer households thus get more credit not because they are rich, but because they have more adult members. In relative terms the poor get a bigger share of their total inputs on credit than the richer. The maize inputs and the credit have reached the poorer sections of the peasantry.

The male and female producers have about the same acreage, but the men use more inputs and get a higher yield per acre. Because the women have more obligations for the supply of food to the family, they sell a much smaller proportion of their production, and therefore end up with less than half the cash income of the men. But it is noteworthy that the biochemicals

Table 9.4. *Development of grain production and cash income in Southern Njombe 1969, 1979 and 1982*<sup>13</sup>

Yearly income	69/70	79/80	82/83
Grain production/househ. kg	310	2,128	2,241
Cash income/househ. Tsh	405	2,327	6,176
Cash income constant 69/70 prices	405	791	970
Cash income as percent of yearly minimum salary	20	40	86

Note: Production is valued at official prices.

have actually reached the women, and that they can now also get a cash income from food production. In Igagala village 28% of all loans went to women in the 1979 season.

#### *The changes in the production system*

The increase of productivity in maize production has fundamentally changed the crop production in the highland areas of **Iringa** region. Back around 1970 food production consisted of many crops, with maize, wheat, finger millet, sweet potatoes and **cowpeas** grown by almost all households, and with hardly any food **surplus**.<sup>11</sup> In 1979 maize accounted for three-quarters of the area planted with annual crops. Land use has changed from a system providing food security by diversifying into many crops, to one which secures food by intensifying into maize. Overall cropped acreage has not changed from 1969 to 1979, and stands at around 5-6 acres per household. The use of fallow, however, has gone down because of the land pressure partly created by villagisation, and most fields are now cropped annually.

One side effect of the cropping system now dominated by maize is that, although food production has increased tremendously, the nutritional value has decreased because of the dominance of maize in the diet. A survey done in part of the Highlands showed that many children were **malnourished**.<sup>12</sup>

Many peasants have learned how to use biochemicals through the experience with maize, and have used this knowledge in the production of Irish potatoes. Several peasants have started to plant certified potatoes and to use fertilisers, and this type of crop production is by far the most profitable in the area.

The change in production and income from 1969 to 1982 for one area in Southern **Njombe** is summarised in Table 9.4. The impact of the green

revolution is clear, as grain production has increased more than sixfold from the late 1960s to the late 1970s. From then on production has been stagnant, and this has been due to problems in getting inputs, including less loans from the TRDB. The peasants' cash income almost doubled in real value up to 1979, and though production then stagnated the prices of maize continued to increase, so that the cash income also at the beginning of the 1980s could more than keep pace with inflation. Almost half of the total cash income is from maize, either sold directly or used for brewing pombe, a maize **beer** which is sold both locally and to the towns.

A central issue in a former migrant labour area is that the relation between farm income and wage income has become more and more favourable for the peasants. With an average up to half the men away on migrant labour in the 1960s, there could be no surplus production and no local development, as the women at home were fully occupied producing food for the family in an agricultural system with very low productivity. Besides covering subsistence needs the farmers were able in 1979 to obtain a cash income equal to almost half the government minimum salary, and in 1982 almost the full minimum salary in cash. The scarcity of food in the early 1980s has meant that food producers have been able to increase their income very substantially relative to wage-earners.

The increased incomes in the area have among other things been used for improved housing. Many peasants are also investing in pigs and draught oxen. Cattle-keeping has increasingly become a problem, because it is difficult to keep cattle in the villages. For this reason very few peasants have been able to integrate cattle-keeping and crop production by using the manure. Those who did, by using hybrid seeds with animal manure, got excellent results. Only 22% of all households possessed cattle, and thus the scope for increasing integration of cattle and crop production is small, at least in the short term.

The adoption of biochemical inputs has enabled the peasants in the highlands of Iringa region to intensify their land use, and to increase production several times from the same land. This intensification has partly been necessitated by villagisation, as the distance from the fields has increased in the concentrated settlements. The former method of restoring fertility by using fallow has been dropped by most peasants. A change in the forced village settlement pattern could enable a more rational land use, by decreasing walking time to fields and enabling bigger integration between crops and livestock, but with an ever increasing population it could not remove the need for intensification of land use. In many areas of the highlands there is no more room for land-extensive systems using fallow to regenerate fertility.

A production system dependent on biochemical inputs to intensify production is very vulnerable, and one might expect the peasants to be more



Table 9.5. National *maize* supply 1982/83.<sup>15</sup>

	'000 tonnes
NMC local purchases	86
NMC imports	123
Total NMC sales	209
Estimated private sales	250
Estimated total sales	459

affected by the economic crisis than is the case. Fewer peasants obtained credit in 1982 than in 1979, but most of them managed to buy the inputs with their own money. The scarcity of inputs for cash was not so serious for the villages close to the district centres. The peasants most affected by the crisis are to be found in the villages furthest away from the centres. As credit has got less and transport has deteriorated they have found themselves in a difficult situation, where they have hardly been able to produce enough food for **subsistence**.<sup>14</sup>

## THE GREEN REVOLUTION IN THE NATIONAL ECONOMY

The National Milling Corporation (NMC) is supposed to buy and sell all maize in the country at controlled prices. In the 1982/83 marketing season it is estimated that NMC procured about 25% of all marketed maize, while it dealt with almost half of all maize sold. The difference was imported (see Table 9.5). The NMC has increasingly concentrated its sales in Dar es Salaam and to some extent Dodoma, while other areas have had to rely on private markets for maize.

During the 1980s the NMC has increasingly procured its maize in the Southern Highlands, as shown in Figure 9.4. The drought which affected most other areas did not influence production in the Southern Highlands much, and the use of biochemicals enabled a big surplus production. The part of the privately marketed production coming from the Southern Highlands is likely to be smaller than that of the NMC's, because some parts of the highlands are so far from the markets that private dealers are reluctant to go there. Nevertheless, probably something like 80% of all marketed maize in 1982/83 came from the Southern Highlands.

In the 1983/84 season the NMC producer price of maize was Tsh 2,200 per ton and the selling price Tsh 2.20 per kg of maize flour. Marketing costs were some Tsh 5,500 per tonne. Thus in that season the NMC bought and

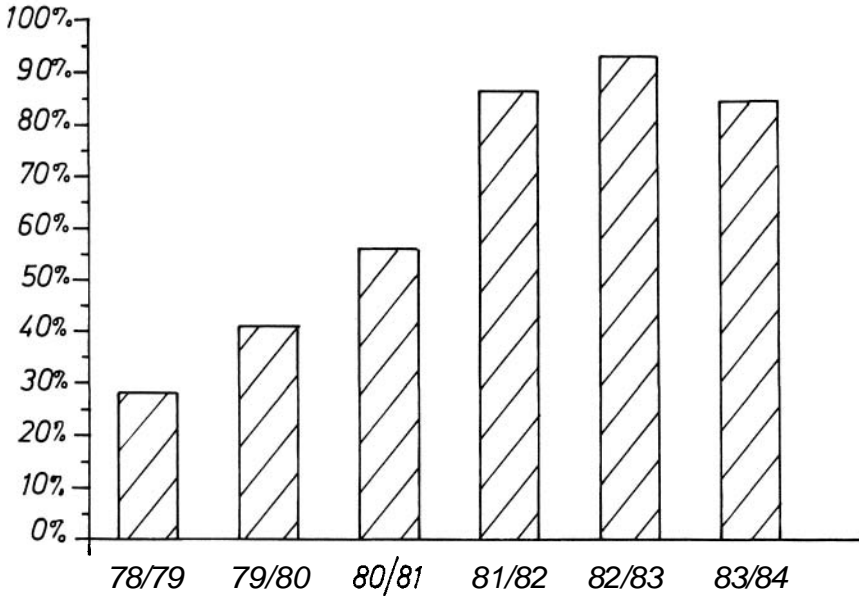


Figure 9.4. Southern Highland; share of total NMC purchases of maize.<sup>16</sup>

sold local maize at approximately the same price, which meant that the government had to cover the marketing costs of NMC, at a total of around Tsh 1 billion. The consumers were supposed to pay Tsh 2.20 per kg but often ended up paying more, as NMC employees and other middlemen enjoyed having control over a scarce commodity.

During the same season, as a rough estimate, private traders bought maize at Tsh 5,000 per tonne and sold at Tsh 15,000 per tonne, with a gross margin of Tsh 10,000. This covered little more than transport, while the NMC from its lower margin also covered storing, milling and packing. In the private trade the total turnover was approximately Tsh 3 billion, out of which the traders got Tsh 2 billion and the producers Tsh 1 billion."

The producers benefited from the private trade in maize in the form of higher prices and secure marketing. Nevertheless, the lion's share went to the private transport business where profits have been enormous. People, especially in the north west, who have had to buy in the private market have paid prices up to 10 times the official price of maize. Urban consumers with access to maize at official prices, mainly in Dar es Salaam, benefitted from the dual marketing system, as did NMC officers with control of maize sales.

The state undertook a big expenditure for the subsidy of maize, and in

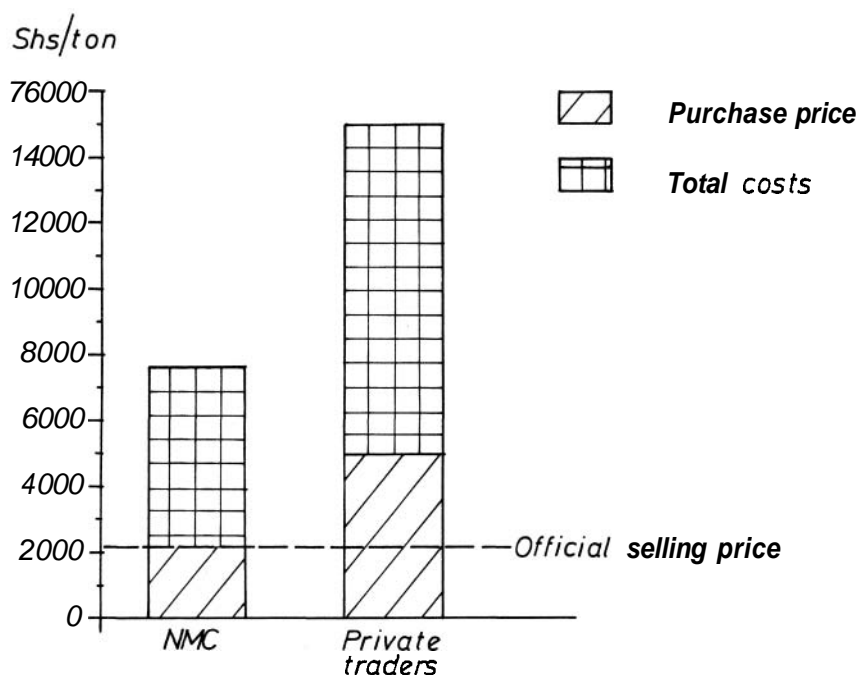


Figure 9.5. Costs of maize in public and private trade.<sup>18</sup>

effect paid for the benefits of the NMC officials and the consumers in Dares Salaam. The consumers in the private market paid for both the private traders' and the peasants' profits.

The NMC is renowned as being very inefficient with heavy overheads, but nevertheless they perform the marketing function at half the costs of the private traders. Since there is no reason to believe that the private traders are less efficient than the NMC, an estimate of Tsh 1 billion in profits from the maize trade is probably not exaggerated. This is more or less equal to the subsidy from the government to the NMC.

The policy of low producer prices and official consumer prices below costs has caused a heavy drain on government resources and has benefitted a quite small part of the population. The inability to supply the necessary maize at official prices has led to a flourishing private market, with some profits for the producers, but with enormous profits for the traders, and with a tight squeeze especially on the lower salaried workers, who have seen their real incomes decline catastrophically. Clearly an organisation of the maize market in which trade took place with moderate margins like those of the NMC would benefit both producers and consumers. This could be achieved either privately, by legalising the trade and expanding the supply

of transport, which is in such low supply that prices are driven up very high. The alternative would be an expanded NMC. There would always be a need for a parastatal, as it is doubtful whether the private traders would have any interest in going into the storing of maize, which is a necessity in order to equalise supply and demand.

The basis for the green revolution is the biochemical inputs: seeds, fertiliser and insecticides. The seeds are mainly produced in Tanzania. They have been priced quite high, due to heavy costs in distribution, and many peasants for this reason have preferred to use their own seeds. As the hybrid seeds are the most important part of the package, this has held back production. Seeds have also been in short supply, although production capacity exists and production is not very import-intensive. The research stations have been slow to produce high yielding hybrids for lower-lying areas, although short season varieties exist and are widely used in Zimbabwe.

Fertilisers are mainly imported, though there is local production capacity for some types. Fertilisers have been heavily subsidised by the government at a cost of several hundred million shillings. With present high prices of maize, this is not necessary, and the government is now stopping the subsidisation. Even at the full price, the use of fertiliser is profitable, but producers will try to substitute with manure, which is economical and decreases fertiliser imports.

Fertiliser imports have increasingly been financed through import aid, where they are bought in the donor country. This has led to cases where the wrong fertilisers for local conditions have been distributed. Also the availability of fertiliser has not matched demand.

From many points of view increased food production seems a beneficial undertaking. It can increase income for the producers, but also for the consumers, who have suffered from soaring prices as maize has been in short supply. With an import content of some 50% of the value, including transport, it also has advantages for the national economy in general, as it can reduce the import bill, and it should also be a political advantage not to be dependent on foreign food.

With increasing pressure on land some intensification in use is necessary, and the biochemical inputs in the highland areas at present offer a means of achieving that, at an economical price. It is possible to become self-sufficient in grain with a fairly small investment in biochemicals, an investment with a high and fast return. That food production has not received this small extra investment, which also makes sense in regard to foreign exchange, makes one wonder whether self-sufficiency in food is really a national goal. Most of the food imports which have been necessary because of low domestic

production have come in the form of aid, and the government seems to have been satisfied with this solution, since it did not provide a drain on either foreign exchange or domestic resources.

## NOTES

1. See Awiti, A., 'Ismani and the Rise of Capitalism' and 'The Development of Ujamaa in Ismani', **Lionel Cliffe** et al. (eds.) *Rural Cooperation In Tanzania*, Dares Salaam, 1975, for a full discussion of the development of capitalist farming in Ismani.
2. From Marketing Development Bureau, *Annual Price Reviews*, several years, Dar es Salaam.
3. Sources: Marketing Development Bureau, *op.cit.* Tanzania Rural Development Bank, Project URT/71/004.
4. From Bo, Per and **Torben Rasmussen**, *Peasant Economy and Rural Credit*, CDR Project Papers A.82.11. Copenhagen, Centre for Development Research, 1982. The present chapter is based partly on results from a research project carried out in 1979–81 by the author in collaboration with Per Bo, and partly from a follow-up on that project, with field-work carried out in 1984 by the author in collaboration with **Godwin Mlambo** from the Tanzania Rural Development Bank (now Cooperative and Rural Development Bank). The fieldwork covered 120 households in six villages, interviewed both in 1980 and 1984.
5. See Tanzania Rural Development Bank, *Annual Report and Accounts*, 1978/79, Dar es Salaam, May 1980.
6. Source: Bo and Rasmussen, *op. cit.*
7. Source: *ibid.*
8. Source: *ibid.*
9. Source: *ibid.*
10. Rasmussen, **Torben**, *The Private Market for Maize in Tanzania—preliminary analysis*, CDR Project Papers D.85.13, Copenhagen, Centre for Development Research, 1985.
11. See **Branner-Jespersen**, C. et al., *Southern Highland Socioeconomic Report*, Uyole, 1971.
12. Personal communication from Food and Nutrition Centre, Dar es Salaam.
13. Sources: Branner-Jespersen et al., *op.cit.*; Bo and Rasmussen, *op.cit.* and 1984 survey.
14. Personal communication from Esbern Friis-Hansen.
15. Source: Marketing Development Bureau, *op. cit.*
16. *Ibid.*
17. See Rasmussen, *The Private Market*, *op. cit.* for an analysis of the private market for maize.
18. Source: Marketing Development Bureau, *op. cit.*

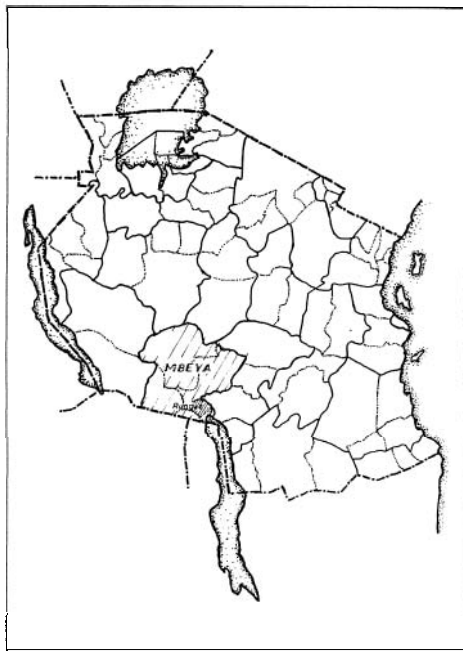


# 10. Tea – does it do the Peasant Women in Rungwe any good?

*Rie Odgaard*

## INTRODUCTION

The implications of export-crop production for developing countries are widely discussed, with an emphasis on the negative side arguing that small peasants, who are the majority of producers in developing countries, once they are heavily involved in export-crop production, easily become trapped in a dependency situation, where their success or lack of it to a large extent depends one-sidedly on fluctuations in the world market and national price policies. This dependency can be even more difficult to break through in the case of a crop like tea, because tea is a perennial crop, a mono-crop and very labour intensive throughout the



year. Furthermore, in relation to the socio-economic situation of women, it has been pointed out that tea growing can have a directly detrimental impact.

In this chapter, however, I shall try to show by drawing on field data from Rungwe district, that tea grown on a kind of co-operative/ block farm basis<sup>1</sup> can be directly beneficial to peasant women (and peasant men for that matter). That this is so is partly related to the presence of what may be called traditional relations of production, both at the household level and in the local community, and partly to the way in which the area is affected by the present economic crisis in Tanzania, which leaves very few alternative income-gaining activities open for women. On the other hand, the chapter will also discuss whether tea grown on a private smallholder basis can be beneficial to women in this area.

By presenting two specific examples below, I am not trying to generalise about the implications of tea growing for women in all parts of Tanzania. On the contrary, by being specific I wish to emphasise that the diversified situation in different parts of Tanzania does not permit general conclusions. The question of whether tea production is good or bad for the peasants involved (and here a specific group among them, namely the peasant women) has to be considered not only in relation to the national and international conditions, but also in relation to the specific circumstances under which it is grown in different parts of the country, and in relation to different socio-economic groups within the peasantry.

## TEA PRODUCTION IN RUNGWE

The growing of tea in **Rungwe** dates back to around the First World War. During colonial times tea was only grown on estates by foreign companies and foreign settlers. African peasants were generally discouraged from growing tea, and their role was exclusively that of supplying the estates with cheap labour. It was not until after Independence, that a smallholder tea scheme was started in 1962 around the **Rungwe** tea estate (close to Mount **Rungwe**) by the Ministry of Agriculture, and today there are four main tea-growing areas in **Rungwe** with more small **schemes**.<sup>2</sup>

According to a plan drawn up by the Tanzania Tea Authority (TTA) for the development of tea production in **Rungwe** from 1969–74 the intention was to draw 8,000 farm households and 4,800 ha into tea production by the end of 1974. It was thus estimated that each household should plant 0.6 ha with tea.<sup>3</sup>

Although the expansion in acreage in smallholder tea production has been somewhat slower than estimated in the TTA plan, the number of growers has increased considerably. In 1960/61 there were 6 smallholder tea-growers in **Rungwe** and in 1975/76 there were 10,756. The biggest increase in tea-growers was from 1969 onwards. In 1980 the total area growing tea on a smallholder basis was approximately 4,000 ha and the average area per smallholder planted with tea 0.4 ha in **Rungwe**.<sup>4</sup> For comparison the total number of households in the rural areas of **Rungwe** district was 43,382 in 1978.<sup>5</sup>

Since the mid-1960s the World Bank has supported the expansion of smallholder tea production in Tanzania by loans to be administered by the Tanzania Rural Development Bank (TRDB). The first of these loans of US \$10.8 m. was to be lent to small peasants who wanted to start growing tea. The terms on which the peasants obtain the loans are that a certain percentage of the producer price is deducted before the peasants are paid for the green leaves they are harvesting. Usually they are paid every month, and



the sum deducted covers inputs, loan-repayment etc. The tea leaves have to be picked regularly throughout the year, so that peasants in principle can get a regularly monthly income and repay their loans.

In the early 1970s a much bigger loan was granted by the World Bank – namely, US \$79 m. This was to be used not only for expanded credit for the peasants, but also for a feeder-road programme for the whole district, and for training and inputs. In the project period two tea factories have been established. Of the US \$79 m. one-third has been used in **Rungwe** alone<sup>6</sup>. The World Bank assisted project was scheduled to end in 1980, but a consolidation programme was initiated to help a further expansion of the tea-planted area, in order to increase capacity utilisation of the factories and to expand and improve infrastructural support<sup>7</sup>.

### *Peasants and tea-growing*

As mentioned above, the implications of export-crop production for developing countries in general and peasants (both men and women) in particular are widely discussed, and opinions differ considerably. I shall refer here only to a few general opposing points of view. Some writers argue for the necessity of developing countries increasing the growing of export crops in order to obtain the foreign exchange which most of them so desperately need. The Government of Tanzania is also calling for such an increase<sup>8</sup>. In some studies smallholder tea-growing is talked about as a success story for the peasants who thereby get a regular income and the opportunity to invest and raise their standard of living<sup>9</sup>.

Other observers argue that Third World countries by growing export crops become too dependent on factors outside their control – namely, fluctuations in the world market. In this line of thought some writers refer to peasants as "wage-labour equivalents" in the process of becoming more and more subsumed to capital<sup>10</sup>. Such writers call for a withdrawal from the world market.

In the few existing studies of peasants and smallholder tea-production in **Rungwe**, both lines of thought are represented. Thus in 'An Executive Plan for Agricultural Development in **Rungwe** District (1971–79)' the TTA plan for smallholder tea development is supported:

It is by far the best thought-out and best organized project for any agricultural activity in peasant farming in **Rungwe**

– and later:

...we recommend that the possibilities for lowland tea should be further explored. Beyond 1974 another 8,000 farmers (4,800–5,000 hectares) could possibly be taken into the four present tea schemes."

About ten years later the Regional Integrated Development Plan (RIDEP) states that “. . . smallholder tea projects have had very favourable impact on the rural population of **Rungwe** . . . providing a reliable weekly source of income . . .”<sup>12</sup>

On the negative side is a study in 1980 by L. Gambi. One of his main conclusions is:

. . . we are arguing that if we are to get out and overcome the current problems of underdevelopment and dependence then it is high time that we opt **out** of the inherent cash crop production for the world market and direct our emphasis and resources towards the development of material production for the satisfaction of internal needs first.<sup>13</sup>

In relation to the impact smallholder tea-growing has on women, there are almost no detailed studies either of Tanzania or of other African countries, but it has been shown in many studies of Africa that export crop **growing** very often works to the detriment of women, due to the fact that both the land on which such crops are grown and the income they generate are usually exclusively controlled by men, while women very often do the bulk of the work. In relation to an export crop like tea being **labour**-intensive throughout the year, this problem is very real indeed, and is further reinforced in **Rungwe** where almost all agricultural work is done by hoe and other hand tools and where land and labour, as will be illustrated later, are scarce resources.

Gambi's case study of **Rungwe** confirms that the women there were negatively affected by tea-growing, and he "noted differentiation between men and women whereby women are made the major suppliers of labour for households. The ownership right of a household property like tea is for men . . .”<sup>14</sup> Men are in most cases in a more favourable position than women, because they usually get the training and are also responsible for the credit on which most small peasants depend in order to start **tea**-growing. In the area studied by Gambi, therefore, there was:

... general dissatisfaction among women that tea-growing is just a torture to them because they do not realize any fair results of their labour. All the money they asserted is spent by men ... as a result there is a development of cold resistance by women to provision of their labour on **tea**.<sup>15</sup>

For several reasons, I think that general statements of the kind cited above, both those in relation to peasants and export crop production in general and to peasants and tea production in particular, are problematic. In Tanzania, for example, the tea-growing areas are situated in very different parts of the country, inhabited by different ethnic groups with different cultural perceptions and different agricultural techniques.

Secondly, because small peasants in the studies referred to above are very poorly defined. In one of the studies cited the group of smallholders being studied even includes a farmer with a holding of 100 hectares. The reason for including him in the sample is that he has planted 0.2 ha with tea.<sup>16</sup> In another study smallholders are peasants who have planted from 0.1 ha to more than 12 ha with tea." There is no mention of the total holdings for these peasants – only the acreage for tea. In other studies smallholders are not defined at all<sup>18</sup>. Thirdly, in all the studies the concept of household is used to refer to one unit – that is, a production, reproduction and consumption unit. In many parts of Africa this does not apply in reality – and definitely not in many parts of **Rungwe**. Access to and control over resources (land, labour, technology etc.) both within the household and in the local community, are still in many places defined by mutual rights and obligations between more units (for example, men, women, children, relatives etc.) who have different roles in the production process and different patterns of consumption. This distinction is, as will be shown later, very important in order to analyse how a certain rural development activity affects a certain group within the peasantry – here the peasant women.

Finally, the implications for the peasantry of growing tea, for example, are in the above cited studies mainly analysed in relation to capital, world market prices, producer prices, agricultural techniques, marketing system, etc. Without denying the important role such factors play in relation to export-crop growing and peasants, I wish to stress that there is a whole set of other factors (often forgotten, however), nationally determined and locally determined as well as gender determined which may be more crucial in analysing the impact on women. The most important of these factors can be identified as follows:

1. Women's access to and control over land and labour and other agricultural resources, in relation to men's.
2. Women's control over income from economic activities and freedom to dispose of it according to priorities and needs, in relation to men's.
3. The relationship between land devoted to export crops, other cash crops and food crops.
4. The division of labour within the family and in the local community.

In the following two examples (to be referred to as village **A** and village **B**) from **Rungwe** district, the importance of these factors, in analysing the impact of tea-growing on women, will be discussed.

#### *A case study of two tea-growing villages*

The two villages chosen for the case study are situated near one of the tea factories which have been established as part of the World Bank Consolidation Project. Both villages are almost exclusively inhabited by the

Wanyakyusa. The area is generally very fertile, and the annual rainfall abundant (approximately 2,500 mm)." Apart from tea and coffee the main crops grown in the villages are maize, beans, bananas, millet and sweet potatoes. The population density in the area is high, compared with the density for the region as a whole (79.5 per km<sup>2</sup>, and for the region 17.9 per km<sup>2</sup>), and there is heavy pressure on natural resources.<sup>20</sup> The average landholding in the villages in question is approximately 2 ha.

Almost all the agricultural work is done by hoe and other hand tools, and the availability of labour is, together with access to land, the main constraint in the area. The problem of availability of labour for many families is further constrained by the fact that, for a long time, there has been, and there still is, a heavy out-migration, primarily of adult men.

That land pressure and shortage of labour are major constraints in the same area at the same time, is an illustration of the most important contradiction in the way Rungwe has developed historically and the way it is affected by the present economic crisis in Tanzania.

The general tendency, and the overall problem in Rungwe today, is overpopulation and pressure on land and other resources. This is one of the main causes for the above-mentioned migration. Some migrants have settled for good in other areas and have taken their families with them, and others still follow their example, especially those who are squeezed out because they have not been able to get any land at all. But many people, not only from the land-poor households, are migrating on a more temporary basis, and leaving their families behind.

Shortage of land can thus only partly explain the out-migration from Rungwe. Another factor, at least as important, is the need for cash. That cash, in spite of tea- and coffee-growing, to a large extent has to be sought outside the area, is due to a large range of factors. One is the fact that the peasants in Tanzania until recently have been paid very low producer-prices for their export crops. But lack of wage labour opportunities, lack of transport facilities, lack of inputs, which could improve agricultural productivity, and lack of sufficient local market facilities, and for some crops lack of local demand, are all factors which, in different ways and to various degrees, affect the economic situation of the peasant household.

These shortages, combined with the low level of development of the productive forces in the area, the labour-intensivity of tea and the out-migration of labour, mean that many households are facing shortage of labour-power, especially during peak seasons for food crops. But a very great number of these households at the same time have holdings which are too small to satisfy the needs of the family throughout the year, under present conditions. Due to the fact that in households from which migration is taking place, it is primarily the grown-up men who are migrating, shortage of labour-power is often felt most by women and children.

In other words, what I am trying to say is not that all households in **Rungwe** are facing shortages of land and labour at the same time although it is argued that land pressure and shortage of labour are generally major constraints. The sufficient availability of both – a situation which is however, hard to imagine – will not be enough to solve the socioeconomic problems of the area. As indicated above, the situation is much more complex than that.

Before proceeding to the presentation of the two examples, I want to dwell on a few features of the so-called traditional Nyakyusa society<sup>21</sup> and to refer briefly to the historical development in the **area**.<sup>22</sup>

In the traditional Nyakyusa society a woman's rights in land changed according to changes in her status. Before marriage a girl's rights to land were tied to those of her mother. When she married, it was the obligation of her husband to provide her with a piece of land of her own. There were certain rights and duties for both parties in tilling both the land of the husband and that of the wife (wives) and in relation to the use of the produce. But once these obligations were met, it was in principle up to a man and his wife (wives) to decide how to dispose of the rest. If a woman was widowed, the brothers of her husband, who were normally his heirs, could in principle "take over" both her and the land, and she would then be able to retain the same land rights as before. If she was not "taken over" by a brother of her husband, she would either try to remarry or return to her natal family's place.

Also a man's rights in land changed according to changes in his status, but whereas a woman's rights in land were determined by her membership of different families, a man's land rights were more determined by his membership of the society. At the age of about 10–12 years a boy would move away from his parents' house and settle together with his male peers in a so-called age-village. There he would build a house of his own and get a piece of land from the village on which to start cultivation. Men of the same generation and their wives and children usually stayed together during their whole life-times.<sup>23</sup> The size of the piece of land a young man was given would change in accordance with the changes in his status and the size of his family, and in principle a man was entitled to as much land as he and his family were able to cultivate – through membership of the village.

Principle is one thing, but the extent to which principles can, or will, be translated into practice always depends on how socioeconomic and cultural conditions are developing in each specific area.

It was not until the 1930s that land scarcity began to make itself felt in **Rungwe**. This can partly be explained by a rapid growth in population, and partly by the fact that an increasing part of the good land had been taken up by privately owned estates and commercial farms. In the simultaneous process of individualisation and capitalisation of peasant land, tea and

coffee have also played an important role in changing the traditional Nyakyusa social structure. The most important of these changes are in inheritance and settlement patterns as well as in access to resources and division of labour.

Today sons inherit land and property from their fathers. Daughters are generally not able to inherit land. If women get access to land it is still usually through **marriage**.<sup>24</sup> If the husband dies before his wife (wives), the wife (wives) will retain rights in the land (if they have any), and the sons will gradually take over. In many cases some of the land has already been distributed among the sons before the deaths of the fathers. In accordance with changes in inheritance patterns, the settlement pattern has also changed. In places where settlement according to age still takes place to some extent, it is only a temporary phenomenon, as the young men will move as soon as they get access to the land of their fathers. In such places the boys only stay in what may be called age-quarters in the paternal village from the time they reach the age of ten or twelve and until they inherit their father's land rights." So what were previously referred to as age-villages have today changed into age-quarters. In places where an age-quarter system is practised, it is still considered the responsibility of the village to provide land for the boys in the quarters. But the capitalisation and individualisation process in the area which results in land differentiation, in combination with the population increase, led to general land shortage. The villages are therefore today facing problems in providing land for the boys. Moreover, many family holdings are too small to divide, if there is more than one son in a family, and as the eldest son, according to the existing Nyakyusa land inheritance system, is given priority, many young men are not able to obtain land in their home area. This can partly explain the heavy out-migration of men. This migration has, together with the increasing importance of growing export crops, affected the division of labour as well as the distribution of resources within the family and the local community, in a way which, in many places, has had a negative impact on the situation of women.

But, as will be illustrated below, the changes in village A have affected the situation of women more negatively than is the case in village B. This is due to the fact that the two villages differ considerably in many respects, although they are situated very close to each other and are inhabited by the same ethnic group. But, as I shall try to show, these differences can be explained both in relation to the degree of involvement in the growing of export crops, and also in relation to the nature of this involvement.

The cases to be presented are based on data from randomly selected samples of thirty households in the two villages. The data have been collected partly by myself and partly by **others**.<sup>26</sup>

## VILLAGE A

*Women and private smallholder tea-growing*

Village A is situated close to the tea-factory mentioned above. Out of the sample of 30 households 29 are involved in coffee and tea-growing – of which 27 households are in the smallholder tea-scheme. As the average total holding for the 29 households is 1.8 ha – ranging from 0.8 ha at the lower end of the scale to 4.4 ha at the other – we are dealing with real smallholders.

The average acreage planted with tea for the 29 households is approximately 0.4 ha and with coffee approximately 0.1 ha. Thus one-third of the average holdings is planted with export crops exclusively controlled by men.

The growing of tea is the agricultural activity from which the households get by far their main cash income, with coffee in second place. The only other crops from which the households get cash incomes are maize and bananas, but only three households have income from these crops. Of the land totally used for cash-crops, approximately 92% is taken up by tea and coffee alone. As the village is situated near a forest reserve, some of the households possess money income from timber – like coffee and tea an economic activity controlled by men.

Contrary to what has traditionally been the rule in the Nyakyusa society, the women in village A generally have very little access to land of their own.

Of the 29 households, in only 11 do women have access to land of their own and of these 11, 3 are female-headed. In the remaining 8 the women control on average 0.4 ha each.

Although all the households in the sample can be considered as smallholders, there is, as mentioned above, some differentiation in relation to land ownership. This is important, when it comes to the question of how much land in the various households is used for cash crops exclusively controlled by men, and how much is left for other cash crops and for food crops to feed the family.

In Table 10.1 the 29 households are divided into two groups according to the size of holdings, and the table shows how big a part of the land in each group on average is planted with tea and coffee.

The ratio of land used for export crops to that used for food crops is most critical in group I, when considering mouths to feed. In this group only 0.2 ha per person is grown with food crops, whereas in the other group the acreage per person grown with food crops is 0.3 ha.

In the group of smaller land holdings, women make up the biggest part of the labour power available in the household, although polygamy is less frequent here than in group II (approximately 17% compared to approx-

Table 10.1. *Land use and household composition by landholding categories. Village A*

Household composition by sex and land use	Landholding categories	
	I 0.8–2 ha	II 2.4–4.4 ha
Mean household size* persons	6.1	7.1
Adult ♀/adult ♂ ratio	1.7:1	1:1
Mean total land acreage	1.4	3.1
Tea and coffee acreage	0.4	1.0
Cash total acreage	0.5	1.2
Food acreage per person	0.2	0.3
Total number of households	23	6

\* absent male heads of households are usually included in information given on the number of persons in the household, whereas this is seldom the case with absent grown-up children.

imately 33%. For the village as a whole the frequency of polygamy is 20%). In the smaller landholding group there are 1.7 grown-up women per grown-up male, whereas the ratio in the more land-wealthy group is 0.8 grown-up females per grown-up male.

The sex ratio in group I indicates that out-migration is heavier in this group than in the other. As relatively more land in group I is used for export crops, which are exclusively controlled by men but grown with a high labour input from women, in relation to land left for food crops to feed the family, it is difficult to avoid the conclusion that the outcome women get from their labour-input is less favourable in the land-poor group than in the land-wealthy.

The land-poor households depend more on additional income to feed the family. Although none of the 29 households said that they had income from wage-labour, wage-labour in one form or the other is fairly widespread in the area. It is also well-known that in the tea-growing areas women often make up the majority of the wage-labour force in the bigger tea farms. This is especially so in connection with the picking of tea, as women are known to be much better pickers than men.

The exchange of labour power through labour parties is also widespread in the area, but as the participants in a labour party must be provided with food and plenty of pombe (locally produced beer), this opportunity is less readily available for the land-poor group and especially so for the women in this group.



Due to the fact that out-migration is more frequent in the land-poor group and because these households are less able to benefit from labour parties and to use paid labour, the availability of labour-power is often a serious constraint, especially in connection with tea production, because tea, as mentioned above, is labour-intensive throughout the year.

In families where the men migrate the women will often be left alone with all the agricultural work for most of the year. Many women in these households said that, due both to labour constraints, but also to the fact that they did not get a fair return from their work on their husbands' tea-fields, they would often choose to leave the tea-fields untended and concentrate on the growing of food crops in order to grow enough to feed the family. Given the fact that women in village A in both groups generally control very few resources (even more so in group II) and that women in group II also take part in the work on their husbands' tea and coffee shambas, it is probably not too much to say that the outcome women get from their labour input in village A is generally low.

Furthermore, being relatively heavily involved in the growing of perennial export crops, it is very difficult for the peasants in village A to change the crop composition. Once credit is obtained and the peasants are supervised by the crop authorities, they have to try to meet their obligations. This means that the peasants in village A have very few possibilities of benefiting from the parallel market for food crops, which, due to the economic crisis in Tanzania, has become an important factor in the rural economy, as food crops sold on the parallel market are reaching very high prices. Because of the degree and nature of the cash-involvement in village A, the possibility of adjusting to changing national and local economic conditions is very limited indeed.

## VILLAGE B

### *Women and a "communal" tea-farm*

As mentioned above, in the example of village B I shall try to show that tea grown on a kind of **co-operative/block** farm basis can be directly beneficial to women. But before entering into a presentation of data from the household sample from village B, I shall give a short description of the communal tea-farm in village B.

The communal tea-farm was started in the early 1970s as an **ujamaa** farm—in the sense that all the members in principle were to share the work and the fruits of the work equally. According to the members interviewed, the land used for the farm was partly pooled by the members themselves, and was partly some land referred to as village land. Because of several prob-

lems – first of all working discipline – it was decided to shift to a system in which each member of the shamba has his or her own **plot(s)** for which they are responsible, and from which they get an income in accordance with the amount of tea harvested.

The **co-operative/block** farm is part of the smallholder tea scheme, and the terms are the same as for private smallholders, namely, that a certain percentage is deducted per kg of tea harvested before the members are paid. But, in addition, an amount per kg is deducted by the tea committee of the farm to cover the costs of administration, and another small part is deducted for common purposes and for investments.

The shamba covers an area of 31 ha and has 90 members, half of whom are women. Thus the average holding per member is 0.4 ha.

But the plots can be from 0.1 ha to 0.4 ha, and it is possible for each member to have more than one plot once the plots are properly taken care of. The tea committee can decide to exclude members who do not take care of their plots. The committee consists of members chosen by all the members of the shamba. There are still a few plots available (some of them have been taken away from people who did not tend them properly), so that other people from the village can still apply for membership, if they want to.

Village B is located 2–3 km from the all-weather tea-feeder road, along which village A is situated, and approximately 20 km from village A.

Of the household sample of 30 households tea and coffee is grown individually by 22 households. The average landholding for the 22 households is 2.4 ha, ranging from 1.2 ha in the land-poor group to 4.8 ha in the relatively land-wealthy group. As the average household size is somewhat bigger in village B than in village A in the tea and coffee growing households (7.9 to 6.3) the average holding per person is the same in the two villages (0.3 ha).

In village B the relation between land used for coffee and tea growing respectively on an individual private basis is the opposite of that in village A. On average the 22 households in village B have each planted approximately 0.4 ha with coffee and 0.1 ha with tea. Only three of the households are involved in the smallholder tea scheme on a private individual basis.

As mentioned above, there is also the **co-operative/block** tea-shamba, of which 23 persons from 11 households in the sample are members. But they do not consider the plots they have in the block-farm as land belonging to them, which means that their plots in the **co-operative/block** farm are not included in the figures for average holdings. For the eleven households, their shares in the "co-operative" tea field are in addition to the family holding. As mentioned above, the average holding per member of the communal tea-farm is 0.4 ha.

Table 10.2. *Land use and household composition by landholding categories.**Village B*

Household composition by sex and landuse	Landholding categories	
	I 0.8–2 ha	II 2.4–4.4 ha
Mean household size*		
persons	6.2	9.9
Adult ♀/Adult ♂ ratio	1.7:1	1.7:1
Mean total land acreage.	1.6	3.3
Tea and coffee acreage	0.4	0.6
Cash total acreage	0.6	1.4
Food acreage per person	0.2	0.2
Total number of households	12	10

\* absent male heads of households are usually included in information given on the number of persons in the household, whereas this is seldom the case with absent grown-up children.

*Members of the cooperative block tea-farm*

Landholding categories

I		II	
♀	♂	♀	♂
3	3	11	6

In village B only about one-fifth of the family holding is planted with export crops exclusively controlled by men. The women members of the communal tea-field individually control the income they get from their tea-plots in the "block-farm".

The total average acreage in village B grown with cash crops is almost as big as in village A, but of this less than 50% is taken up by coffee and tea. In 17 of the households there is some cash income from maize, beans, bananas, sweet potatoes and millet. But, contrary to the situation in village A, all the women in the sample from village B have access to land of their own (on average 0.6 ha each). Several of the women are able to market a surplus from the food crops they grow on their own land, although the market and transport facilities – or rather lack of them – in the area do not make this very profitable for the women (see below). However, the fact that many women have income from tea and also grow a surplus of food crops makes it

possible for them also to exchange labour power through labour parties.

The fact that a relatively large part of the cash-crops in village B is made up by food crops makes the village much less vulnerable to external factors than is the case in village A, and to a certain extent more flexible in devising strategies in accordance with changing national and local economic conditions.

In village B the relation between crops exclusively controlled by men, other cash crops and food crops is generally more favourable for the women than in village A. But, as can be seen from Table 10.2, the situation for the land-poor groups is more difficult than for the land-wealthy groups.

The average acreage per capita grown with food crops in group I is 0.16 ha and in the other group 0.2. That the members of the land-wealthy group, and also the women belonging to it, are better off, however, than the land-poor cannot be questioned. They have more income from both export crops and other cash crops, and they have more plots in the co-operative tea-field than the land-poor group. This can partly be explained, however, by the fact that in most polygamous households all the wives have their own plots, and partly because more labour-power is available in this group than in group I.

As can be seen from Table 10.2, the sex ratio in village B is the same for both the land-poor and the land-wealthy groups (1.7:1). This is partly explained by the fact that polygamy is more widespread in village B, especially in the land-wealthy group (80% of households in group II are polygamous whereas in group I it is 25%. For the village sample as a whole the frequency of polygamy is **43%**). The sex-ratio in the land-poor groups in village B illustrates that out-migration of grown-up men is taking place to a larger extent in these groups. As shown above, polygamy in village A is much less widespread than in village B.

Although I think women in village B can be said generally to be in a better situation than women in village A, some aspects still indicate that in village B also the outcome women get from their labour input is less favourable than that for men. First of all because the women make up the primary part of the labour power available, and this even more so than in village A. Secondly, for the members of the tea-farm, it is indicated by the fact that the male members, during the research period, harvested almost double the quantity of tea-leaves that the women members did.

The explanation for this is partly that some of the men have bigger shares in the co-operative farm than the female members, and that many men, due to income from coffee and more surplus from other crops, are more able to benefit from paid labour and exchange of labour-power through labour parties. However, my own observations confirm that many women often work on their husband's plots in the co-operative tea-field. Although some of them claimed that their husbands would either have to pay them or help

them on their plots in return, there are probably also many who do not realise a fair outcome from their labour input.

But in spite of this, there are still some important factors which place women in village B in a much better position than women in village A. The most important of these factors is the fact that the women have retained so-called traditional rights in land. The fact that all the women in the sample from village B have access to land and other resources also makes it possible for them sometimes to benefit from the exchange of labour-power through working parties, thus releasing them from labour constraints during peak seasons. Secondly, the fact that there is a co-operative tea-farm, where many women can become members and get access to cash income of their own.

That the "co-operative" tea-farm is a relative success for the women (and the men) in village B, however, is also related to the general constraints in the area due to the present economic crisis. One of the ways the economic crisis affected the area during the research period was that, at the same time as the tea-lorries and Tanzanian Tea Authority were functioning quite efficiently, there were almost no other transport facilities available either for people or for most of the other crops grown in the area. The chances for people in village B to get access to the few means of transportation were even smaller than for people in village A. Because village B is situated downhill, 2–3 km from the road, this meant that the only place where the women (and men) could sell a surplus of food crops was at the nearby local market, where everybody else was trying to sell. This, of course, kept prices very low at the same time as these crops were reaching very high prices in the parallel market in other parts of Tanzania.

That many peasants, including peasant women, in village B still try to grow and sell a surplus of food crops, especially maize and millet for beer brewing, is because of the important role exchange of labour power through labour parties plays in the village.

However, many women often choose, if possible, to concentrate a heavy labour-input on their plots in the co-operative tea-farm in order to ensure a regular cash income, although producer prices for export crops have until recently been very low in Tanzania. What is important for village B, however, in relation to village A is that the women (and men) are able to choose how to grow tea and how much effort to concentrate on tea-growing, because they are relatively self-sufficient in food crops.

The radical changes in women's access to resources in village A are, I think, directly related to the way village A is involved in tea-growing (on a private smallholder basis) and to the degree of that involvement – namely, that a fairly large part of the family land is permanently taken up by tea controlled by men. But other factors, which in different ways have affected the whole district, have added to the deteriorating situation of the women in

village A. Such factors are the fact that smallholder tea production has been introduced and has expanded rapidly during a time of increasing land pressure and out-migration of labour-power, and that tea, contrary to coffee, for example, is labour-intensive throughout the year.

## CONCLUSION

As I have tried to show, there is no single answer to the question of whether export crop production – in this case tea – is good or bad for the peasants involved – and here especially for the peasant women.

Although it is hard to deny that the production of export crops creates a dependency situation both nationally and for the peasants involved, I have tried to show that, as long as export crops are only taking up part of the household land, thus leaving enough for food crops and allowing the household a certain flexibility, it may generally be beneficial to peasants to grow tea. But to be beneficial for the peasants generally does not necessarily mean that it is of benefit to the peasant women. As shown above, one way in which an export crop like tea can be beneficial to peasant women is when it is grown on a co-operative basis where the women themselves have the chance to control their share of the shamba and the fruits of their work. This is illustrated by example B. It is much harder to imagine how women can benefit from export crops grown in private individual ways. That this is so is because of the way gender relations have developed in most parts of Tanzania (and in many other countries), tying export crops to men's ownership and control at the same time as women do a very big share of the work involved. This is illustrated by the example from village A.

I therefore see very good reasons why efforts should be made to encourage peasants, and especially peasant women, to form groups and grow tea in co-operative ways, especially in places where there is a high degree of self-sufficiency in food crops. Given the existing infrastructure, distribution systems and transport problems in most parts of Tanzania, a relative self-sufficiency in food crops is very important indeed.

In such areas ways should be found to make the necessary inputs and knowledge available, especially for groups of poor peasant women, to help them in their struggle to improve their situation. The fact that Tanzania has raised producer prices considerably over the past two years has improved the incentives for the peasants and helps to create the right atmosphere to promote such a development.

## NOTES

1. For specification of a **cooperative/block** farm see example B.
2. See *Rungwe District Planning Survey 1969*, pp. 65–6 and Gambi, L., *An Inquiry into socio-economic effects and some current problems of peasant tea-growing in Tanzania: The case of Rungwe Small-holder Tea Project*, M A thesis, University of Dar es Salaam, 1981.
3. See *District Planning Survey*, op. cit. p. 66.
4. Gambi, op. cit., p. 47.
5. Bureau of Statistics, Ministry of Finance and Planning, *1978 Population Census, Preliminary Report*, Dar es Salaam.
6. See Gambi, op. cit., p. 45.
7. Mbeya Regional Integrated Development Plan (RIDEP), *Strategy Report*, Vol. 11, 1982, p. 27.
8. *The Tanzanian National Agricultural Policy*, Dar es Salaam, 1983.
9. This opinion has been expressed in Buch Hansen, M., *Agro Industrial Production and Socio-economic Development: A case study of KTDA small holder tea-production in Buret, Western Kenya*, Working Paper No. 11, Roskilde University Centre, 1980 and in Mbeya RIDEP, op. cit.
10. Bernstein, Henry, Notes on capital and peasantry, *Review of African Political Economy*, 10 (1977).
11. Luning, H.A. and J.J. Sterkenburg, *An Executive Plan for Agricultural Development in Rungwe District (1971–79)*, Leyden, Afrika Studie-Centrum, 1971.
12. Mbeya RIDEP, op. cit., p. 27.
13. Gambi, op. cit., p. 18.
14. Ibid., p. 63.
15. Ibid., p. 63.
16. Buch Hansen, op. cit. p. 41.
17. Gambi, op. cit. p. 39.
18. Mbeya RIDEP, op. cit. and *District Planning Survey*, op. cit.
19. *Danida Water Project: Socio-Economic Study*, Vol. 12, p. 2.22, 1982.
20. McCall, M.K., *The Population Pressure on Natural Resources in Mbeya Region and Potential Solutions*, Mbeya RIDEP, 1982.
21. This is a very brief and general sketch. For further information on the Nyakyusa society see e.g. Wilson, G., 'The Nyakyusa of South Western Tanganyika', in Colson and Gluckman, *Seven Tribes of British Central Africa*, Manchester 1959, and *The Landrights of Individuals among the Nyakyusa*, Livingstone, 1938. Wilson, Monica, 'Nyakyusa Kinship', in A.R. Radcliffe-Brown and D. Forde, *African Systems of Kinship and Marriage*, London, 1962, *Good Company*, Boston 1963, and *For Men and Elders*, 1980.
22. Historical development in Rungwe and changes in the Nyakyusa society has been extensively dealt with in, e.g., Charsley, S.R., *The Princes of Nyakyusa*, Nairobi, 1968; Gulliver, P.H., *A Report on Migration of African Workers to the South from Southern Highlands Province, with special Reference to the Nyakyusa of Rungwe District*, Tanganyika, 1955; Konter, J.H., *Facts and Factors in the Rural Economy of the Nyakyusa, Tanzania*, Afrika Studie-Centrum, 1974; and Wright, M., *German Mission in Tanganyika 1891–1941: Lutherans and Moravians in the Southern Highlands*, Oxford, 1971 – to mention only a few studies.
23. The age-village system has been dealt with at length in the writings of G. and M. Wilson, especially in Wilson, M., *Good Company*, op. cit.

R. ODGAARD

24. In rare cases women have somehow succeeded in getting access to land through other means than marriage. It is then usually on a **renting**/ borrowing basis or through a special inheritance arrangement.

25. I have dealt more extensively with changes in the age-village system in Odgaard, R., *Bosætning efter alder hos Nyakyusa stammen: Traditionelt levn eller praktisk foranstaltning*, Jordens Folk, No. 4, Copenhagen, 1985.

26. Some of the data have been collected by the socio-economic study group in the Danida Water Project. Those of their data presented here have been analysed by me. I am very grateful to the group for having been allowed to use their data.



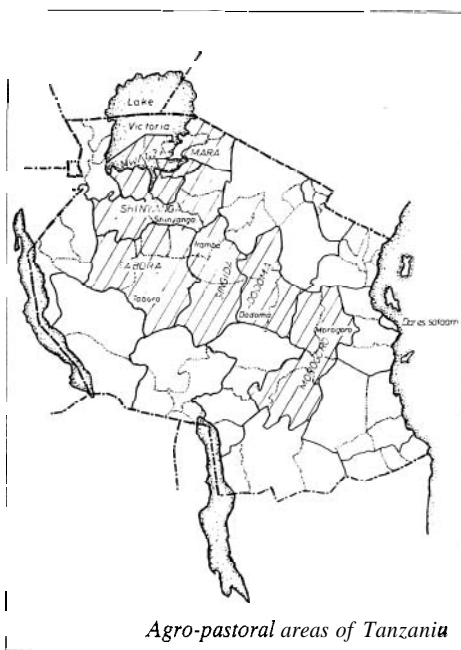
# 11. Grain for Livestock and Livestock for Grain

## Are the Agro-Pastoral Iramba Marginalising Themselves?

*Jan Lindström*

### INTRODUCTION

This chapter aims to give a brief presentation of the problems and the general situation in the agro-pastoral area of Tanzania. I intend to demonstrate that an increased output in agriculture is not necessarily marketed but may find other channels of circulation. The objective is also to show that ecological variations within a single administrative area give somewhat different conditions for production. These differences have sometimes produced regional specialisation and interdependence which are still poorly understood. Furthermore, development programmes ought to be designed according to the potentials and requirements of these sub-areas and not on more general levels, such as district, regional or national levels. Hence this paper is a call for further research on production strategies at the local level.



## AGRO-PASTORALISM IN TANZANIA: PRODUCTION-RELATED PROBLEMS

### *A marginal economic position: agriculture.*

Agro-pastoral societies are those in which agriculture constitutes the subsistence base but is combined with animal husbandry in such a way that the latter is a necessary condition for the maintenance and reproduction of the socioeconomic system.'

Most of the agro-pastoralists are found in the **semiarid** and dry sub-humid parts of the country with an annual rainfall from approximately 500–1000 mm. The main agro-pastoral belt stretches south-east from Lake Victoria to the western part of Morogoro region. This belt includes the major parts of Mwanza, Shinyanga, Singida and Dodoma and parts of Mara and Tabora regions.

Natural conditions for production are generally poor in this belt. A low annual rainfall in many parts makes agriculture a hazardous adventure. A minimum of 750 mm is often used to delimit areas of agricultural potential. Areas with less than 750 mm annual rainfall are classified as marginal agricultural areas.<sup>2</sup> This classification indicates that most of the **agro-pastoral** belt belongs to the marginal agricultural areas of Tanzania. There are, however, reasons to question this kind of classification since agriculture, despite the low annual rainfall, constitutes the subsistence base for all agro-pastoralists.

Despite numerous development efforts during the pre- and **post-independence** periods, many agro-pastoral areas occupy a very marginal position within the national economy. The term "marginal position" can cause confusion since it may be related to a multitude of aspects; for example economic, political, geographical etc. During the last two decades famine tragedies, environmental collapses and the poor results from development efforts in many parts of Africa have attracted much attention. Man-made versus environmental changes have been discussed in relation to famines and "underdevelopment" also. Sometimes famine is seen as a result of the penetration of capitalism and the process of marginalisation, and the development of marginal areas and population have become the focus of such studies.

In a study of the Kamba of Kenya, Ben Wisner maintains that the Kenyan economy, like many other dependent economies, produces what he calls *marginals*, i.e. people and households who have a restricted access to the important means of production. Often they have become a semi-proletariat who sell their labour casually but have difficulties in finding permanent jobs. Furthermore, he says, this process of "socio-political and economic marginality produces **eco-démographic** marginality, i.e. marginal people

are through the process of social allocation in a neo-colony literally pushed into marginal places.'" External disturbances produce increased exposure to natural variations in, for example, rainfall, which may result in the recurrent years of famine. Kamba marginality is a result of the national development in Kenya which may be characterised as a development of the core (during the colonial time, the White Highlands) and the development of areas for labour reserves or cheap food production on the fringe of this core. In other cases of marginality, the above-mentioned relations are not so clearly developed to explain fully the "production" of marginality. In contrast to Wisner, it can also be argued that the weak market penetration or integration of an area may produce a situation of marginality. Such a situation seems to develop when an area is not heavily involved in cash-crop production (neither food nor export crops), when production is mainly subsistence-oriented and when the area develops to become a pool of migrant labour.

It has been argued that agricultural change in colonial Tanzania can be divided into three broad categories: (i) the demarcation of areas which were stimulated to produce export crops, (ii) areas which were developed to produce food crops or to supply other services to the export-oriented regions, and (iii) the more peripheral areas which were designed to supply migrant labour.<sup>4</sup> Typical of the third type of areas are signs of stagnation and more or less isolation from the national economy. The following quotation from the Regional Integrated Development Plan (RIDEP) for Singida region summarises this kind of marginalisations:

Apart from the fact that the productivity levels in agriculture are much lower in the Singida region as compared to certain other regions in Tanzania . . . there are other features of the agricultural economy in this region which need to be mentioned to provide perspective for evaluating the problems and potentials for this region. The first amongst these is the virtual isolation of the region from the national economic structure. The bulk of agricultural production takes place in the subsistence sector for selfconsumption, contributing negligible quantities for marketing . . .<sup>5</sup>

Other parts of the belt have been more involved in cash-cropping such as, for example, the cotton-producing areas of Mwanza and Shinyanga regions, and the tobacco area in Tabora region. However, this cash crop production has shown a decline during the past decade.

Experience has demonstrated that this belt has provided mainly temporary and sporadic contributions to the national economy (e.g. the cotton and tobacco industry). At present only small amounts of agricultural crops are marketed and many parts of the belt are stricken by temporary or permanent crop failures (mainly Singida region and parts of Dodoma and Shinyanga regions).

Hence, for the Tanzanian state which is trying to solve the dual problems of lack of foreign currency and of feeding the growing urban population, the agro-pastoral belt seems to provide little help. The generally poor conditions restrict most development efforts directed towards agriculture. The major part of rain-fed agriculture is extensive in character. Attempts to plant maize in this drought-prone area have been hazardous, as illustrated by experiences in Singida and Shinyanga regions. The widely cultivated drought-resistant crops, sorghum and millet, are today only the second- or third-choice food of the urban population, and market demand for these crops will probably decline further.

The objective, given the present conditions, must be to make the area self-sufficient in food production before any attempt is made at producing a surplus for the national market. However, at present households which are able to produce a surplus in grain often find other channels than the national market for sale or barter of their products. No wonder that planners and politicians often advocate large-scale state-controlled wheat, rice and sugar farms as the means of solving the present national problems of food production.

#### *Agro-pastoral animal husbandry*

The agro-pastoral belt is intermingled with – and surrounded by tsetse-infested bush and forests. Livestock diseases and sometimes over-exploitation of pastures are almost omnipresent problems for the agro-pastoralists. Traditional methods of minimising the risks of disease vectors often include grass and bush burning and heavy grazing. Heavy grazing is a means for the agro-pastoralists to change a pasture with tall grass and a microclimate suitable for vectors like ticks into a short-grass pasture with a micro-climate hostile to these parasites. Sometimes it is hard to strike a balance between underutilisation, often leading to the spread of the tsetse fly and ticks, and over-exploitation, resulting in soil degradation and erosion.<sup>6</sup>

Official figures from, for example, Iramba district show that the yearly loss through livestock killed by diseases amounts to half the cash income earned through sales to the National Milling Corporation (NMC) and the General Agricultural Products Export Corporation (GAPEX). The real amount of the loss certainly exceeds the cash income earned from agriculture since not all animals killed are either reported or diagnosed.'

Approximately three-quarters of the national herd is kept by agro-pastoralists (this is a rough estimation based on livestock figures given by the Tanzania Food and Nutrition Centre (TFNC) 1978 and the population census of 1967). Hence, from a statistical point of view, agro-pastoralists should represent a potential for participation in the national livestock market and for the development of the livestock sector. In reality, however,

the agro-pastoral strategy for herd building and livestock accumulation (see below) restricts these development opportunities. In contrast to pastoralists who rely on the natural reproduction of their animals for herd building, agro-pastoralists often depend heavily on the **barter/selling** of grain to obtain livestock.<sup>8</sup>

Agro-pastoralists often have a lower rate of efficiency in their animal husbandry than pastoralists. It will be shown below that there are agro-pastoral areas where the natural reproduction rate of cattle is below the need for the maintenance of the herd and where this deficiency has to be met through an intensive importation of adult animals from other areas.

There certainly are natural causes for the low rate of efficiency (compared with pastoralists) such as, for example, that areas for pasture become limited due to increased cultivation, the vicinity of bush and forest areas where the vectors of some of the most harmful diseases thrive, etc.

There are also socio-economic reasons however. In some areas, particularly in Singida region where manure is intensively used in agriculture, the livestock are kept in the byre for a considerable part of the day, sometimes until noon. This makes the collection of manure easier but it restricts the daily grazing time of the herds. This practice has negative effects on the condition of the animals and, hence, also on the reproduction capacity.

Furthermore, where the use of oxen for traction is widespread, as in Iramba district, the herd composition shows a high proportion of mature males (bulls and oxen) at the expense of mature cows which are essential for keeping up the reproduction capacity. Again, the very practice of sedentary agriculture often restricts the mobility of the herder – and his herd. The area effectively used by a herd is the pasture within a one-day grazing radius from the **byre**.<sup>9</sup>

There are also reasons to believe that agro-pastoralists have less theoretical and practical knowledge of, for example, livestock diseases, curative methods, the grazing capacity of pasture, selective breeding etc. than pastoralists, since agro-pastoralists have to divide their time and attention between agriculture and animal husbandry.

In sum, all these reasons make the agro-pastoralist a less efficient livestock keeper than the pure pastoralist. This may be measured by, for example, a lower calving rate, a higher calf mortality, a lower internal off-take and sometimes also by the comparatively unfavourable physical features of the agro-pastoral stock.

### *Strategies **for** herd building*

In many cases, the agro-pastoral byre is only an intermediate stop-over for animals between the "breeding area" and the counter of the urban butcher. The annual off-take from agro-pastoral areas may be high and relatively easy

to record, but it is still poorly understood how the animals in the byres of the agro-pastoralists have been accumulated. The rather intensive barter of grain for animals, and vice versa, discussed below, often presupposes a regional specialisation of, on the one hand livestock breeding areas and, on the other hand, areas producing a surplus in agricultural products. Aggregated figures at the district and regional level may never show this kind of specialisation or interdependence between various areas since the figures are evened out through internal trade or never reach the official statistics. The internal dynamic in this kind of specialisation contributes, however, to the distribution of grain from households and areas with a surplus to those who have livestock but whose crop has failed. Households with neither livestock nor an adequate harvest will often have to rely on relief food.

The national livestock market can effectively catch only the last few steps in the circulation of animals mentioned above. To make the argument more extreme, it can be argued that only the "waste" from the agro-pastoral herds, the barren cows, the stunted animals and the worn-out oxen reach the auction market where the livestock authorities enter the process. To paraphrase Hydén, it could be said that it has been extremely difficult to catch this kind of agro-pastoralism because of the production and circulation strategy in which both grain and livestock mainly circulate on the internal market.<sup>10</sup>

The interest for these areas in the national livestock development programmes is also limited." There is a tendency in national livestock development thinking to emphasise the development of ranch farming or "the development among traditional pastoralists". The potential for livestock development among agro-pastoralists (who hold the major part of the national herd) is often either neglected or not fully understood.

### Summary

From the viewpoint of the international and national markets, most of the agro-pastoralists at present seem to have little to offer in the way of coming to grips with the problems of insufficient export and food-crop production. The slow progress in most of these areas has led the national planners to think that rapid development is only achieved through large-scale state farms and ranches. The obvious risk is that the agro-pastoralists will become even more marginalised both economically and politically, as programmes for livestock development and efforts to promote cash or food crop production in agropastoral areas are given low priority.

## CASE STUDY

### ***Iramba District***

Iramba district, in northern Singida region, may be divided into two broad ecological zones. At the centre is the well demarcated Iramba Plateau at an altitude of 1,600 to 1,800 metres, which is surrounded by plains and valleys at altitudes between 1,100 and 1,300 metres. The Plateau receives approximately 750 mm of rain each year and the plains approximately 650 mm. This case study aims at a presentation of production conditions and strategies on the plateau and to show the economic interdependence between the different zones. The Plateau, which is approximately 22 km from East to West and 30 km from North to South is, by Tanzanian standards, a densely populated area. The 1978 Census gives the figure of 45,000 people on the Plateau, giving a density of 70 persons per sq. km (the total population of Iramba district was then 240,000).<sup>12</sup>

During the villagisation programme of the mid-1970s a large number of small villages and hamlets were amalgamated into 15 "development villages" (there is no proper "ujamaa" village on the Iramba Plateau).

### ***Agriculture***

Agricultural production is mainly oriented towards local needs and only limited amounts are sold on the market. The most common crops are different varieties of sorghum, millet and maize. Different varieties are selected with reference to soil conditions, personal taste and the planned future use of the harvest. In addition, different kinds of beans and peas as well as sweet potatoes and cassava are grown as food crops. Groundnuts, onions, sugarcane and bananas are both food crops and cashcrops and are often sold on the local market while sun-flower is mainly cultivated as a cash crop. In contrast to those of the surrounding plains, the soils on the Plateau are not suitable for the cultivation of paddy or cotton.

A large proportion of the grain harvest is exchanged for livestock (see below). There is a constant exchange of these goods but the barter becomes more intensive at the end of the dry season when some households experience a shortage of food. Not all households can rely on their own stock of animals in this situation, but approximately 70% have their own herds.

### ***Problems with herd reproduction***

Livestock density is high on the Plateau. The 1978 Livestock Census gave a total figure of 57,000 livestock units (1 livestock unit = 1 cow or 5 sheep and/or goats)." This means approximately 86 units per sq. km or 1.4 units per human being (a man/animal ratio of 1:1.4).

Much of the arable land is cultivated at present and the steep slopes at the fault make it difficult for the Plateau dwellers to utilise the pastures on the surrounding plains. Combined, these conditions exert a high pressure on the existing pasture, which is detrimental not only for the soil but also for the stock. Overgrazing and soil erosion are today omnipresent problems on the Plateau.

An Iramba cow from the Plateau starts to reproduce at an extremely high age; 5–7 years old.<sup>14</sup> Furthermore, the calving interval of 20–24 months is among the longest recorded in the whole of Africa.<sup>15</sup> The effect of this is an extremely low rate of reproduction in the Plateau herds.

This low rate is enhanced by the intensive use of oxen in agriculture. The 1984 Livestock Census shows that more than one quarter of the Plateau herd consists of mature males (oxen 20.5% and mature bulls 7.5%). Cows constitute only 28.8% of the herd, a fact which further reduces the reproduction rate of the Plateau herd.<sup>16</sup>

The long calving interval, in combination with a calf mortality rate of 50%, gives a successful calving per cow only every four years. In a herd of 100 animals, only 7 calves reach the age of 2 years or more each year. This compensates for the animals slaughtered or sold because of old age, but not for animals killed by diseases or accidents, sold to cover urgent needs for money, or slaughtered for social events like weddings, funerals etc. The deficiencies in natural reproduction produced by this specific herd composition can only be accommodated by an intensive inflow of animals from other areas.

The present density of livestock and the strategy for herd building rely to a large extent on a regional network in which grain is exchanged for livestock. My hypothesis is that the strategy is designed to optimise the use of animals in agriculture at the expense of animals used for reproduction, i.e. oxen and bulls before cows. The miserable conditions for livestock keeping, resulting in a low reproduction rate, high calf mortality etc. seem to make people use more energy and allocate scarce pasture to keep animals which can be used in agriculture, i.e. to give manure and traction power. The major reason for this must be that agricultural activities may give a small surplus which can be used to compensate for the low reproduction rate of the herds. To obtain this surplus from the poor soils, manure is a *sine qua non*.

### *The use of manure*

Manure has been intensively used, at least from the end of the last century, on the Plateau. In the production system of the highlanders, manure is a postulate not only for agriculture but also for livestock keeping, i.e. to get a harvest large enough to give a grain surplus which may be exchanged for



livestock which can compensate for the naturally low rate of reproduction of the herds. The interdependence between agriculture and animal husbandry is most clearly illustrated in this need for manure.

A traditional standardised measure states that 10 animals are needed to produce the manure necessary for one acre of sandy soil. If evenly spread among the population, the livestock on the Plateau produce manure enough for  $\frac{3}{4}$  of an acre per household each year or 2 acres on a three-year rotational basis. The uneven distribution of animals (only 24% have more than 10 animals) restricts the use of manure for most households. Since villagisation a new problem has appeared for most households; how to transport the manure from their new villages to their fields in their previous villages, for some farmers 3-4 km away. People who have moved with their byres to the new villages often have to sell their manure today to the original settlers of the area of the new village. The latter still have their fields in or close to the new village since there has not been a thorough reallocation of land. As a result economic stratification has developed since villagisation.

### *Production strategy*

There seem to be economically good reasons for a farmer to try to fertilise at least portions of his fields. During a good year the difference between manuring and not manuring one acre may be as much as 4 bags of harvested grain. Each bag represents a value of Tsh 250-350, depending on the type of sorghum/millet, the quality and seasonal fluctuations. In a bad year the difference will be 3-4 bags, but they will represent a higher price due to the general scarcity of food. This amount of grain is obtained through the extra cost of approximately Tsh 50 which is the average price paid in the villages for the amount of manure needed for one acre. Hence, the extra labour and costs which have to be incurred in order to prepare, manure, plant, weed, harvest and thresh one extra acre of sorghum/millet may give approximately 3-4 extra bags or the amount of grain which is required to obtain one mature animal. In this way the human labour in agriculture "breeds" some of the animals in the Plateau herd.

During the end of the dry season there is a constant flow of animals from the plains to the Plateau. The low-land, with its rather unfavourable conditions for agriculture but better conditions for livestock keeping, provides the highlanders with a considerable proportion of their livestock. Instead of selling the grain surplus in the local market or to the national corporations, it is bartered into livestock.

The highlanders gain two advantages through this strategy. First they get mature animals, beyond the first critical years as calves, which may give manure, milk and/or traction power. Manure and draught animals are essential for agricultural activities. Secondly, they may optimise the advan-

tages given by fluctuations in the terms of trade. They often convert their grain surplus when demand and hence prices are high instead of selling it to the National Milling Corporation immediately after the harvest at low prices fixed by the Government. When the highly valued traditional types of white sorghum and millet are scarce on the plains then, the Plateau dwellers say, the right time has come to buy animals in exchange for grain.

In 1982 the average barter rate was one adult animal for 10 *debe* (a 20 litre tin) or 2.5 bags of the highly priced white types of sorghum and millet. The price for a *debe* of this kind of grain was then approximately Tsh 140 in the local market. This gives an average price of Tsh 1,400 for an adult animal.

The strategy is not only to obtain the animals needed for agricultural purposes but also to take advantage of the fluctuations in price when animals are bought and sold. When the rainy season starts, even animals which are worn to the bone often grow fat within a few months. The right season to sell animals to the livestock authority is during the second half of the rainy season. Besides the better condition of the animals sold, the prices are higher since rather few animals are brought to the auction market once the new harvest can be reaped. My survey of a village on the Plateau indicates that every third household sells one or more animals each year at auction. In 1981 the price varied from Tsh 900 for a miserable cow to more than Tsh 3,500 for a magnificent bull. The average price was Tsh 1,800. Compared with the average income of Tsh 85 per household earned from crop products sold to NMC/GAPEX, the income from livestock sales provides the households with their bulk of money.

Hence, the production strategy among the highlanders is to obtain mature or almost mature animals from the plains in exchange for grain. The animals are either kept for breeding or agricultural purposes or sold within a few years when they have grown to full maturity or when they have recovered from the hardships of the dry season. In this way, the cattle byres on the Plateau become a stop-over for the animals on their wandering from the breeding area to the urban butcher. The villagers on the Plateau have, according to my argument, adopted a strategy by which a grain surplus via livestock is converted into a new grain surplus or money.

## CONCLUSION

Up to the present it has not been possible for the national authorities effectively to enter the process of circulation in this kind of agro-pastoralism. The zonal specialisation, which is a result of regionally limited resources, and the marginal participation in the national market, will probably promote further marginalisation. There are reasons to believe that agricultural production has increased on the Plateau since an increasing

number of people are being fed there, and that livestock keeping has increased on the plains as new areas have been colonised. This increase in production has not, however, been documented in official statistics, since a large proportion of the produce is tied to the necessary internal circulation of grain for livestock and vice versa. There is also reason to believe that a large amount of grain will remain tied up and will not appear on the national market, until the need for manure and traction power and the need for high quality grain are met in a way which lessens the interdependence between the two ecological zones.

At present it is more sensible, and even necessary, for the highlanders to keep their grain surplus until "the hunger season" starts on the plains, instead of selling it to the national crop authorities who pay low prices and also pay in money which is often of little use to meet the needs the highlanders have for manure and draught animals. Their problem is that the stock they keep is not capable of reproducing itself to provide the necessary help in agriculture.

The lowlanders are often unable to reap an adequate harvest because of the annual low and erratic rainfall. The relatively good pasture **makes** it possible for them to exchange animals for grain, which is a necessary trade for the survival of many households on the plains. Instead of selling their animals to the authorities and buying the second-choice improved types of sorghum and millet from the NMC, they prefer to take their animals to the Plateau in search of the highly valued white types of sorghum and millet.<sup>17</sup>

Today, the embryonically developed market can offer few solutions to the problems facing the population in the two ecological zones. It is probable that the existing strategy for solving the local shortcomings in production – the intensive internal flow of products – will swallow even more grain and animals in the future, since this strategy, after all, has proved to be an efficient means of:

(a) increasing the agricultural output on the Plateau through an intensive use of manure and traction power and,

(b) supporting more people and, hence, also livestock on the plains.

The use of manure and traction power has resulted in increased agricultural production **but not** in an increased output for the market. The strategy itself and the present lack of alternatives for integration into the national economy – except by labour migration – will probably push the villagers even further into this internal circulation of products. If this zonal specialisation and production strategy spread to other parts of the agro-pastoral belt and if they develop further in Singida region, the agro-pastoral areas will probably be even more marginalised in relation to the national economy in the near future. To participate in this economy the agro-pastoralists will probably have to leave their home areas to become migrant labourers.

## NOTES

1. For this definition see Brandstrom, P., J. Hultin and J. Lindstrom, *Aspects of Agro-Pastoralism in East Africa*, Scandinavian Institute of African Studies, Uppsala, 1979.

2. See, for example, Morgan, W.T.W., *East Africa*, Longman, London, 1973, p. 83; Danefors, E., 'Climate' in B. Lundgren (ed), *Land Use in Kenya and Tanzania: The Physical Background and Present Situation and An Analysis of the Needs for its Rational Planning*, Royal College of Forestry, International Rural Development Division, Uppsala, 1975, p. 36.

3. Wisner, B., 'Man-made famine in East Kenya; the interrelationship of environment and development', in Phil O'Keefe and Ben Wisner (eds), *Land use and Development*, African Environment, Special Report 5, International African Institute, London, 1977; italics in the original text.

4. See Iliffe, J., *Agricultural Change in Modern Tanganyika, An Outline History*, Historical Association of Tanzania, Paper No. 10, East African Publishing House, Nairobi, 1971.

5. RIDEP, *Design for a Pilot Project for Integrated Rural Development for Singida Region*, Indian Planning Team, Indian Technical and Economic Programme, November 1974, p. 2.

6. The intricate balance between over-exploitation and underutilisation among agro-pastoralists is explored by Brandstrom, P., 'The Agro-Pastoral Dilemma: Under-utilisation or Overexploitation of Land among the Sukuma of Tanzania', *Working Papers in African Studies*, No 8., 1985, Academic Studies Programme, Department of Cultural Anthropology, Univ. of Uppsala.

7. On the Iramba Plateau (see later) per capita income during the 1978/79 season from crops sold to NMC/GAPEX was Tsh 15 or Tsh 85 per household. NMC, 'Ununuzi wa Wilaya Iramba', NMC, Msionu 1978/79 (March 1978 - April 1979). (Data collected at District Planning Office, Kiomboi) 1978/79; GAPEX, 'Uusaji wa Mazao Iramba'; Report at District Planning Office, Kiomboi, mimeo, 1978/79.

8. The difference in strategies between pastoralists and agro-pastoralists is illustrated in Brandstrom, Hultin and Lindstrom, op. cit..

9. This kind of agro-pastoral short-term grazing regime is discussed in Brandstrom, 'The Agro-Pastoral Dilemma', op. cit.

10. Hydén, G., *Beyond Ujamaa in Tanzania; Underdevelopment and an Uncaptured Peasantry*, Heinemann, London, Ibadan, Nairobi, 1980. Hydén seems to welcome a more thorough penetration of the capitalist market in rural Tanzania. I am not defending his position but I agree with him that the present kind of market integration may cause what I term problems of marginalisation.

11. This conclusion is based on the writings in *The Livestock Policy of Tanzania*, Ministry of Livestock Development, June 1983. The short-term proposal presented here is that emphasis will be given to "expansion of the fledgling commercial sector which incorporates both smallholders and large-scale farms" (p. 5). Although the agro-pastoralists may be included in the category of smallholders, it is often stated in the text that good communications and the distance to the urban market are of importance for the selection of livestock development areas. At present most of the agro-pastoralists are probably disqualified from taking part in this livestock development.

12. Population Census 1978; Iramba District. Data collected at District Planning Office, Kiomboi.

13. Livestock Census 1978; Iramba District. Data collected at Livestock Development Office. Kiomboi.

14. For information on reproduction rates in other parts of Africa see **Dahl, G. and A. Hjort, *Having Herds: Pastoral Herd Growth and Household Economy*, Liber Tryck, Stockholm, 1976, pp. 33 f.**

15. *Ibid.*, p. 36.

16. Preliminary data on the 1984 Livestock Census obtained from the Livestock Development Office, **Kiomboi**.

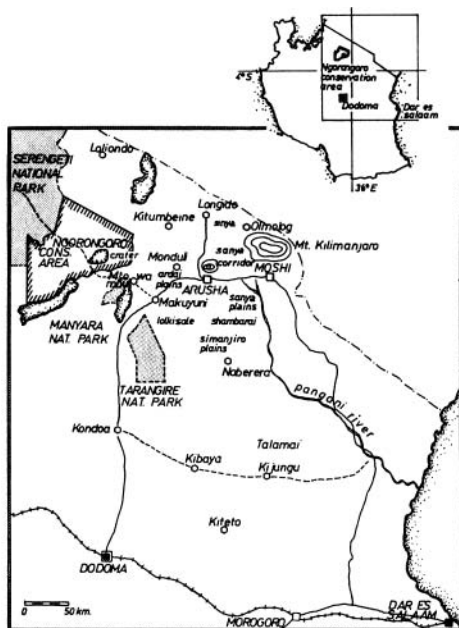
17. The white types of sorghum/millet are used both for making the *ugali* (the thick pomdige which is the staple food among the Iramba) and for brewing beer. To make good-tasting beer is often of great social importance, since beer is used at **all** major ceremonies and feasts. This can only be done from the white types of **sorghum/millet**. The improved types of these crops give a bitter and glue-like beer which few Iramba appreciate. Hence, the traditional white types still play an important part in Iramba diet and drinks. Furthermore, when the Iramba on the plains purchase a bag of the improved types at for example, the Regional Trading Company, they have to pay as much for a 90 kg sack as they pay in livestock when they exchange animals for grain; in both cases approx. Tsh 300 per sack (in 1982).



# 12. Pastoralism under Pressure: The Ngorongoro Maasai

*Kaj Århem*

The East African pastoralists are under pressure on several fronts. They inhabit semi-arid and ecologically fragile environments, they are usually marginal with respect to infrastructural developments and basic social services, and they form minority enclaves in the midst of an agricultural majority population. Their form of land use – extensive and mobile – tends to be conducive to conflicts with more intensive forms of land use promoted by the state. Hence, nomadic pastoralism is seen by planners and policy-makers as an obstacle to development, which is usually conceived in terms of sedentary agriculture and intensive ranching.



The history and current situation of the Ngorongoro Maasai in northern Tanzania reflect this general predicament of the East African pastoralists. This chapter examines the social and economic circumstances of the Ngorongoro Maasai against the background of the recent history of Tanzanian Maasailand as a whole.' By way of introduction I shall give a brief outline of the pastoral mode of life in its specific Maasai form.

## THE MAASAI WAY

The Maasai are the largest of the pastoral groups in Tanzania. Today the Tanzanian Maasai number some 80–90,000 out of a total 300,000 or so pastoral Maasai living in the Rift Valley region of Kenya and Tanzania.

Maasai social and economic life centres around livestock. Cattle, sheep and goats form the basis of their subsistence. Milk, meat and blood are their

dietary ideals, but in reality agricultural foods frequently supplement their pastoral diet, particularly during droughts and at the height of the dry season. Exchange of livestock for grain has probably always taken place between the pastoral Maasai and their agricultural neighbours. Today grain, mainly maize flour, is a dry season staple along with milk. Though their pastoral economy is basically **subsistence-oriented** and the purely pastoral diet is still highly valued, the need for grain firmly ties the Maasai to the economy of the larger society.

The herds of cattle kept by the pastoral Maasai are low-producing but sturdy and disease-resistant. To make up for the low productivity of the cattle and to ensure a sustained milk yield, individual stock owners strive to keep large herds. The cattle serve as a store of food and an insurance against disaster in an environment where drought is recurrent and livestock diseases endemic. Human population densities are low but animal-man ratios relatively high. Land-use is transhumant, which means that grazing areas are seasonally kept fallow to allow for grass generation and to reduce grazing pressure. Rich grazing land is typically used during the dry season and left to recover during the wet, when people and livestock move to lower-potential areas.

Livestock mean far more than food and economic security to the Maasai. Cattle in particular constitute a key value in Maasai culture. The entire social system is geared to cattle herding and moulded around the **trans-humant** mode of subsistence. Cattle are a multiple purpose resource. The live produce and the different parts of the carcass are used as food, medicine, utensils, clothing and adornment. But cattle also signify wealth and confer status. They serve as a medium of exchange, legitimise marriage and symbolise social relationships. Cattle are objects of affection and of supreme religious significance. They ultimately define the Maasai ethnic identity; the term for cattle, *inkishu*, also refers to the Maasai as a people. For the Maasai then, cattle give meaning to life; they mean life itself.

Rights to livestock are at once individual and social. Livestock are inherited from father to son but may be kept in trust by a man's wives. Clan mates and stock friends also have claims on the family herd.

Land is not owned by any one man but in a sense belongs to all. The Maasai are divided into territorial sections (*iloshon*), within which the members have priority rights in grazing. The section is subdivided into localities (*inkutot*) and neighbourhood clusters of settlements which effectively control customary grazing areas within the section territory. This hierarchy of rights in, and effective control over, grazing land is directly related to the requirements of herding in the semi-arid savanna environment: at times people and herds must be able to move over large areas in search of water and grass.



The Maasai thus see themselves as herdsmen by tradition and sacred mandate. They are "people of cattle" (iltung'ana loo ngishu). As such they are, in their own view, distinct from the agriculturalists and hunters who surround them. Hunters, people without cattle, are seen as poor men. For the Maasai meat is not daily food; cattle meat is, above all, sacred food. Agriculture is conceived of as desecration of the land on which cattle feed. The quintessential herdsman is the "big man" (olkatok), who builds up social influence by means of generosity and generalized exchange of his livestock, rather than the "rich man" (olkarsis), who accumulates wealth by reducing livestock exchanges.<sup>2</sup> The herdsman works for his family, his kin and his local community. Production is geared to the needs of the household. Beyond the household, food and property circulate within and between settlements along channels defined by kinship, friendship and age-group affiliation. This is, to the Maasai, the meaning of the "good life", the particular Maasai way of life.

At present the Tanzanian Maasai have increasing difficulties in reaching their accustomed standards of good living. They are drawn into the mainstream of the national economy and the political machinery of the state and hence are becoming increasingly dependent on economic and political forces outside their control. Their economic security and capacity to determine their own lives are reduced and their very existence as an ethnic group is threatened. Paradoxically, this situation has to a large extent been created by official national development efforts ostensibly aimed at improving their well-being and living conditions.

## CHANGE AND "DEVELOPMENT" IN MAASAILAND

The recent history of Maasailand is a history of land loss and marginalisation. The reputed military hegemony of the Maasai was definitely broken towards the end of the nineteenth century as a result of a combination of factors: a drawn-out internecine warfare among various Maasai sections, the great rinderpest which hit East Africa in the 1890s and the coming of the European colonisers. The rinderpest almost obliterated the Maasai herds. Weakened by disease and famine, which followed in its wake, the Maasai saw their best grazing land being taken over by white settlers and encroaching cultivators. The colonial land policies in Kenya and Tanzania favoured settler agriculture and indigenous smallholder farming.

In Kenya the "Maasai moves" of 1904 and 1911 excluded the Maasai from their dry season pastures and drought reserves in the highlands. In Tanganyika the Germans similarly attempted to confine the Maasai to a reserve on the dry Maasai-steppe. Though this attempt failed, they success-

fully evicted the Maasai from the rich grazing land around the base of the Kilimanjaro and Meru mountains, opening them up for white settlers and indigenous farmers.

Land alienation for development purposes intensified during the British colonial period. Large tracts of land in the centre of Tanganyikan Maasailand were taken over by settlers and indigenous farmers. Traditional Maasai pastures were turned into beef ranches, wheat schemes and small-holder farms.

The colonial land policy of taking over pastoral lands and putting them to more intensive use while compensating the pastoralists with extension services – improved range water supplies and veterinary services – continued after Independence and still largely characterises livestock development in Tanzania. The dominant trend in the evolution of livestock policies since Independence has been the growing state involvement in the livestock sector. Livestock development has basically come to mean the development of large-scale, state-owned beef ranches and dairy farms. However, the expansion of the ranch sector has yielded poor results, and has largely taken place at the expense of the pastoralists and agro-pastoralists.

In 1974–75 the nation-wide villagisation programme was launched in Maasailand under the name of Operation Imparnati (meaning "permanent habitations" in Maasai language) with the purpose of settling the pastoral Maasai in livestock development villages. The concept of livestock development villages – as distinct from agricultural development villages – was created and gained official acceptance at the time when planners and administrators realised that villagisation among the pastoralists had to be different from that among settled agriculturalists.

Livestock development villages are defined as those villages where livestock production is the main economic activity. The model type of livestock development village was to comprise a central settlement area and a village range, divided into a core area for the milk herd and an outlying range for dry- and wet-season use by the main beef-herd. The basic settlement units, the kraal camps, were to be arranged in a circular or semi-circular layout with the village services in the centre.

By mid-1975 more than 2,000 Maasai were reported to have moved into development villages.<sup>3</sup> By May 1976 an estimated 36% of the total population in Kiteto district and 31% in Monduli district had been resettled in 27 of 139 planned development villages.<sup>4</sup>

In effect, villagisation not only represented a step towards the imposition of a new settlement and land-use pattern, difficult to reconcile with the pastoral values; it also imposed a new authority structure in the traditional Maasai community. The new hierarchy of political offices – the chairman, secretary and manager – weakened the traditional leadership. It placed the

centre of authority outside the local community. The move towards a more nucleated and sedentary settlement pattern was experienced as a threat to the transhumant way of life and the resource-base on which Maasai society rests. Similarly, the restrictions on herd and settlement size stipulated by the villagisation programme touched the very core of the Maasai culture: livestock as a multiple resource and societal value. Restrictions on individual livestock holdings meant to the Maasai an infringement on their freedom and a reduction of their capacity to subsist. At the same time, the Maasai also saw in the villagisation programme a possibility of increasing their control over pastures, a possibility at least ostensibly reinforced by the latest (1983) national livestock policy.

## PASTORALISM AND WILDLIFE CONSERVATION IN THE SERENGETI-NGORONGORO AREA

Over the past three decades the creation and expansion of wildlife reserves has come to play an increasingly important role in national development policies in Tanzania and Kenya. A large number of game reserves and national parks have been established since the 1950s. In East African legal terminology national parks and game reserves exclude by law all kind of human habitation and subsistence activities. Game-controlled and conservation areas allow human habitation and certain forms of land use subject to strict controls. Maasailand is today filled with one or other form of wildlife reserve: on the Kenyan side the Amboseli National Park and the Maasai Mara Reserve, on the Tanzanian the Serengeti, Manyara, Tarangire, Arusha and Kilimanjaro National Parks and the Ngorongoro Conservation Area, all extend over traditional Maasai grazing land. The rest of this chapter presents an account of the development of wildlife conservation in the Serengeti-Ngorongoro area and its social and economic consequences for the pastoral inhabitants of the area.

The Serengeti plains and the Ngorongoro highlands have been inhabited by Maasai pastoralists since the seventeenth century, and before that by pastoral Tatog groups, ancestors of the present-day Barabaig. The number of people and the size of the domestic herds have fluctuated according to climatic variations, the incidence of livestock disease and inter-tribal hostilities. In 1929 the area held some 139,000 cattle and 227,000 sheep and goats. Twenty-five years later, in 1954, there were some 10,000 Maasai pastoralists with 122,000 cattle and 208,000 goats and sheep in the area.<sup>5</sup> The greater part of the pastoral population occupied what is today the Ngorongoro Conservation Area, but some 1,000-1,200 of them, with 25,000 head of cattle and 15,000 goats and sheep, lived in the Western

Serengeti, the present-day Serengeti National Park. The Western Serengeti was also used as a seasonal grazing area by a much larger pastoral population inhabiting areas to the south and west of the **Park**.<sup>6</sup>

Currently (1980) some 15,000 Maasai inhabit the western fringe of the Serengeti plains and the Ngorongoro highlands, keeping about 118,000 cattle and 145,000 small stock. Since 1959 they are confined to the Ngorongoro Conservation Area, extending over approximately 8,000 sq. km. I refer to the Maasai living in this area as the Ngorongoro Maasai. They do not, however, form a sociologically bounded unit, but are composed of various sub-groupings of different Maasai sections, principally the **Kisongo**, **Siringet** and **Salei** Maasai. Nor is their present homeland ecologically bounded; the Ngorongoro Conservation Area is an area defined by administrative considerations and political circumstances. It borders the Serengeti National Park in the west and extends to the Rift Valley Escarpment in the east. In the south it is bounded by the Highland Forest Reserve and the agricultural settlements of the Oldeani-Karatu area, while its northern boundary cuts an arbitrary line through the rugged Oogol mountains.

The Serengeti-Ngorongoro environment is typical of Maasailand in general: a mixture of open, short grassland on the low-lying plains, hilly parkland and tall grasslands and forests in the highlands with mountain peaks rising to over 3,000 m. This combination of dry, hot lowlands and more humid, cool highlands has for centuries provided the setting for pastoral communities in East Africa. The pastoralists and their herds of livestock seasonally alternate between the two types of environment according to a transhumant pattern of land use, finely tuned to environmental resources and constraints. The highland pastures are grazed during the dry season and the plains used in the wet season.

The cultural reality and the social system of which the Ngorongoro Maasai form a part embrace the whole of Maasailand on both sides of the Kenya-Tanzania border. Similarly the pastoral ecosystem extends far beyond the boundaries of the Ngorongoro Conservation Area: people and livestock temporarily move north into the Loliondo hills and east to the floor of the Rift Valley in search of water and pasture. Conversely, people and livestock from outside the area may also at times, particularly during periods of drought, move into the Ngorongoro highlands from the drier areas to the north and east.

## THE EVOLUTION OF CONSERVATION POLICIES

The Serengeti-Ngorongoro area has been widely known as a wildlife area since the turn of the century. Big game hunting flourished there in the early

decades of the century. The Ngorongoro Crater was declared a closed Reserve by the British administration in 1928. All hunting and agriculture in the Crater was forbidden by law. Yet hunting for sport continued unabated in the rest of the Serengeti-Ngorongoro area.

Towards the end of the 1930s, hunting had assumed such proportions that the British became concerned about the future of the area as a wildlife preserve. The entire Serengeti-Ngorongoro area was consequently declared a National Park in 1940, but it was not until 1951 that the conservation legislation was actively enforced. The year 1951 thus marks the beginning of effective wildlife protection in the Serengeti-Ngorongoro area. The legislation did not yet affect the rights of the people residing in the Park; indeed, they were explicitly protected. The resident Maasai were given positive assurances by the government that there would be no interference with their rights to live and subsist in the Park. However, in the course of the decade, conservation measures became increasingly strict within the Park: hunting was forbidden, human settlement and movement of domestic stock subjected to multiple restrictions, the use of fire strictly regulated, and – in 1954 – all cultivation prohibited in the area. A single-use concept of conservation, epitomised by the notion of the National Park, came to dominate conservation in the Park. Not surprisingly, the local pastoralists and cultivators reacted strongly against the Park authorities.

The resulting political unrest moved the colonial government to interfere and seek a permanent policy solution to the crisis which would satisfy the interests of both conservation and the resident pastoralists. The result was the partition in 1959 of the original Serengeti National Park into two separate land use units: the western part (formerly called Western Serengeti) retained the original name of the Park and was set apart as an exclusive wildlife area, while the eastern part, including the eastern fringe of the Serengeti plains, the Kakesio-Endulen area (previously outside the Park) and the whole of the Ngorongoro highlands, came to form the Ngorongoro Conservation Area.

Although in the colonial records this solution appears as a compromise approved by the Maasai, the decision in effect forced all the inhabitants of the Western Serengeti to abandon their homeland. Under pressure from international wildlife interests and the colonial administration, the Maasai agreed to leave the rich grazing areas and the permanent springs and streams of Serengeti. Most of them moved into the Ngorongoro Conservation Area where they were promised permanent rights in the land as well as new water supplies in compensation for those that they had lost.

The Ngorongoro Conservation Area was created as an area of multiple land use – an area in which several different but compatible land use interests were to be combined within an integrated, comprehensive land use policy. These interests included – apart from the basic policy concern to

conserve the natural resources in the area – the subsistence interests of the resident pastoralists and cultivators, tourist interests and archaeological interests.

Initially the decision-making body of the Conservation Area included Maasai representatives. However, the original administrative set-up was dissolved within a year and a new administration appointed in 1961, now without Maasai representation. Since then the resident pastoralists lacked representation in the successive administrations of the Conservation Area until 1981 when the Member of Parliament for the Ngorongoro District – who happens to be a Maasai – was included in the Board of Directors of the Ngorongoro Conservation Area Authority.

In the early years following the creation of the Ngorongoro Conservation Area some efforts were made by the administration to promote the rights and interests of the pastoralists. Range-water supplies were constructed in compensation for the natural water sources lost in Western Serengeti. However, the artificial water supplies proved grossly inadequate and most of them are today defunct.

In the course of the 1960s and 1970s the conservation regime successively hardened. The pastoralists experienced a steady shrinkage of their grazing land. Several prime grazing grounds in the Conservation Area were closed to grazing and settlement, including the Ngorongoro, Empakaai and Olmoti Craters, the Northern Highland Forest Reserve, the Lemakarot and Olosirwa mountain slopes, Olduvai Gorge and the Laitole archaeological site. Fire as a traditional tool for pasture management was prohibited. The ban on grass burning resulted in the expansion of unpalatable grasses like *Eleusine jaegeri* in the highlands. Where traditionally unpalatable grasses had been kept at bay by burning, they now expanded over the entire highland plateau suppressing the palatable grasses and radically reducing the dry season pastures. The spread of the tall, coarse grasses in the highlands also led to an increase in the incidence of tick-borne diseases, as ticks thrive in the tall, moist highland grasses.'

The most critical land loss was experienced by the pastoralists living on the floor of the Ngorongoro Crater. As a consequence of the villagisation programme of the mid-1970s and the hardening conservation rule, they were evicted from the Ngorongoro Crater in the late 1970s. Grazing and watering of livestock in the Crater, covering an area of some 250 sq. km, were prohibited. Since the Maasai occupation of the Ngorongoro-Serengeti area, the Crater had been the home and dry season base of a small community of Maasai pastoralists as well as an essential dry season grazing ground and salt lick for the pastoralists living in the surrounding highlands. This community, comprising at the time of eviction some five settlements, was now moved to a newly formed village on the western rim of the Crater.

In 1975, finally, all cultivation within the Conservation Area was prohib-

ited. Prior to this date, cultivation had been allowed as one form of land use under the multiple land use policy, though increasing pressure had been exerted by the Conservation Authority to restrict cultivation since 1970. In some areas, such as Endulen and Empakaai, cultivation was quite extensive by the mid 1970s. However, all over the Conservation Area small-scale subsistence cultivation of maize and beans provided supplementary food for the pastoralists. This supplement to the pastoral diet was considered essential by the pastoralists, particularly in the dry season. The availability of grain crops within the Conservation Area made the pastoralists less dependent upon the insecure market and the irregular supply of grain from outside. To the pastoralists in Ngorongoro, the prohibition of agriculture was a serious infringement on their subsistence rights and regarded as a threat to their very existence.

As in 1959, when the pastoralists were urged by the government to move out of Western Serengeti and abandon the pastures and water sources there, the authorities promised compensation, this time for giving up agriculture. The pastoralists were promised sufficient supplies of grain and other commodities in the village shops, together with veterinary services and help in improving their livestock economy through dairying and ranching. None of these promises has so far been fulfilled. Grain and other essential consumer goods continue to be in short supply in the Conservation Area. No grain storage facilities or stocks against hard times have been established, and plans for improving the livestock economy are still, at best, in the draft stage.

## PEASANTISATION AND MARGINALISATION OF THE NGORONGORO MAASAI

To the Ngorongoro Maasai the conservation regime has meant restrictions on resource use and an increasing dependence on the external market. The resettlement of the Siringet Maasai in Ngorongoro after their expulsion from the Western Serengeti in 1959 and the increasingly strict regulation of resource use in the Conservation Area during the following two decades resulted in growing pressures on shrinking resources: a reduction of dry season pastures, a decline in pasture quality, and an intensified competition between wildlife and domestic stock for pastures and water sources. The productive and reproductive capacities of the domestic herds, particularly cattle, declined in consequence.

The cattle per capita ratio, a crude measure of economic prosperity and subsistence standards among pastoralists, fell from a value of about 13 in 1960 to seven in 1977. During the same period the ratio of small stock per capita increased from 8 to 15. The proportion of small stock in the total

livestock herd in Ngorongoro increased from 36% in 1960 to 52% in 1980, with a peak figure of 69% in 1977.<sup>8</sup> The increase in size of the small stock herd reflects a conscious effort by the Ngorongoro Maasai to make up for the decline in the cattle herd and the falling ratio of cattle per capita. Small stock, with their faster growth rate, increasingly take the place of cattle in the pastoral economy of the Ngorongoro Maasai.<sup>9</sup> But small stock give less milk and have a lower market value than cattle. To the Maasai cattle still mean wealth, and small stock are considered the poor man's substitute. The changing composition of the pastoral herds in Ngorongoro over the past two decades thus indicates a process of impoverishment. There is less milk available per family and each family's potential cash returns from livestock sales are smaller than they were 20 years ago.<sup>9</sup> The demand for supplementary foods – grain – has consequently increased.

A survey of the food situation among the Ngorongoro Maasai in 1980–81 revealed that the current system of pastoral production in Ngorongoro is not capable of supporting the pastoral population on an all-year-round and self-sustaining basis.<sup>10</sup> The total food yields from the domestic herds – milk, meat and blood – satisfied only about 60% of the total community energy requirements for the year 1980, a relatively good year in terms of rainfall. There was, in other words, a demand for supplementary foods corresponding to about 40% of the total energy needs of the pastoral community. As agriculture is prohibited in the Conservation Area, the Ngorongoro Maasai are entirely dependent on the purchase of grain to satisfy this need. And in order to purchase grain the pastoralists must sell livestock, i.e. cull their herds. They are caught in a vicious circle: as their herds decline in size they are increasingly forced to sell animals to obtain grain, thus further reducing the reproductive capacities of their stock. And so they become more and more dependent on the irregular supply of grain in the market, over which they have no control.

The same survey also revealed that the supply of grain in Ngorongoro fell far short of the estimated demand. There is not enough grain available in the local shops to meet the demand. Between August 1980 and July 1981, records show that the supply of grain in the Conservation Area satisfied less than 85% of the total demand for supplementary food in the pastoral community. The shortage of grain is particularly pronounced during the dry season when milk yields are at their lowest. Of the grain consumed by the pastoralists only a fraction, some 15%, came from the state-owned company responsible for providing and distributing grain and other consumer goods to the shops in the area. The bulk of the grain available (i.e. 85%) was obtained by the pastoralists from so called parallel markets, i.e. from private shopkeepers or directly from the producers in neighbouring agricultural areas. In fact, the survey showed that the commercial off-take (in



1980) from the pastoral herds in Ngorongoro was potentially sufficient to satisfy the community energy needs through the purchase of grain, had grain been available in the shops."

This situation has produced radical changes in the pastoral economy. The pastoral diet has changed in quality and composition, and the food situation among the Ngorongoro Maasai has, on the whole, deteriorated. The pastoral economy has changed from a cattle-based to a small stock-dependent economy, and from a self-sufficient subsistence economy to an exchange-oriented, partly commercialised livestock economy, tied to the external market. The pastoralists are becoming increasingly dependent on grain as a supplement to their purely pastoral diet. A detailed study of food consumption in 10 pastoral households during the dry season of 1981 showed that grain on the average provided 53% of the household energy intake in Ngorongoro, while milk and meat together provided 44%.<sup>12</sup> In other words, grain, not milk, is at present the dry season staple among the Ngorongoro Maasai, supplying more than half of the total household energy intake. But neither grain nor milk and meat are available in adequate quantities to satisfy the total energy needs of the household. Though protein needs seem to be well satisfied, there is a marked energy deficiency in the dry season pastoral diet. On the whole, the average total household food intake satisfied only some 70% of the estimated energy requirements."

The escalating food crisis and the increasing commercialisation of the pastoral economy in Ngorongoro have brought other changes with profound social and economic consequences. The system of livestock exchange, which traditionally served as an economic levelling mechanism, is giving way to an increasingly individualistic, fragmented household economy: instead of ritually sharing slaughtered domestic animals in communal feasts and occasionally bestowing livestock on families or individuals in need, the pastoral household today sees itself forced to sell stock in order to obtain grain for its own sustenance.

The individualisation of the pastoral economy in this way leads to an enhanced differentiation between rich and poor livestock owners. Whereas formerly the poor herd owner could rely on the traditional system of livestock exchange for rebuilding his herd, he is now left on his own. The number of poor herd owners is consequently increasing. Surveys among the Ngorongoro Maasai in 1980–81 showed that some 15% of the total number of pastoral households had less than 10 head of cattle, which is far below the subsistence minimum, while less than 5% had more than 300 head of cattle, which is well above this level. The majority – some 70% – own a herd of some 30–50 head of cattle, which implies that they barely manage to subsist on the off-take from their herds and the exchange of livestock for grain.<sup>14</sup>

## SUMMARY AND PROSPECTS FOR THE FUTURE

To sum up, for the Ngorongoro Maasai, twenty years of conservation rule has brought falling living standards and increasing poverty. For the majority of pastoralists, food and health standards have declined. From being self-sufficient pastoralists, capable of maintaining a modest but adequate standard of subsistence through their traditional system of pastoral production, they have turned into impoverished pastoral peasants, tied to the market and subject to increasing state control.

In a wider perspective the evolution of conservation policies in Ngorongoro closely parallels the development of livestock policies in Tanzania in general. In fact, the conservation policy is part and parcel of the national development strategy. Just as conservation policies have moved away from a multiple-use concept of resource management towards a single-use concept of land use epitomised by the notion of the national park, livestock policies have shifted from the early colonial efforts to improve traditional livestock economies through extension services to the current ambition to develop large-scale, state-controlled beef ranches and dairy farms. Indeed, the national park can be seen as the direct counterpart of the beef ranch: a huge, state-controlled, mono-cultural estate, producing services for consumption by foreign tourists. People, the indigenous producers, are no longer seen as a resource and a basis for development, but as an obstacle to development. Like the ranch, the national park is easier to handle and control than traditional human-use systems, easier to gear towards the overriding national development goal of increased, export-oriented production under firm state control.

In this light, conservation policies become an integral part of the overall national development strategy of Tanzania. In terms of their impact on the pastoralists, current conservation and development policies are similar, they represent two different but related forms of state intervention into the rural society, which tend to marginalise the pastoralists and replace indigenous production systems with large-scale agro-industries, on the one hand, and tourist development-estates, on the other. In Western ideas, conservation and modernisation are contradictory concepts: in the Ngorongoro context wildlife conservation is, in a sense, another side of development.

But there are alternative notions of development and conservation. The future of Ngorongoro depends on the type of conservation and development policy which is chosen and adhered to. Development and conservation are incompatible only if development is identified with modernisation and industrialisation, and if conservation is understood in the narrow sense of wildlife protection with the exclusion of man. But if, on the other hand, development and conservation are understood in the broader sense of

sustained and environmentally rational land use by man, then there is no inherent incompatibility between conservation and development. On the contrary, conservation becomes in this perspective an integral part of development.<sup>15</sup>

There is room for both people and wildlife in Ngorongoro. But their continued coexistence requires a radical break with current policy trends in Ngorongoro—and in Tanzania as a whole: it requires a move away from the modernisation approach to development and the single-use concept of conservation that goes with it, towards a multiple land-use concept of conservation, and a comprehensive concept of environmentally sound and culture-oriented development.

## NOTES

1. The chapter largely summarises material presented elsewhere. i.e. Århem, Kaj, 'A pastoral food system: the Ngorongoro Maasai in Tanzania', *BRALUP Research Paper* No. 70, Dares Salaam, 1981; Århem, Kaj, 'Two sides of development: Maasai pastoralism and wildlife conservation in Ngorongoro, Tanzania', *Ethnos* 49:3-4 (1984), pp. 186-210; Århem, Kaj, *The Maasai and the state: the impact of rural development policies on a pastoral people in Tanzania*, IWGIA Document 52, Copenhagen, 1985, and Århem, Kaj, *Pastoral man in the garden of Eden: The Maasai of the Ngorongoro Conservation Area, Tanzania*, The Scandinavian Institute of African Studies, Uppsala, 1985.

2. Cf. Galaty, John G., 'Land and livestock among Kenyan Maasai: Symbolic perspectives on pastoral exchange, change and inequality', *Journal of Asian and African Studies*, 16:1-2 (1981).

3. Parkipuny. Lazaro M. S., 'Some crucial aspects of the Maasai predicament', in Andrew Coulson (ed.), *African socialism in practice: the Tanzanian experience*, Nottingham, 1979.

4. Hoben. A.. 'Social soundness of the Masai Livestock and Range Management Project'. *Report by the USAID Mission in Tanzania*, October 1976.

5. *The Maasai District Book*, Dar es Salaam, 1954. See also Grant, H. St. J., *A Report on human habitation in the Serengeri National Park*, Dar es Salaam, 1957.

6. Ibid.

7. Branagan. D.. 'A conflict between tourist interests and pastoralism in the Ngorongoro highlands of Tanzania'. in *Tourism in Africa and the management of related resources; Proceedings of a seminar at the Centre of African studies*, Edinburgh, May 1974.

8. Århem. *Pastoral man in the garden of Eden*, op.cit.

9. For a fuller treatment of the relationship between cash returns, purchasing power and the living standards of the Ngorongoro Maasai. see *ibid*.

10. Århem. 'A pastoral food system' op.cit.

11. Ibid.

12. Ibid.

13. Ibid.

14. Århem. *Pastoral man in the garden of Eden*, op.cit.

15. Ibid. See also Århem. 'Two sides of development' op.cit.



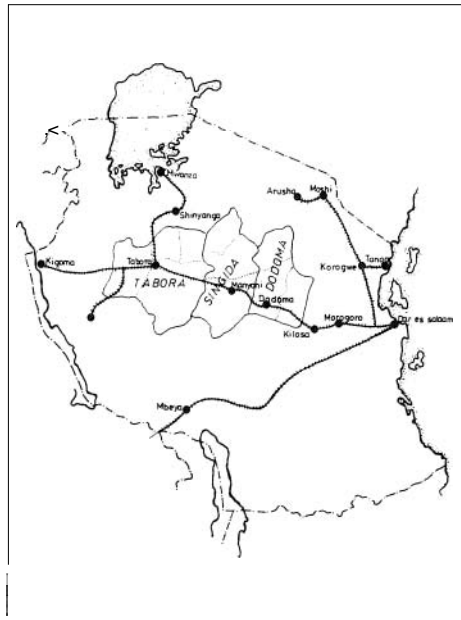
# 13. No sugar – no tea! A Women's Cooperative in Crisis

## Some Experiences from Manyoni Town in Singida Region

*Ulla Vuorela*

### INTRODUCTION

The small rural town of Manyoni, with about 9,000 inhabitants in 1978, is situated in Singida Region along the Central Railway line between Dodoma and Tabora. Manyoni is the District headquarters of one of the three districts in Singida and belongs to that belt of the region which is frequently hit by droughts and suffers from food deficits. During the colonial period, Singida Region was a supplier of labour to plantations in Arusha, Moshi and Tanga, while currently a seasonal migration pattern has become more common. This follows the rhythm of the dry and rainy seasons which each lasts for about six months.



For those who stay in the area the long dry spell means a slack season in terms of agricultural work and a pressing need for other income when the food stores are getting empty. Money is needed not only to buy other essential commodities but also to buy food, which may be sold at exorbitantly high prices on parallel markets during years of poor harvests. Through the years, the region has been a net importer of grains and a recipient of a lot of famine relief. Difficulties in transport and communica-

tions also have their impact on the economic situation and are also reflected in the food prices.

During the rainy season, cultivation is a vital activity for the urban dwellers of Manyoni too, and women, who are the backbone of food production, can think of no other activities during the cultivation period. During the dry season, money-making becomes imperative for them also, but they face a number of problems. Employment opportunities for peasant women in and around Manyoni town, who have no formal training nor specialised skills, are few and far between. Given the nature of the region as a food deficit area, the income from crop sales cannot really be relied on, as the peasants' stores may be empty for a period of anything between 1 and 12 months before the new rains start.'

Various forms of petty trade have been and still are the main openings for earning some income for women in Tanzania, particularly in urban areas. This usually means selling processed foods such as local types of bread (mandazi, chapati, vitumbua etc.), vegetable and meat soups and snacks as well as products from poultry projects. However, in recent years, all of these activities have been severely hit by problems. Lack of wheat and maize-flour, rice, yeast, cooking oil, sugar, salt, chicken feed and medicines have forced both individuals and groups of women out of trade, or else they have had to resort to black-market operations or going back into the brewing of local beer which never lacks markets and which can thrive on local ingredients but which brings its own problems.

Tailoring and needlework are typical activities promoted for women by government agencies and international organisations. Efforts to initiate tailoring projects for women in Manyoni have also faced a number of problems, not only through the lack of raw materials, training and technology, but also because of difficulties in trying to penetrate a male-dominated private trade. Needlework, again, has mainly remained a voluntary activity for women in various church groups and women who are already "better-off" at the outset. The biggest mobiliser for women has remained the co-operative activity which has through the years shifted from an independent co-operative to an Umoja wa *Wanawake* Tanzania (UWT) activity and back, following changes in national policy recommendations. Dealing with women's enterprise in Manyoni, we shall be talking about difficulties in organising a co-operative, difficulties in running a trade, difficulties in running women's projects and how the national and international situation hits the women's efforts both in their individual and organisational lives. We shall see how it is the poorest women who bear the brunt of the economic crisis in the case of Manyoni also.

The Economic Programme for Women in Manyoni town, Chama cha Vikundi Vya Kiuchumi cha Akina Mama Coop Ltd (hereafter Chama), a multi-purpose co-operative run by women, had by 1979 attracted the

attention of donor agencies and evaluators as a "success story" among women's economic activities in Tanzania. The co-operative was running a poultry project, a hotel and bar, and a traditional beer club. A breadmaking project, and the purchase of a bus were planned. Even if the members' monthly cash earnings were relatively small, the women's *Chama* in Manyoni seemed to stand out as a success when compared, for instance, with the UWT's economic activities in the four regions of Arusha, Kigoma, Dodoma and the Coast. A study in 1980 of the co-operative efforts within the UWT in these regions showed a high rate of failure.<sup>2</sup>

I had come into contact with the activities of the *Chama* when I was working as an evaluator of Canadian aid to non-governmental organisations, and its impact on women. Within this context, I visited Manyoni town, where a Canadian organisation, the Canadian Universities Services Overseas (CUSO) had promised to donate 12 sewing machines to a tailoring co-operative under the *ujamaa* and Co-operative office of the government. As it had taken CUSO two years to provide the sewing machines, the evaluation task became the documentation of a disaster rather than an assessment of on-going activities.

The group of girls who were to receive the machines had dispersed and the sewing machines – semi-industrial electric ones – turned out to be a failure, as the town had no adequate electric supply and the co-operative itself did not have the resources or the social basis to benefit from the machines.'

It was in this connection that I came to know about the dynamic women of the *Chama* in Manyoni; they stated that they were prepared to receive the sewing machines on behalf of the other group and that they would be capable of running a co-operative under the auspices of the UWT. "What we start, never fails", the UWT chairwoman said to me.

The activity buzzing around the core project, the Mapinduzi Hotel, seemed to corroborate her statement: in the course of the day food and tea were served to a large number of customers. This resulted from the fact that a number of buses stopped in front of the Mapinduzi Hotel where passengers sought refreshment. Thus the hotel had a good location for undertaking its economic activities. Around the backyard, there was a lodging area which could cheaply accommodate guests in its nine rooms. The women's projects had their office in the same courtyard, and one could see the women busy coming and going to the office, to the kitchen, to the bar and the shop, or just to exchange news. About ten women worked daily in the kitchen, and others came to see them. The hotel certainly was the centre of a number of activities.

When, in 1982, the ILO was seeking case studies of successful initiatives for women in the Third World, it seemed appropriate to suggest the women's *Chama* in Manyoni as a Tanzanian example. At the outset of the

investigation the Tanzanian study team of seven contested the very notion of a "success", because (as the research was also to show) even the best of the so-called successes could be challenged if critical questions related to the benefits from projects were posed. It turned out that a polarisation of the membership often occurred, whereby those in a position to control the co-operative's activities could easily manipulate and gain benefits at the expense of the majority. A major number of the members could easily be reduced to nominal shareholders or to members who contributed unpaid labour without being able to benefit in other ways. At its starkest, the contradiction occurred in projects which employed casual women labour; these women were often not even members and in some cases it became increasingly difficult for them to join. Common to several projects, in addition to internal problems and limitations, was their struggle against difficulties and constraints which were largely beyond their own control. These included difficulties in getting raw materials, marketing and transport problems, competition from men and from private enterprises, and problems with the bureaucracy. These constraints emerged largely as a result of the general collapse of the distribution, marketing and transport infrastructure, which can be identified with the economic crisis Tanzania has been facing since the late 1970s. Its impact was more or less directly experienced by all the seven Tanzanian projects studied, most notably in terms of a decline in production and as well material benefits, which could not keep up with the galloping **inflation**.<sup>4</sup>

The impact of this general economic crisis was clearly felt by the women in Manyoni in 1983, only two years after the initial contact was made to study their impressive activities. The business and trade had now quietened down a great deal, which was evident in the silence of the Mapinduzi Hotel. It turned out that no dividends had been distributed to the co-operative members after 1980, and several members had consequently retreated into passivity or had left the projects. One major reason for this was the collapse of the bus service in the area, which was due to the lack of spare parts and the re-routing of some of the lines. The decline had been exacerbated by competition from private enterprises which had been able to manipulate the economic crisis to their advantage. The case of Manyoni thus became a demonstration of the effect of external shocks, combined with internal problems, in economic projects run by women. At the same time, the history of the *Chama* can be seen as a typical example of the development dynamics of a co-operative enterprise. Some of the co-operative's problems are typical of any co-operative enterprise in Tanzania, while others reflect those peculiar to women's enterprises. Hence the case shows the way women have to struggle for survival under conditions of severe economic hardship.<sup>5</sup>



## THE ECONOMIC PROGRAMME FOR WOMEN IN MANYONI TOWN

The history of the Economic Programme for Women in Manyoni town, the *Chama*, goes back to the years of national enthusiasm for self-help activities and the formation of the *ujamaa* policies. In 1966/1967, the women in Manyoni responded favourably to the national call urging people to combine their individual economic activities into co-operative enterprises. It was in this wave that a group of about 55 women decided to bring their individual petty trades under one co-operative umbrella.

They established a joint hotel enterprise which they named the *Taifa* – the Nation. In this hotel the women served meals, tea, bread and a variety of local snacks. This activity did not continue for long, however, because soon afterwards a national call was made that all women's activities should come under the umbrella of the UWT, the Party mass organisation for women. The Taifa Hotel then closed its books, distributed the money to its members, and started anew. Women were now mobilising on a wider basis under the UWT, even if the core activities remained practically the same. One of the energetic women, Saada Mohamedi, who was the UWT chairwoman until 1978, personally went to borrow the starting capital of Tsh 100 from the office of TANU. This money was invested in cooking ingredients, and after selling tea and food, the women quickly earned Tsh 300 and were able to pay back their loan to the Party the next day. It was the UWT chairwoman who dealt with this, and she recollects that the remaining Tsh 200 were then used to restart the hotel's activities.<sup>6</sup> The first dividends were distributed in March 1969, members receiving Tsh 35, 70, or 105 according to the respective entrance fees of Tsh 1, 2, or 3.

At this time, the District Party Secretary in Manyoni town, Grace Chibanhila, was a central figure in facilitating the progress made by women's enterprise. She already encouraged them in the initial stages and delivered speeches spiced with political education. As the rent of the hotel premises kept going up, she encouraged the women to build their own premises for their economic activities. The women decided to do so and, with the help of the Party Secretary, the bureaucratic procedure was concluded by September 1973 and the actual construction of the house began.

In the meantime, however, it had been decided that the new building should become the property of the District UWT, and all the district branches were mobilised to contribute Tsh 10,000 for the building. The women in Manyoni town decided to contribute their labour for the construction. In Saada Mohamedi's and Pili Bakari's description:

It was the women of **Manyoni** town who dug the foundation themselves. We did not have any men to help us, we carried sand, we **carried** the stones and the building blocks and we even made those blocks ourselves; even the corrugated iron roof was fixed by the women. This we could do, because two construction experts (*fundi*) with their assistants were hired, and they explained to us, how things had to be done. But it was we women who contributed most of the labour.'

When the work had proceeded half-way, the second Vice-President, Rashidi Kawawa, visited the building site and contributed another Tsh 10,000 to finance the corrugated iron roof. The rest of the expenses were financed through a loan of Tsh 8,000 from the National Bank of Commerce, which the women were able to pay back in three months' time. Transport was provided by the district authorities and a number of private shopkeepers assisted with either money or hotel equipment such as bedding, pillows and mattresses. Thus the building, formally opened by President Nyerere in 1975, represented a considerable joint effort of the women and various sections of the community, including top national leaders.

However, back in 1974, when the new building was nearing completion, the Annual General Meeting of the UWT took a decision that henceforth District and Regional branches of the UWT should not engage in economic activities. On their return home the delegates from Manyoni called a meeting which decided that the economic activities were now to be separated from the other activities of the UWT branch. After some time, the books were closed again and the property distributed. The projects which had been started were developed under a registered co-operative society, the *Chama*. Consequently the various economic groups came under the supervision of the district and regional offices of the Government Ujamaa and Co-operative Department.

When the new building was ready, the facilities were divided so that the lodging house and the new building belonged to the District UWT, whereas the shop, hotel and bar housed in it were for the use of the respective economic groups. The co-operative had its own leadership, separate from the UWT, and the projects paid rent to the UWT for the use of the facilities in the new building.

In February 1978, plans to buy a bus were already under way and the three projects based in the Mapinduzi Hotel, the shop and the bar had a total of Tsh 51,425 in their bank accounts. By 1979, the decision to buy a bus was changed in favour of buying a lorry, following the advice of the Ujamaa and Co-operative authorities. They argued that a lorry would be more beneficial as it would transport their goods and could even be hired out. By contrast, running a bus service was liable to face many problems. In 1979, another Tsh 18,132 was added to the vehicle fund, after the co-operative officers decided that the women had been too generous in distributing their

income and had not retained the 24% of earnings in the development account as required by the co-operative law. Once these back payments were made, the District Ujamaa and Co-operative Development officer stated that they could apply for a loan for the purchase of a lorry. However, at a co-operative meeting in December 1980, with 54 members present, the plan to buy the lorry was abandoned. This was because of increased import restrictions caused by the scarcity of foreign exchange. Instead, it was decided that the funds should be used for building new facilities for the economic groups, whose rents by 1983 amounted to Tsh 10,400 per year. By 1981, the authorities had already allocated a plot for the new building which was to include a hotel and a lodging house as well as a community centre. The estimated cost was set at Tsh 300,000 and application for bank loans was made in 1983. By this time, however, the growth of savings of the enterprises had decreased. In recent years the women had actually been hit by the rapid inflation, 30% annually according to official estimates, which had eaten away a lot of the real value of their total savings.

## THE RISE AND FALL OF THE MAPINDUZI

In 1977, the co-operative hotel, which had changed its name from *Taifa* to *Mapinduzi* (the Revolution), in solidarity with the new national party of *Chama cha Mapinduzi* (CCM), had 82 members. The dividends distributed to members that year were about Tsh 36,000. The peak in distribution was reached in 1979, when 97 members received a total of Tsh 38,530. A downward trend began in 1980, when the dividends to be distributed failed to reach Tsh 30,000, while the number of members had risen to 112. Whereas those who held three shares received Tsh 400 in 1979, they pocketed only Tsh 285 in 1980. Since 1981, no new distribution of dividends had taken place, nor had any general meetings been held and the accounts were alleged not to be in order. Not even the best “moneymaker” among the members, unless perhaps those few leaders who earned a regular monthly income, could possibly have earned an income amounting to more than occasional pocket-money. The 34 women who had been able to build their own houses with corrugated iron roofs, according to one of the studies made of the co-operative, could not have done so on the basis of benefits now accruing from their co-operative activities.

Nor was it possible to pay the secondary school fees for the children of ten of the women.<sup>8</sup> In fact, by 1981, the rapid inflation had drastically eroded the project savings as well as individual earnings, and the vehicle fund had shrunk to insignificance in relation to its current price. The economic problems emerging in the co-operative could be related to the general national economic crisis to a great extent. This affected the viability of their

projects, and the internal relations of the projects also went through a number of problems.

The deterioration was manifested also in the decline of the services offered to the women by their own shop, which related both to the range and variety and to the prices of the items available for sale. In 1977, the shop sold maize, wheat flour, rice sugar and salt at government prices. None of these items were available in 1983. Furthermore, in 1977, a tin of cooking oil cost Tsh 8, while its official price was Tsh 45 in 1983, and about five times as much in the parallel market. In 1977, a variety of basic medicines were available at cheap prices, including malarquine and aspirin as well as important items for household hygiene such as poison against bedbugs, cockroaches and lice. Mosquito pumps and mouse-traps were also available – items not seen for a long period in many areas in Tanzania. Cosmetics available in 1977 included various types of soaps and body oils, none of which were available in 1983. In short the items listed in the 1977 stock represented a wide variety of commodities ranging from steel-wool and batteries to brassieres, knitting-wool, baby blankets, *khanga* and *vitenge* in a list which ran over 9 pages and was worth Tsh 34,900. In 1983, the value of the stock was about the same but with far fewer items. Those visibly available in 1983 mainly consisted of tea, biscuits, tinned juices and tinned beef, cigarettes and a big stock of enamel plates, tea-spoons, glasses, metal cooking pots and enamel bowls – all slow-moving items except for the cigarettes. Bed sheets cost Tsh 115 in 1983, while their price had been Tsh 36 in 1977.

Even if account is taken of the fact that, in 1983, a number of basic items allocated to the shops were distributed direct to the members, the standard of the service to the co-operative members had definitely declined. As to the selection of articles for sale, the shopkeepers had very little say: the various regions depended on the allocations decided upon in Dar es Salaam, while the Regional Trading Companies were given the power to undertake regional and district allocation. At district level, a committee carried out the final allocation to individual shops. In 1981, the Manyoni District UWT chairwoman, herself working in the district branch of the Regional Trading Company, complained that the women's shop got too many slow-moving items which tied up their capital. Others commented that the women's shop tended to get a disproportionate number of cooking pots and *khanga*. In addition, those items that "leaked out" to the parallel market were even less accessible to the poorer women, because of their exorbitant price. The fact that some commodities went first into the hands of the project leaders was a common complaint. In the women's co-operative in Manyoni, the problems were intensified by the fact that the secretary, accountant and manager of the co-operative was one and the

same person. Allegations were made that the dividends had not been paid in 1981 and 1982 because she was too busy in all her posts to be able to keep the records properly – a precondition for the division of profits and for new members to be allowed in.<sup>9</sup>

Part of the co-operative "elite" in this case were those women who had stayed in from the very beginning and belonged to the 15-strong committee, or else were shareholders in all the projects. The number of shares the women held in the different projects came to indicate the economic and social stratification involved in the economic programme.

If we look at the situation in 1980, when the available records were most complete, 18 women held shares in 5 projects, 15 in 4 projects, 26 were shareholders in 3 projects, 38 in 2 projects, while 48 women held one share in any one of the five projects under the *Chama*. The difference in earnings became pronounced. For instance, in 1980 the maximum a holder of shares in 5 projects was able to pocket was Tsh 923, while those having only one share received only Tsh 207.<sup>10</sup> There remained a group of women who neither held shares nor were members of the co-operative, but who contributed casual labour, especially in the hotel enterprise and in the kitchen. The formation of this latter group had been a gradual process.

## LABOUR ORGANISATION

In the beginning, labour quotas rotated between the members so that all shareholders would work for one week when their turn came. This system had been gradually replaced by shareholders who sent somebody else on their behalf, paying money for the week's labour. This was still considered as the member's own working quota and her access to the dividends was not affected.

Until 1983, a fair number of those working in the kitchen belonged to the category of non-member, casual labourers. The quota consisted of seven consecutive days with working hours from 5.30 a.m. to 8.00 p.m. Thus the working week lasted 99.5 hours on an hourly basis. Even if there were busy and slack times, the women were supposed to be on the premises of the hotel during this time. The wage for the week's work was normally Tsh 45, implying a daily wage of just below Tsh 7. This is far below the official daily wage for unskilled labour in urban areas, which was around Tsh 20 in 1983.

The women who were forced to provide this kind of labour seemed to come especially from among the widows and single mothers with little choice in terms of money-making opportunities. Elderly widows were earning some money in order to be able to buy school uniforms for their grandchildren, or they belonged to the group just because they did not have

any other way of earning cash. Some of the women worked two or three weeks at a go, even if the work was very tedious. As one of the women explained:

Look, count this up yourself. What are your basic needs? Take the price of some of the necessities: you pay Tsh 20 for a kilo of meat, 4.50 for  $\frac{3}{4}$  of a litre of kerosene, 2 for a box of matches and 2-3 for salt – how much is that? Tsh 29.50 or 31.50. And still you have not got your maize for *ugali*. Now you will have to work for two weeks, which will give you Tsh 90 in order to be able to pay for a *tin (debe)* of maize meal which costs Tsh 70. After buying your maize meal, how much do you have left for the vegetables? Tsh 20. Besides, during the food shortage just before the rains, the price of one tin could go up to Tsh 120 until the government intervened. Now, if you have to take your children to the hospital, the fee for each child is Tsh 3 for the small ones and 4 for the bigger ones. So at the end of your first week you realise that you have not met your basic needs yet and that you have to go on for the second week. At the end of the second week you may still have to go on, because you have still got so much need for money. However, after the third week I *have* to go home, because after three weeks in the kitchen I am so tired that it is just impossible to go on . . . There are times, when I just can't sleep at night, because my mind is so full of sorries about how I am going to manage everything.

The contradiction between actual members and casual labourers had also taken the form of ideological battles and conflicts among them; there was not only a difference in the material outlook of the leaders in their ability to clothe themselves and take care of themselves, but their behaviour towards the casual labourers could be arrogant. "Oh, if you knew how they bully us", one of the kitchen workers said to me. The casual labourers complained that the leaders were trouble-makers and did not respect the workers. "They even abuse us and accuse us of getting pregnant here in the confines of the co-operative, even if most of them themselves do not have a husband or a male supporter (*bwana*)". The sales girls in the bar had to defend themselves against harassment from the male customers. Some of the labourers also had to engage in prostitution to supplement their income.

### *The situation of single mothers*

The co-operative activities around the hotel became a resort for widows, divorcees or women who had children but who had never married. The latter category seemed to be particularly common among the younger members and workers, who commented that "These days people do not want to get married. However, both the divorcees and those who had never married often had a large number of children to support and, for them, whatever little they could earn from the co-operative was vital. One of the divorcees told me that she had seven children and still had to take care of their schooling. A young girl and a mother of one child commented, "What

do you do when men refuse to accept their fatherhood? ". She had been made pregnant by an age-mate of hers who simply refused to accept the child by saying that it would look in the eyes of his friends as he was getting old if it came to be known that he had already got children. If the father refuses to acknowledge the child, there is not very much the mother can do about it these days in an urban situation. Traditionally, a palaver of the two families would be held but these practices are disintegrating nowadays.

The case of H is an even **starker** example of the oppressive situation of an unmarried mother. **While** she was still young, she was courted by a man who finally got impatient and forced her to have sexual intercourse.

I was hurt and came home crying and my parents asked me what the matter was. When I told them what had happened and then was found pregnant, they called the man for a discussion with some older relatives. It happened that he was already married but he explained to my parents that he was prepared to marry me and in answer to their questions said that his wife would not prevent **him**.<sup>10</sup> So he paid a fine to my parents, rented a room for me and I had four children with him. During these years he helped me financially and even brought me clothes as presents. However, I came to learn that **all** this time he had not told his wife about me, and when his wife found out, she was furious. She came to visit me and threatened that unless I left her husband she would resort to punishments only known to herself. Finally she said that unless I gave him up she would come and slaughter the children with apanga (nitawafyeka watoto wako). As I do not like quarrelling I thought that this was enough and decided to leave the man. I was also very scared. When the man heard this, his response was to say, Very well then, you can keep the children, that's my present to you (zawadi yako)! Ever since he has not contributed anything to help me with the children and I returned to my parents who understood why I was so scared.

Since then, H had four more children, each of them by a different father.

If you tell a man that you have become pregnant, he simply says that the child is not his but must be by somebody else. Then what can you do? My second last child died of measles when he was about three years old, and the father did not even bother to come and see him in the hospital, not even when I sent word to ask him to bring some bottles of water for the child who was dehydrated.

She told me that she had never planned not to get married, but her complaint, like that of so many others, was 'I have just given up hope. Where are the good men? I just **can't** see them anywhere.' When asked on another occasion what she would enjoy most in life, she answered:

Happiness in this world? Isn't it when there are two of you in the house? (Rha duniani, si mko wawili ndani ya nyumba?). If a child gets sick, one can take it to the hospital while the other one takes care of the others. Now I am the father and the mother at the same time; if I am sick the whole family is sick.

Another problem facing single mothers and their children was pointed out by a male rural medical aide, **working** in one of the villages in the District. He attributed the large number of malnourished children in **Man-yoni** partly to the fact that single mothers could no longer stick to the traditional rhythm of childspacing. According to this custom, mothers used to abstain from sexual intercourse for a period of about two years, during the time they breast-fed their children. Nowadays, single mothers, usually young girls who get pregnant and have to take care of their children on their own, often have to resort to sexual relations even while they are still breast-feeding, in order to get some money. If they then get pregnant again, the space between children is shortened as well as the breast-feeding of the previous child, and the mother finds herself in increased difficulties, as she soon has to take care of two children instead of just one. A vicious circle thus sets in. Related to this is what one of the women told me:

I had to learn the old custom by hard experience. I was still very young after my first child. I had started to give her some mixed food in addition to the breast. This made my *bwana* think that I was not breast-feeding any longer, and he would not accept my refusals to sleep with him on the grounds that I was still breast-feeding the child. I then got pregnant and got my second child when the first one was barely a year old. This taught me to be more careful, because I was so exhausted then.

Now, at the age of **32** and with eight children, she was tired of having children. Nevertheless, even at this time she did not use contraceptives and was relying on chance to avoid pregnancies.

## SOCIAL RELATIONS IN THE CO-OPERATIVE

One might conclude from the evidence that membership in the Chama co-operative was necessary for cash as well as for mutual support in dealing with various problems. Being a member or working in the hotel also gave one the opportunity for friendships which arose while working together. One of the widows, who had recently had all her property stolen while she was brewing beer in the club, was pining for her best female friend whom she had got to know while **working** in the hotel, but who had moved to Mwanza:

If only she was here, I would not have a problem because she would have already given me some of her clothes. As it is now, I only have those clothes left which I had on when the robbery took place.



The hours spent at work also mean an opportunity to exchange news and comments about recent happenings. For instance, during the period of the research, comments were made about someone's young relative who was being forced to marry because the fathers of the couple had arranged the payment of bridewealth. When asked what the girl thought of it, the comment was, "What could she possibly say when her father is happily building a house with that money?". The relative who was working in the Mapinduzi Hotel said that she would not be going to help in the wedding arrangements, because she did not consider this a proper marriage – "The youngsters do not even know each other, nor has she been made pregnant. So why should they marry?"

Situations like this can be seen as part of the increasingly difficult living conditions whose effects hit the poor women hardest. The phenomenon that "nobody wants to marry these days" may be taken as part of the economic constraints that make it difficult for men and women to support their families in the way they would want to. For the casual labourers in Manyoni who were taking care of their children on their own, the most meagre earnings were absolutely vital although not enough for subsistence. It would need another study to find out more about how they were able to survive.

## COMPETITION

If life at the Mapinduzi Hotel which had been so busy in 1981 had quietened down by 1983, the opposite was true for the neighbouring tea-shops and the restaurant next-door. In 1983, when the Mapinduzi Hotel was not even able to sell plain tea, a neighbouring enterprise was selling tea with milk sweetened with molasses, and was able to serve even *mandazi* and chapati, despite all the shortages. In previous years, the private hotels had made several efforts to attract buses and passengers to their hotels and bars. They finally succeeded when the economic crisis and the lack of commodities hit Manyoni. The private shopkeepers who had their own transport could easily fetch articles from far away, while the women's co-operative had to apply for transport from the government authorities which was always delayed.

For the *Chama*, a registered co-operative society, the purchase of food items had become increasingly difficult as it had to follow certain regulations and was not free to buy from private shopkeepers. In order to purchase a large amount of grain from the surrounding countryside, permission had to be applied for, because the peasants are obliged to market their produce through the National Milling Corporation. The maize which the women buy from some nearby villages is then bartered against rice in a

rice-growing area, so that one sack of maize becomes the equivalent of one sack of paddy. In 1982, the women had bought 70 sacks of paddy which only took them to the end of June, and they were in the process of applying for permission to buy some more, a procedure which sometimes slowed things down. During the period when the rice at the Mapinduzi Hotel was nearly finished, the amount cooked daily was about 2 kg while the next-door hotel, frequented by the Manyoni local elite, was preparing about 6 kg of rice daily. In the words of one of the owners of this "competing" enterprise:

The problem with the Mapinduzi women is that they consider the black-market prices high and will not buy, for instance, rice at Tsh 20 a kg, when the official price is less. As for me, I do not sneer at the price. When I can get the thing, I buy if it is available. This is what these people do not understand. Another problem for them is that they do not understand how to measure their portions but just dish out any amount. I measure everything exactly.

It is hardly necessary to mention that she also "understood" how to sell the surplus rice at Tsh 25 a kg.

The neighbouring hotel was indeed doing well. The daily amount of food prepared required 6 kg of rice, 5 kg of meat, 10 bundles of spinach and three bottles of oil while the monthly consumption of maize meal was three tins. The owner said that she could have about 80 customers a day and was able to earn about Tsh 2000-3000 daily from the food. The hotel offered a breakfast including thin porridge, *uji*, tea with milk and sugar, an omelette with boiled spaghetti, or bread with margarine and jam for the price of Tsh 20, while the lunch and dinner, named *Chikola Special* after the nearby state ranch, would include rice, chips, a banana, spinach and plenty of meat with sauce. While *Chikola Special* cost Tsh 40, almost the weekly earnings of a wage labourer at Mapinduzi Hotel, a plateful of *pilau* at Mapinduzi would cost Tsh 25. The neighbouring hotel enjoyed the reputation of being a high-class eating place, where government and party leaders would take their guests and businessmen and other well-to-do travellers would come, but the Mapinduzi was considered to be dirty by the salaried class, who did not find it attractive with its plain tables without table-cloths. This reputation was not improved by the fact that, during the cholera epidemic, the Mapinduzi Hotel had to be closed down and some people said that this damaged its image and business even further. It did not help that this closure was said to have political undertones because some other places, which according to the women at the Mapinduzi were no cleaner, had not been closed.

## CONCLUSION

The history of the *Chama* in Manyoni has been a traumatic one and its development has implications for the wider kinds of struggles that are taking place in Tanzania. One of the strengths of the project was the very ability of the women involved to persist in their efforts and to stay together for as long as they have. This is all the more amazing, given the declining material benefits the women have been able to get in recent years. Thus the very persistence of the activities would seem to indicate that there were other benefits to be gained for the women, such as mutual support at political, emotional and material levels which are not measured in terms of dividends. However, the polarisation process which was also documented indicated that the mutual support was not necessarily within the totality of the co-operative but within its different factions. The question also arises as to whether the fact that women need mutual support and an opportunity to learn and work together justifies such small benefits from the large amount of time and labour which they invest. There is also the question as to whether co-operatives for women have to be organisations of voluntary labour in order to keep the co-operatives themselves alive? Does the fact that the poorest women need any little cash they can get justify the fact that the remuneration for their labour should be so small and that they should work under such hard conditions? How could the frustrations and the difficulties the women faced in their co-operative be avoided? What were the factors that hindered them from benefitting more?

The study would indicate that the questions were not about the viability of the project as an economic enterprise as such, given the increasing importance of the servicing sector as an employer and comparing the case with other similar experiences in Tanzania." One of the encouraging things that emerged from the study was the fact that the activities of the *Chama*, which were started with such a small amount of local capital, expanded to quite commendable proportions at their peak. The case also showed that those factors that led to the decline of the co-operative were largely beyond the control of the co-operative and its members. The economic crisis which broke down the transport communications and the availability of goods, hit at the roots of the ability of the *Chama* to function. Thus the crisis of the enterprise which was so obvious in 1983 indicated the vulnerability of co-operatives like these to the effects of the economic crisis. The study also indicated that the crisis situation allows for unequal development, as it gives scope for activities linked with black-market operations at the same time as it squeezes those trying to work within the legal framework. The internal struggles within the co-operative *Chama* not only linked up with local

struggles in Manyoni but also with wider forces at the national and international level. In the case of the *Chama* in Manyoni it is the casual labourers who bear the brunt. The question is: who benefits?

## NOTES

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# 14. A Resource Overlooked – Crafts and Small-Scale Industries

*Kjell J. Havnevik*

This chapter\* attempts to analyse the development of crafts and small-scale industries in Tanzania, with particular emphasis on the crisis period from around 1978 onwards. It aims at identifying major lines of production and growth trends and to assess the significance of the sector in national development. The relations of crafts and small industries with other sectors of the economy, in particular with agriculture, will be examined and also the response of the sector to the ensuing economic crisis. However, before going into the main discussion there is a need to sketch the changing political and institutional context of crafts and small-scale industries, as this may indicate the constraints and prospects which came to face the sector. In addition, some clarification of definitional issues is required.

## RECENT CHANGES IN THE POLITICAL AND INSTITUTIONAL CONTEXT

The Arusha Declaration of 1967 signalled a shift in Tanzania's development strategy in the direction of socialism and self-reliance. Emphasis was placed on the domestic mobilisation of resources and people by means of a reorganisation of the rural areas into concentrated settlements and increased state control through nationalisation of industry, trade, insurance and banking activities. Village resettlement campaigns were intensified and by 1976 more than 8,000 registered villages were reported to exist.

Promotion of crafts and small-scale industries in the rural areas constituted an important element of the new development strategy. In order to strengthen these production activities, District Development Corporations were created from 1969 onwards. The Small Industries Development Organisation (SIDO) was set up by an Act of Parliament in December 1973 and given the role of promoting and co-ordinating national efforts, with special emphasis on the rural areas.<sup>1</sup> SIDO took over some of the functions of the defunct National Small Industrial Corporation (NSIC), a subsidiary of the National Development Corporation (NDC). SIDO was established as a parastatal organisation under the Ministry of Industry. As this Ministry had no regional network to rely upon, SIDO was faced with the task of develop-

ing one of its own. The issue of co-ordination of activities with regional planning authorities remained unsolved.

During the 1970s organisational changes related to agricultural production and marketing were also instituted by the government and reflected the desire for increased state control. In the early years of the decade the government established crop authorities, normally one for each agricultural cash crop. With the abolition of the Co-operative Unions in 1976, the respective crop authorities were granted the monopoly in purchasing, processing and marketing of the crops. Agricultural producer prices were fixed centrally by the Ministry of Agriculture according to the principle that the crop authorities were to recover their operating costs.<sup>2</sup> Consequently, agricultural producer prices became merely residual. The growing inefficiency of the crop authorities and the overvaluation of the Tanzanian Shilling exerted a strong downward pressure on the share of producer prices in the final selling price. From 1970 to 1980, the share dropped from 66% to 41%.<sup>3</sup> The implications of this development for rural incomes and the demand for non-agricultural products should be obvious.

When the Co-operative Unions were discontinued in 1976, much of their industrially related activities was transferred to the District Development Corporations (DDCs). But the latter proved to be financially and managerially weak, which came to limit their role as a force in the development of small industries in the rural areas. *The Villages and Ujamaa Villages Act* of 1975 formally dissolved the autonomous industrial co-operatives, implying that they should perform their functions as if the village were a multi-purpose co-operative society. This meant that village governments should own and exert control over industrial undertakings in the villages.

In 1983, however, after several years of deepening economic crisis, the Co-operative Unions were restored, a move clearly connected with the dismal performance of the crop authorities. However, the Unions' functions are limited to dealing with the producers as middlemen, while "the Crop Authorities remain with the functions of purchasing crops from the Unions and the export of these crops abroad."<sup>4</sup> How this co-operation will work out in practice and what it will imply for the restoration of peasant control of, and efficiency in, marketing operations remains to be seen. This change does not, however, open up the possibility of small-scale industries purchasing agricultural inputs for processing directly from the growers or the Unions.

## DEFINITIONS: CRAFTS, COTTAGE INDUSTRIES AND SMALL-SCALE MANUFACTURING

In Tanzania small-scale industries have been defined in different ways. The National Executive Committee of TANU (Tanganyika African National Union) formulated the official definition, "small-scale industry is any unit whose control is within the capability of the people, either individually or co-operatively, in terms of capital required or know-how, it includes **handicrafts** or any organized activity based on the division of **labour**."<sup>5</sup> According to SIDO, the definition deliberately avoided the use of internationally recognised quantitative criteria in order to be flexible and serve as a guideline for **action**.<sup>6</sup>

However, for support activities, credit agencies and statistical purposes, a definition of this character cannot serve as a guideline. Consequently, institutions like the Bank of Tanzania, the planning authorities and SIDO designed definitions corresponding to their own objectives. These definitions do not, however, grasp the whole range of activities related to the small industrial sector, nor do they relate to differences in the levels of technology. The major demarcations made are in terms of level of investment and number of employees. The result has been confusion as to what the concept of small-scale industries entails.

The present analysis will embrace the whole sector, including crafts. Hence a definition is required which is operational for understanding the central characteristics of sub-sectors and their interconnections. Such a definition must relate both to scale, organisation and the level of technology, but with the latter as the main criterion for demarcation between sub-sectors. These requirements lead to the identification of three sub-sectors.

**Craft** production is the production of commodities for direct use by the producers or for sale mainly through local markets or on order. This sub-sector also includes artisanal or handicraft production which is mainly geared to urban and external markets. The craftsman or woman produces alone or is assisted by family members or apprentices. The division of labour is limited, even if the production units have several members. Production in rural areas, in particular, is seasonal in character, the main occupation of the producers being agricultural cultivation. Hence, analysis of labour time allocations and constraints related to craft production in rural areas must be based on a thorough understanding of the supply and demand of labour related to agricultural activities.

A large part of craft production, even that undertaken in urban areas, takes place in the so-called informal sector. Production units are not registered by government agencies and they may accordingly avoid taxation

of their sales. The type of craft production taken up may vary from area to area depending on the available resources, skills, needs and demand; for instance, basket-making in Iringa, pottery production in Same and blacksmith activities on the Ufipa Plateau.

*Cottage industries* entail important differences from craft production such as some degree of division of labour and specialisation, but most importantly the use of simple machinery. Cottage industries thus defined may be found both in rural and urban areas. Members of rural units or their households still devote some labour time to agricultural activities. The level of investment is such that cottage industries need not necessarily produce continuously throughout the year.

Cottage industries have a more formal organisation than crafts units. They may be owned by private persons, or organised as partnerships or industrial co-operatives. Their size often requires buildings for machinery, raw materials and finished goods, like carpentry-, hand-loom weaving and engineering units. This makes them visible; hence they are often registered and become liable to government taxation.

*Small-scale manufacturing* represents a state of production and organisation with an extensive division of labour and specialisation. Many units of this character even use relatively advanced technology, the labour force is skilled, and production is destined for regional, national and in some cases international markets. The level of sophistication of technology implies for some units a relatively strong reliance on imports, both in terms of machinery, spares and raw materials and training activities.

By defining the sub-categories according to the above characteristics, it appears that different sub-sectors face different problems and challenges. The unequal operating conditions consequently require that support activities must vary in design in order to be relevant. They need to be differentiated according to both the **urban/rural** and the **technical/organisational** dimensions. This poses a great challenge to promotional agencies.

The above discussion of definitional issues also provides a basis for approaching the term *rural industrialisation*, which is often mentioned in official Tanzanian documents but rarely defined. In many instances there seems to be a notion that the term is linked with some sort of technological revolution in the rural areas, however vaguely specified. In my opinion rural industrialisation may be defined as the improvement of the productive forces and organisation of crafts and industrially related production in rural areas. There are, in principle, two ways to achieve this. The first is through the introduction of improved tools, machinery and increased specialisation and division of labour in craft production in rural areas, i.e. a development in the direction of, or even beyond, the mode of cottage production. Another option apparently adopted by SIDO is the "trickle down"



approach or dispersal of small-scale manufacturing units from urban areas and industrial estates to locations in rural areas. One aim of the present chapter is to assess the potential related to these two options.

## GROWTH TRENDS OF THE CRAFTS AND SMALL INDUSTRIES SECTOR

Growth trends of the crafts and small industries sector at the national level are given in official publications from the Bureau of Statistics and in surveys undertaken by SIDO. However, statistical information is particularly scarce after 1978 and I shall therefore divide the analysis into the period prior to and after 1978.

However, this exercise encounters both statistical and definitional problems. Both national statistics and SIDO define small-scale industries in terms of employment. SIDO defines a small industry as one employing 50 workers or less. In addition, SIDO distinguishes between non-factory type units employing 9 or less workers and factory type units employing 10 to 50 workers. The Bureau of Statistics provides Industrial Census data for the size category 5 to 49 workers, which fall within the range of the SIDO definitions.

### *Growth trends prior to 1978*

From SIDO two sources are available, *The 1975 Census of Small Industries* and *The 1977/78 Small-Scale Industry Census*.<sup>7</sup> There is no written account of the methodology used in the 1975 Census, nor have the results been published. The 1977/78 Census was published in 1980 after a long process of correction and cross-checking because of a wide range of problems encountered in the original census work.<sup>8</sup> After receiving the primary census data from SIDO regional offices, an additional "sample study", the method of which is not explained, was carried out on the basis of those data. The estimates for number of units existing, employment etc., were found to be highly deficient; "It is was therefore deemed necessary to involve the regional staff once again to cross-check the data and send back the correct information on the units reported in their questionnaires. This latter exercise was ready only after June 1979." The differences between the "sampled" and "cross-checked" figures are striking: the number of units was reduced by 27% (from 5,450 to 3,978), the number of persons employed was increased by 7.5% (from 48,660 to 52,284), fixed capital assets were increased by 6%, gross output was raised by 21%, and operating costs were adjusted upwards by 9%.<sup>9</sup>

Against the background of the substantial reduction in the number of units, these increases in employment, gross output etc. are difficult to understand. In particular, it seems highly unlikely that there could have been only about 4,000 crafts and small-scale units in Tanzania in 1978. Several crafts and handicraft surveys from various regions and districts clearly illustrate this point.<sup>10</sup> Moreover, the average number of 13.1 employed workers per unit shows that many or most of the smaller units (less than five workers) must have been excluded from SIDO's 1977/1978 national census. It is therefore evident that this census does not provide a proper base-line for assessing the development of crafts and small industries in the course of the economic crisis unfolding after 1978.

The trend depicted in SIDO's 1975 and 1977/1978 censuses indicates that the number of small industries increased by 128% during that period, implying an average annual growth of 31.7%. The growth of employment in the same period was 143%, or 34.4% annually. The gross output of small industries at constant prices, i.e. in volume terms, grew at 37.4% per year in the period. Analysing more closely the regional trends, the figures turn out to be highly remarkable. For some regions the number of units increase dramatically while the number of people employed is reduced (Kilimanjaro and Rukwa); for others there is a considerable decline in the number of units as well as employment (Mara, Kagera and Lindi); and a third group with Dar es Salaam Region as the most prominent shows an extremely high growth on all counts.

If the discrepancies in growth rates between regions were correct, one would expect a dramatic inter-regional imbalance in the growth of crafts and small-scale industries in the short period from 1975 to 1978. The findings stand in sharp contrast to the recorded overall decline of gross output per worker in manufacturing industry with 10 or more workers, of 5.2% from 1974 to 1978.<sup>11</sup> Most probably uneven coverage both between regions and compared with the 1975 SIDO census accounts for the peculiar statistical results obtained.

In addition to the SIDO censuses, there is *The 1978 Industrial Census* carried out by the Bureau of Statistics.<sup>12</sup> This does not, however, cover establishments with less than 5 persons engaged. Furthermore, the figures in the Industrial Census are not compatible with corresponding figures in the Bureau's *Surveys of Industrial Production*,<sup>13</sup> because the census, in contrast to the surveys, also covers informal sector establishments. And the *Surveys of Industrial Production* cover only formal sector establishments with 10 or more persons employed.

From the Bureau of Statistics figures it can be seen, however, that from 1972 to 1978, employment in formal sector manufacturing industry as a whole (10+ establishments) increased on average by almost 10% per year. On the other hand, by assuming that all informal sector 10+ units counted

in the 1978 Census belonged to the 10–49 size class, it can be estimated that employment in formal sector establishments with 10 to 49 persons engaged increased by less than 2% per year.<sup>14</sup> Hence, there is some basis for concluding that small-scale industries with 10 to 49 persons engaged reduced their share in total manufacturing formal sector employment (10+ units) from 1972 to 1978.

According to the Bureau of Statistics figures there does not appear to have been any substantial regional redistribution of small-scale industries, possibly apart from some decline in the relative shares of the Dar es Salaam, Arusha, Morogoro and Tanga Regions. However, it must be added that SIDO and the Bureau of Statistics are quite contradictory on this point.

Regarding the sectoral distribution of small-scale industries, the sector "Wood products, furniture and fixtures" appears to be by far the most important, followed by "Metal products", "Food products" and "Textiles and clothing". The sector "Metal products" plays an equally important role with respect to employment and value added in the small-scale sector as in manufacturing as a whole.

#### *Post-1978 growth trends*

For identifying growth trends within manufacturing industry after 1978 there are only two statistical sources, namely a *Survey of small-scale industries* carried out by SIDO in 1980/81 and the *Annual Surveys of Industrial Production* (with summaries in the *Economic Survey*).

The SIDO 1980/81 Survey is unlikely to be published, according to SIDO sources, because of the poor quality of the data. Its results have, however, been accessible to, and utilised by, the ILO team investigating social and economic developments in Tanzania in 1981.<sup>15</sup> ILO has accepted these data at their face value, showing that between 1977/78 and 1980/81 the number of units increased by 7.1%, employment increased by 9.5%, value added at constant prices (1966) increased by 9%, while value added per worker declined by 0.5%.

The Bureau of Statistics figures show that, during the period 1978–81, the manufacturing sector as a whole (10+ units) experienced a severe depression. The average annual growth rate for number of establishments increased by 1.2%, and the number of employees by 4%, while value added at constant (1966) prices declined by 8.1% and that per employee went down by 11.6%. From 1981 to 1982 further drastic declines occur for value added and employment – 27.9% and 24.1% respectively.<sup>16</sup>

The Bureau of Statistics further assumes that units with less than 10 persons employed suffered a decline of the same magnitude as units with more than 10 employees. Such a uniform rate of decline may, however, be questioned particularly among small industrial units which do not rely much

on externally produced spare parts and raw materials in production. An important issue will be to assess the importance of such a category of small industries and to investigate the character of local spontaneous responses. Are these of such a magnitude that the negative impact via balance of payments and supply problems is not significantly felt?

*The 1978 Industrial Census* carried out by the Bureau of Statistics seems to be the last major effort at providing a nation-wide picture of the small industries sector. Data from this census show that, in 1978, establishments with 5 to 9 workers accounted for 3.8% of total manufacturing employment, while units with 10 to 49 workers accounted for 17.7%. This means that the sector, excluding units with less than 5 workers, accounted for 21.5% of total manufacturing employment in 1978. Thus, according to the Bureau, more than one-fifth of the total Tanzanian industrial workforce was engaged in the small-scale industrial sector. This indicates the relative importance of the sector in the Tanzanian economy with respect to employment opportunities.

## CRAFT PRODUCTION

Various surveys undertaken during the last decade document that the number of craftsmen and craftswomen in Tanzania, working mainly seasonally, is very high in relation to the total work force." A SIDO survey of 1977 showed that there were 34,000 artisans in Tanzania, the major production lines being cane, bamboo and fibre, pottery and ceramics, wood and wood carvings and textile based handicrafts.<sup>18</sup> Surveys of crafts, including artisans, in the late 1970s showed that 20% of the workforce in Rukwa Region<sup>19</sup> and 60% in Rufiji District, Coast Region<sup>20</sup> participated mainly on a seasonal basis. Carpentry, textiles and metal-based activities seem to be the most common.

The main function of craft production is to complement agriculture in the dry season in order to generate additional cash incomes to purchase food and basic commodities and to produce use values directly for the household. It is important for analysis and planning to take account of the fact that the craft producers, men and women, are primarily agriculturalist. The pattern of economic activities, particularly in the rural areas, and macro-economic policies set limits for the labour time available and the market prospects for craft production. This affects the level of investment and technological development, which tend to remain modest and hence perpetuate the low level of labour productivity in such production.

Calculation of the hourly return to labour for 20 crafts in Rufiji District (1979) discloses the complementary character and the low productivity level of crafts. In four crafts studied, mat making, basketry, wooden bed

and mortar making, the hourly return to labour was below Tsh 1, on average Tsh 0.50, which would add up to a potential monthly income to the producer of about Tsh 100 (with continuous production throughout the month). The rural minimum wage at this time was Tsh 280 a month and the urban Tsh 380. It is interesting to note that almost 60% of the total district production, and about 80 % of that executed by female craft producers, belonged to this category (mat making and basketry). Seven crafts fell in the hourly labour return category Tsh 1-2, including carpentry, masonry, pottery, shoe repair; seven in the category Tsh 2-3, consisting of blacksmiths, carving, tailoring, bicycle repair, for instance; and two generated an hourly return of more than Tsh 3 per hour, **jaggery** production and watch repair.<sup>21</sup>

A characteristic feature of the rural economy is the fact that the potential incomes cannot be realised even if labour constraints do not affect the producers, and the bulk of the producers belong to the lowest hourly income category. This implies that the general deficiency of demand represents a major obstacle to the expansion of craft production. The picture may certainly vary from one ecological area to another in terms of what production activities are undertaken and the labour returns as well. The area referred to here, **Rufiji** District, has a rather good and varied raw material position (forests, fishing and agriculture) as well as easy access to the Dares Salaam markets (only about 150–200 km on mainly all-weather roads). Consequently, the area has a relatively good basis for craft production.

An interesting feature observed in rural areas in this period of decreasing real agricultural producer prices and agricultural stagnation has been an increase in the labour channelled to non-agricultural production activities, crafts, but in particular to forest exploitation and fishing. The withdrawal of peasant labour from agricultural production, in particular export crops, should accordingly not be mistaken for a withdrawal from market relations altogether, but rather a reallocation of labour time to production and markets outside government control which more easily generate ready cash incomes. One effect has been a strengthening of the local production/consumption circuits. In response to the lack of supply of basic commodities from national industries, an increasing share of available demand has been directed to local repair and production activities, for instance clothes, local sugar and salt production, edible oils from agricultural crops like groundnuts, sunflower or coconuts, and farm implements like hoes and spare parts for ploughs, but most importantly repair of these implements. It should be noted that the increase in linkages between the agricultural sector and crafts processing because of the crisis has been contrary to official regulations. These have given monopoly purchasing rights for the above agricultural crops to the national crop authorities, in particular the General Agricultural Product Export Company (**GAPEX**). A major reason for the weak linkages between the agricultural sector and crafts and small industries processing

stems from these monopoly purchasing rights of the crop authorities. The Ministry of Industries and Trade has gradually become aware of the damaging effects of this for crafts and small industries development and has recently (1985) taken an initiative which should allow the direct sale of crops from peasants to small-scale processing units."

In spite of the emergence of incentives for increased local production because of the intensification of the economic crisis, there seems to be a limit to the growth of such craft production. Many crafts depend upon the supply of inputs from imports or from national industries (textiles, i.e. thread and cloth, metals, spare parts, such as for watches, sewing machines etc, and for tools). Innovative features have to some extent compensated for this. Blacksmiths have, for instance, intensified their search for scrap iron from broken-down cars or agricultural machines. The growth of the number of iron foundries and resmelting plants has increased competition for such scrap iron. A general tendency towards intensification of the use of scrap or other second hand material, such as for paper, rubber products and farm implements, and of local inputs, like dyes for textile colouring and local oil in small-scale soap production, can be observed **however**.<sup>23</sup> Such spontaneous innovation in response to the crisis seems to have increased in strength, in spite of the existing obstacles. An important issue for national institutions and the government at present is to acknowledge this and to give priority to finding out how this process can best be supported and sustained.<sup>24</sup>

Government assistance and foreign aid to crafts production have been directed through various channels: SIDO and its subsidiaries; other government bodies, international institutions, projects within regional integrated rural development plans, voluntary organisations and church groups, such as the Kilimanjaro Industrial Development Centre (KIDC), the Small Industries Promotion Unit in Tanga Region, the Jipemoyo project, the Christian Council, the Community Development Trust Fund, OXFAM, the Arusha Appropriate Technology Project (AATP), the Canadian University Services Overseas (CUSO). Major donors to crafts through SIDO have been the Swedish International Development Authority (SIDA) and the Canadian International Development Agency (CIDA).

In general, assistance to rural crafts has had a lot of verbal support. The actual assistance forthcoming has, however, been meagre. Support through SIDO and its subsidiaries has been limited and has had varying effects. One major reason for this has been the lack of systematic effort by SIDO and its own regional offices to focus on crafts. They have primarily been providing support and extension services to manufacturing production in the urban areas. HANDICO, the Tanzania Handicraft Company, has been purchasing handicrafts from artisans, but limited funds and weak organisation have given it a marginal role in relation to artisanal production. The Arusha

Appropriate Technology Project (AATP) which existed from 1977 to 1981 and then merged into the Centre for Agricultural Mechanisation and Rural Technology (CAMARTEC) is probably the SIDO subsidiary project which has had the best understanding of the limits and possibilities for rural craft support, alongside some of the voluntary organisations and the Jipe-moyo project. The newly established CAMARTEC has already gone too far in the direction of the production and marketing of already known technologies. This indicates a lack of innovative foresight and represents a deviation from the core functions of testing, extension and training activities which could provide the necessary basis for the development of simple and cheap technologies. These are necessary in order to assist the spontaneous innovations already embarked upon by the peasants and craft producers in the rural areas.<sup>25</sup>

The aid agencies supporting crafts through SIDO have had little to offer in terms of both expertise and inputs. This has been due both to a lack of understanding of the characteristics of the sub-sector and to the limited range of products which could be offered by the donor countries' own industries. The deficiencies in their approach have become increasingly apparent with the increased tying of aid due to the industrial crisis in the donor countries themselves. Coupled with SIDO's negligence and lack of overall national co-ordination of crafts support, it can safely be concluded that the national set-up for support to craft production and most of the external official assistance have had a marginal impact, if any at all.

The conditions for craft production in Tanzania have been further undermined by macroeconomic policies related to marketing arrangements, and producer price policies for agricultural crops. The purchasing monopoly of the crop authorities has effectively obstructed the emergence of a decentralised small-scale processing industry with relatively low demands on transport, because of its proximity to raw materials and markets. The policy pursued on agricultural producer prices has had the effect of depressing incomes in the rural areas, which concomitantly has negatively affected demand for local crafts and industrial production.

## COTTAGE INDUSTRIES

Cottage industries represent an important link in the process of rural industrialisation. The challenge to entrepreneurs and support organisations is to provide a more stable basis for cottage industries in the rural areas. Cottage industries are technologically more advanced than crafts, but, on the other hand, they require a more stable regime of input supply and production. Cottage industries appear more like specialised production units and the employees depend less on agricultural cultivation than do craft

producers. The availability of marketed foodstuffs is, however, still so unreliable that many employees in cottage industries retain some link with agriculture, mainly through their households.

Cottage industries' need for premises to store inputs and finished products and their use of machinery make them visible and thus liable to be registered by the government. Such registration takes the form of industrial certificates or industrial licences depending on the size of the production unit.<sup>26</sup> Registration implies that cottage industries will be within easy reach of government taxation. Taxes are levied both on imported and locally produced goods, with rates from **25%** to **200%**. Most items of relevance to cottage industries fall within the range of **25%** to **50%**. There is, however, no differentiation in taxation in terms of the size of the unit, so that cottage and small scale industries will be taxed in line with similar produce from large scale production units. Exemption from taxation for cottage industries located in villages is not automatic, as indicated by SIDO, but units have to apply to the Ministry of Finance and Planning for such exemption. For all practical purposes, the system of exemption for village and rural industries is not **functioning**.<sup>27</sup>

The *Finance Act of 1976* clearly states that no tax is to be levied on inputs to be used in processing. But cases of double taxation, taxes on inputs and outputs occur quite **often**.<sup>28</sup> Cumbersome routines for repayment mean that producers quite often are not refunded. Many cottage industries are financially so weak that even ordinary taxes pose serious problems for them. The Small Industries Promotion Unit (SIPU) under the Tanga Integrated Regional Development Plan (TIRDEP) has actually recommended cottage industries to "go informal" to avoid taxation in order to survive. However, as sales taxes are the most important tax revenue of the government, the pressure to keep revenues flowing from industrially related production is likely to remain strong.

Many cottage industries in Tanzania are organised as co-operatives. A survey of **88** co-operatives in **1980** indicated that this type of production unit is faced with serious problems; **84%** of these units stated that their major problem was finance, **73%** that it was raw material supply, **43%** that their major problem was linked to production and machinery and **32%** that it was related to **marketing**.<sup>29</sup> This indicates that the operation of cottage industries requires infrastructural facilities and inputs from other institutions, like banks, training institutions, suppliers, imports, etc. which make them vulnerable to changes in their environment.

A major problem faced by autonomous industrial co-operatives is that they are not given recognition and support by the government. As mentioned above, the industrial co-operatives were dissolved under the *Villages and Ujamaa Villages Act of 1975* which stated that villages should function



as if they were multi-purpose co-operative societies. This act formalised the Small Industry Directive of the National Executive Committee of the Party (then TANU), which had underlined that there should be no place for individual ownership of small industrial units in the villages. Such units were to remain the property of the villages or alternatively they could be owned jointly by villages and District Development Corporations or a co-operative union. However, as the co-operative unions were disbanded in 1976, the responsibility for industrial activities in the villages came to rest solely with the two former bodies.

Several investigations indicate that the establishment of industrial co-operatives within this formal setting was primarily motivated by the expectation of government assistance." Political pressure and influence was often decisive elements in the establishment and operation of co-operatives. The role of technical and competent managerial personnel was diminished. Problems were further exacerbated by the existing legal framework, in particular the nature of the by-laws governing industrial co-operatives.

In March 1983 the *Co-operative Societies Act of 1982* became operational. This act made no general provision for primary societies other than those to be formed at the village level. The objective of secondary societies (at the regional and district level) was to facilitate the operation of primary societies. However, none of the functions of these societies deal with industrial matters in particular. Industrial co-operatives are directed to conform to the general set-up and not to press for an autonomous co-operative union. To accommodate small-scale co-operative units, the Co-operative Union of Tanzania has established an Industrial Co-operative Department, which is extremely weak in respect of resources and personnel, and whose functions are no different from those of SIDO. According to entrepreneurs and industrial co-operatives, an autonomous industrial co-operative union is essential for the growth of co-operative cottage industries. This has also been acknowledged by SIDO, which has supported the initiative and solicited assistance from UNIDO to prepare the ground for such a union.<sup>31</sup>

Major support for cottage industries has come through the regional integrated rural development plans. In many regions these plans have included an element of support for non-urban-based industrial activities. The most successful of these seems to be the Small Industries Promotion Unit in Tanga Region where West German assistance and personnel have focused on assistance to cottage industries in district towns (the main focal point is Korogwe town). After considerable investigation a strategy for support was designed which was relevant to the conditions and limitations in the area. It is interesting to note that SIDO did not want to co-operate

with this initiative, but instead gave priority to the establishment of an industrial estate in Tanga town for which the World Bank provided assistance.

In Arusha Region an industrial extension project was included in the USAID supported regional integrated rural development plan. In this case SIDO co-operated closely with the regional community development department in surveying the conditions and designing action for support to cottage industries in rural areas as well as back-up support from urban-based small industries (like the Themis farm implements factory in Arusha). This programme has almost come to a standstill, however, due to the withdrawal of American assistance to Tanzania as a result of the Reagan administration's policies. These examples further illustrate that SIDO has had neither a leading hand nor clear policies when it comes to the co-ordination of small industrial sector support. One effect of this has been to weaken the basis for rural industrialisation, which is a major objective of national development in Tanzania.

Due to their utilisation of simple machinery, most of which is imported, cottage industries have been affected by the balance of payment problems. However, there is a clear trend towards local manufacturing of simple machinery, in particular milling machines for agricultural processing. Small engineering workshops both inside and outside industrial estates as well as foundries are also producing more spare parts locally for simple machinery. This tendency has emerged as a response to the non-availability of imports. Though they are constrained by their indirect reliance on imports, it is extremely important to turn such spontaneous responses into long-term technological gains.

## SMALL-SCALE MANUFACTURING INDUSTRIES

Small-scale industries in Tanzania have to most government and aid institutions been synonymous with small-scale manufacturing industries. This is indicated in the available statistics by the emphasis on units with more than five employees, as explained in an earlier section of this chapter, and by the focus of government and external assistance.

Important components of small-scale manufacturing industries in Tanzania have been connected with industrial estates and programmes of technology transfer. Given the limited resources, SIDO's idea has been that pooling of infrastructural resources by means of industrial estates is the only viable way to create an industrial milieu with a capacity to generate its own technological momentum. In its early years, SIDO diverted an increasing amount of its resources to constructing industrial estates in urban areas

throughout Tanzania. The objective was to have one in each of the 20 regions by the end of 1981.

By the end of 1985 industrial estates had been established in 16 regions with a total of 154 factory sheds. In 90 sheds (58%) industrial units were in operation, in 14 sheds (9%) machinery was installed but the units were not **working**, in about 20 sheds machinery had not yet been installed but funds and entrepreneurs were available, and 30 sheds were empty with no funds available for the purchase of machinery. The most active estates were those assisted by Sweden (Arusha, Moshi and Mbeya) and Holland (Dar es Salaam and Songea). **SIDO's** philosophy has been that each estate should have its own Common Facility Workshop (**CFW**) and foundry. This would provide an important back-up for the industrial units as well as representing a source of industrial services for non-estate units. **SIDO** has further stated that the estate concept should be used as a tool for the development of district centres and towards rural **industrialisation**.<sup>32</sup>

Two major technology transfer programmes are connected with the industrial estates, the Sister Industry Programme (SIP) supported by Sweden and the Indo-Tanzanian Programme assisted by India. However, the majority of small industrial manufacturing units exist outside these industrial estates and are not reached by any government or external assistance. Consequently, it will be of interest to compare the processes of change **taking** place in the different categories of small-scale manufacturing.

### *The Sister Industry Programme*

The Sister Industry Programme (SIP) is founded on the idea that “**senior** sister” firms in an industrialised country should enter into long-term technology transfer co-operation with newly established “**junior** sister firms” in a developing country. A senior sister is a firm which is familiar and well experienced with the production technology. The technology is transferred as a package of hardware and software components (installation, training and trouble shooting plus all improvements of the production technology during the contract period, normally five years).

The SIP was initiated between Sweden and Tanzania in 1976 and, up to the end of 1984, 25 SIP industries had been set up within industrial estates. Up to financial year 1983/84 SIDA had provided investment funds for these industries amounting to 92 million Swedish Crowns (SEK), i.e. about 50% of total SIDA support to small industries development in Tanzania during the period 1977/78 to 1983/84. In the same period the SIDA support for sister industries accounted for 40% of **SIDO's** total foreign exchange development budget. This indicates the importance of SIP in **SIDO's** total development activities.

Of total Swedish funds for sister industries about 30% represented software costs. In addition, SIP had received Swedish import support amounting to SEK 34.5 m. by the end of financial year 1984/1985. Late in 1984, there were about 600 employees in SIP junior sisters, implying an average investment cost per employee of about SEK 153,000, i.e. Tsh 300,000 at the official exchange rate.

The whole software component is paid for by SIDO, which implies a substantial subsidisation of the junior sister entrepreneurs. The equipment and machinery are paid for by the entrepreneur on a hire purchase basis with a loan from SIDO. The entrepreneur pays a 10% down payment when the machinery is commissioned, and this is the only "equity contribution" on his/her part.

The 25 SIP companies in Tanzania are at present capable of producing a wide range of consumer goods, equipment and tools, agricultural implements, etc. The technical training on the shop floor conducted by the senior sisters in Sweden and Tanzania has led to satisfactory results in terms of transferring to the trainees skills in the technology and machinery to be used, and enabling them to be innovative. This has resulted in the adoption of new products to meet market needs and has to some extent eased difficulties related to the supply of raw materials. A few companies have expanded into new lines of production, some even outside the SIP programme.

However, the SIP programme has encountered some major problems. One is related to the fact that the junior sister entrepreneurs get ready-made projects handed over. They hardly take any part in the initiation and establishing process, and they get hardly any training for the independent initiation and starting-up of new projects. Because of this late involvement, an important element in the transfer of know-how is omitted.

Another major problem is that many SIP projects are extremely dependent upon imported raw materials, with only very long-term prospects of relying more on local inputs to any significant extent. This problem primarily relates to the fact that most SIP junior sisters (15 in all plus 3 Common Facility Workshops) are metal-based. On the other hand, the predominance of metal-based industries corresponds well with the basic industry strategy adopted by Tanzania in 1975. But some non-metal industries are also highly import-dependent, for instance, the production of detergents.<sup>33</sup>

The economic crisis has highlighted the vulnerability of the import-dependent SIP industries. On average, the rate of utilisation in SIP companies is about 30% at present (1985) or slightly more if calculated on a one-shift basis. Many units are, however, designed to run three shifts. This should cause even more concern, because most SIP industries are capital-intensive. The level of capacity utilisation is in general far below an effective utilisation of the fixed capital employed and the break-even point in a

"normal" situation, i.e. with "normal" prices for the end products. The situation in Tanzania has, however, been abnormal because most companies have been able to raise the prices of their products owing to the general shortages and thus earn very good profits. The liberalisation of imports instituted in 1985 has exerted a downward pressure on prices which has led to competition for SIP and other small industries.<sup>34</sup> This will require them to reduce their costs and increase their capacity utilisation in order to survive.

Up to the present, however, it is important to note that the high domestic prices compared to export prices in Tanzanian Shillings have also worked as a disincentive against exports. Hence a vicious circle has been established within Tanzanian manufacturing industry, and not least the SIP companies. A scarcity of raw materials has led to high production costs which have resulted in even higher domestic prices in a sellers' market and good profits on domestic sales. This has given no incentive to exports, which has resulted in an absence of foreign-exchange earnings that would be a necessary precondition for an increase in imports of raw materials and spare parts to complement those available from local sources. The liberalisation policies have led to increased imports, but mainly of consumer goods. Unless imports can be tied to industrial inputs, capacity utilisation is likely to remain low in many small manufacturing industries. The scheme introduced by the Ministry of Industries and Trade in February 1986, allowing exporting units to retain up to 50% of their export incomes for purchasing industrial inputs, raw materials and spares, may direct more imports to the industrial sector, as compared with the present arrangement.<sup>35</sup>

### *The Indo-Tanzanian programme*

The Indian government provided a credit of 20 million Rupees (Rs) for small-scale industrial development in Tanzania in 1977. The credit was to be utilised for the import of machinery and the training of Tanzanians in India. The supply of spares and raw materials was not included. Forty-eight small industrial projects were planned and District Development Corporations (DDCs) were selected as entrepreneurs for 31 projects. DDCs has already been overburdened by the transfer of activities, industrial and others, from the defunct Co-operative Unions. Fourteen of the Indo-Tanzanian projects were located in industrial estates. Many of these in the Dar es Salaam industrial estates were engaged in ancillary production for a national bicycle factory which came into operation in 1978. Due to managerial problems and the economic crisis this factory soon had to close down, leaving most of the ancillary production units with major marketing problems which eventually led to shutdowns.

The implementation of the the Indo-Tanzanian programme was faced

with serious problems at both the despatching and the receiving ends. The shipments from India were not containerised which led to serious problems in retrieving items connected to a single shipment. In some cases machinery was delivered incomplete. Due to local insurance and shortage of foreign exchange in Tanzania, deficient deliveries could not be replaced. On the Tanzanian side, managerial weakness and lack of resources resulted in long delays in the construction of sheds. Some of the machinery already delivered was dumped in the open and left to rust. When Indian technicians arrived for installation and training, the groundwork had not been completed. The result was that many projects were never commissioned and training was never undertaken. The programme, originally conceived as a technology transfer scheme, had come to look more like a simple machine deal with some training and installation activities attached.

In order to improve projects which required further imports of raw materials and spares for replacement, the Indian government provided a Rs 50 m. credit on request for Tanzania in 1982. This credit has not been fully utilised because of administrative delays.

At the end of 1985, 18 of the Indo-Tanzanian projects were running with little or no operational difficulty, 14 were facing problems which could, according to the Tanzanian authorities, be solved, and 15 faced problems which could not be solved in the foreseeable future. Some of the entrepreneurs of the operating projects have stated that the fairly simple technology embodied in the machinery has made repair and production of spare parts possible to some extent in Tanzania. This has tended to offset some of the problems faced by the **programme**.<sup>36</sup>

It has been extremely unfortunate for SIDO and Tanzania, in a period when small-scale industries are being built up, that so much of the industrial extension service capacity has had to focus on the project failures within this programme. Necessary, but long overdue, action was taken by the Tanzanian government in late 1985 to put the various pieces in place and to clear up doomed projects.<sup>37</sup>

### *Other small-scale manufacturing industry*

The major share of small-scale manufacturing in Tanzania is, after all, not located in industrial estates and is generally not reached by assistance from government or various external agencies. In the deepening crisis, it has been under strong pressure to adapt to a changing environment. In particular, it has faced fierce competition for available raw materials or inputs and has increasingly had to have recourse to alternative domestic inputs.

The input constraint has been intensified by the fact that large-scale industries have also had to obtain inputs domestically. Thus, small industries have often had to compete with large-scale parastatals and private

industries for scrap material. Large-scale industries have more often been able to pay suppliers of inputs in advance, thus relegating small units to a lower priority.

According to observations, innovation in terms of raw material usage has to some extent kept production going in some lines. For instance, some units have made plough beams from old sisal estate rails. These rails are also used as axles in the production of ox-carts. A few units have substituted the iron plough beam with a wooden beam. Sisal ropes instead of metal trek chains for ox-ploughs were introduced on the directive of the Ministry of Industries in 1983, but were rejected outright by the peasants as infeasible. This is a reminder that consumer acceptance of the use of new raw materials in production should not be totally forgotten by producers and the authorities.

A strategy which seems to have been adopted by some small-scale manufacturing units in response to input shortages has been to diversify production. This implies that a unit can procure raw materials from different sources and improve the chances that at least one or a few lines of production can be kept going at any one time. The basis for this has, however, been that cost increases can be transferred to the **consumers**.<sup>38</sup>

This process of innovation both in terms of products and sources of raw materials has still to be properly documented. Observations indicate that the crisis has brought forward innovative forces within all kinds of industries. These processes may have been even more pronounced among those crafts and small industries which fall outside the realm of government assistance. Other contributions in this book indicate similar trends in other sectors. It is still impossible, however, to see how strong this process of innovation will be in terms of technological impact on small-scale industrial development.

## CONCLUSIONS

The above highly compressed description and analysis of a complex sector provides a basis both for conclusions and hypotheses.

Rural industrialisation has not taken place as projected by SIDO through a dispersal of industrial units from urban (including estates) to rural areas (including regional and district towns). Nor has there been a process of rural industrialisation from below. Observations and investigations suggest that there is a firmer basis for the latter model to succeed if existing obstacles related to linkages, ownership, organisation and support activities are removed. However, long-term constraints linked to the structure of underdevelopment will remain and should be dealt with cautiously in order to avoid unrealistic plans and expectations.

Improvement of intra- and inter-sectoral linkages represents the best potential for the growth of crafts, cottage and small-scale industries. Such linkages could be exploited more fully if macroeconomic policies related to agricultural crop marketing and producer prices were reconsidered. The extremely weak linkages between agriculture and small industry processing could be dealt with by removing the monopoly purchasing rights of crop authorities, thus paving the way for a decentralised industrial processing pattern, which would be low on transport demands because of proximity to raw materials and local markets. Increases in agricultural producers' prices, coupled with growth in rural employment opportunities, could represent an important demand injection for rural non-agricultural production activities.

Linkages within the industrial sector could be improved by increased co-ordination between SIDO and regional planning authorities. At present this link is very weak. Improved co-ordination with large-scale industries, many of which are parastatals, might provide increased intra-industry linkages. Experiences show, however, that the Small Industries Development Organisation (SIDO) has to go out actively to identify and encourage such arrangements.

Support to crafts and small-scale industries is provided both by the Tanzanian government and by external donors. Investigations show that SIDO has not taken the major role as envisaged in the SIDO Act in the promotion and co-ordination of support for the sector. Limited financial contributions from the Treasury and lack of integration of small industrial development plans into the national planning system, have forced SIDO to become increasingly outward-oriented in soliciting assistance. During SIDO's first decade of operation, 1973 to 1983, 59% of its development budget originated from external sources. This outward orientation seems to have made the organisation incapable of finding local solutions to the problems of the small-scale industrial sector. Donors on their side, mainly aid agencies of industrialised countries, have offered assistance within their national range of know-how and production, which is often of little relevance to Tanzanian needs.

The combined effect of these developments has been that two-thirds of all resources utilised by SIDO and as much as 93% of SIDO's major credit schemes (hire-purchase) have been channelled to the urban areas. This is quite contrary to the national objective, which emphasises small-scale industrial development in rural areas. Another national objective which has been negated by these developments is that small-scale industries should be initiated and run by the people themselves, thus enhancing self-reliance. The strong donor influence in this sector should have required a SIDO strategy for selecting items offered by donors which were more in accordance with national objectives. Until SIDO develops a consistent strategy



which determines priorities and improves co-ordination, it will remain a weak instrument for national promotion and direction of this sector. To this end improved guidelines and support are also required from **SIDO's** parent ministry, the Ministry of Industries and Trade.

It was noted in an earlier section of this chapter that official statistics depicting the size and growth of the small industrial sector were conflicting and even contradictory. Based on the above observations, investigations and analysis, my assessment of the growth and significance of the sector gives more credence to the picture presented by the Bureau of Statistics than to that by **SIDO**, but with some major qualifications. The sector as such seems to ~~have suffered~~ a decline in its growth during the economic crisis. This has mainly been due to dependence on imported machinery and spares and upon imports and supplies from national large-scale industries for raw materials. **Observations** and evidence suggest, however, that important parts of the sector, in particular crafts, have responded under pressure by making better use of domestic raw material sources and have managed to modify the mix of items produced so that they correspond better to the demands and needs of people. This indicates that the decline in the rate of growth has not been uniform, as assumed by the Bureau of Statistics, but that segments of the sector may have been able to maintain modest growth rates. Owing to the increasingly informal character of this segment of small industries, these differential growth rates are likely not to have been captured by national statistics.

Already in 1978 the Bureau of Statistics estimated that establishments with **5–49** workers accounted for 21.5% of total manufacturing employment. To this we have to add all those employed, permanently and temporarily, in the category of units employing 1–5 workers. This last category is likely to be large, in particular in terms of temporary employment, and it has also been the least affected by the crisis. Hence, it seems safe to assume that the small industrial sector today contributes significantly to employment generation in the country. There is much evidence showing that a momentum is developing in the sector in terms of innovation and substitution which may, if supported carefully, be turned into longer-term technological advancement. This suggests that the sector in many respects commands a potential for contributing to national development which should not be overlooked in the future.

## NOTES

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# 15. State, Donors and Villagers in Rural Water Management

*Ole Therkildsen*

Tanzania's economic crisis has also hit the rural water supply services. Lack of funds for construction, maintenance and transport is an obvious sign of this. The crisis has contributed to a rapid deterioration of existing water supply schemes and to a growing number of uncompleted ones. Today probably less than 20% of the rural population is regularly drawing water from improved water sources. If the existing supplies were working properly they would have the capacity to provide twice as many people with water. Furthermore, new schemes under construction now often take four to five years to finish. Previously schemes could be completed in one to two years.'

Lack of resources is, however, only one aspect of this problem. The crisis has other dimensions as well. For the crucial issues in the rural water sector have remained unchanged since Tanzania embarked in 1971 on the ambitious goal of providing safe water within easy access to all rural households by 1991. They are the following: How strong is the political interest at the central government and Party level in supporting the rural water supply sector, and how is the interest translated into concrete policies, actions and resource allocations for manpower, capital and recurrent expenditure? Is a rural power base for improved water supplies emerging, and what are the channels through which peasants can exert pressure on government and Party to secure resources? What is the capacity of the bureaucracy and the party at central, regional and district level to promote the construction of new supplies and help sustain the benefits of existing ones? How can donor funds and technical assistance best be used to improve rural water supplies?

This article therefore focuses on the political and institutional problems of the rural water sector, and on the problems of donor involvement. In the first part, the main developments of relevance to the rural water sector up to 1982 are traced. It shows the growing problems of a strategy in which the beneficiaries remain the passive receivers of state- or donor-provided water supplies. It also shows the extremely narrow and short-term views of donors and the often destructive effects of their involvement in the sector. The second part of the article outlines some emerging changes in policies and in donor assistance since 1982. They may eventually provide a more appropriate and realistic framework for rural water sector development than existed prior to 1982.

## DEVELOPMENTS UP TO 1982: TARGETS AND ACHIEVEMENTS

The main features of Tanzania's rural water supply development emerged from 1965 to 1972. During the next ten years the only major policy change was the declaration in 1975 that all villages should be provided with one good source of water by 1981. However, this goal has not had much impact on planning and resource allocation except in 1975 and 1976. Five main features of sector development are discussed below.

### *The appeal of rural water supplies as a "free" service*

The most dramatic change introduced by the independent government concerned the financing of rural water supplies. In a clear break with colonial policies, user payment towards construction costs was abolished in 1965, and user contributions to operation and maintenance ceased in 1970.<sup>2</sup> During the same period local government taxation was gradually abolished so that central government eventually carried the financial burden of the rural water sector alone. From then on a rural water supply was regarded as a "free" public service.

This obviously increased the popularity of water schemes in the rural areas. Several surveys of "felt need" among rural men and women confirm this. Most peasants, it appears, prefer government assistance for water, schools and health facilities rather than for fertilisers, soil erosion control, seeds, etc.<sup>3</sup>

Provision of "free" water supplies by the central government to the villages also fitted well with the ideology of the Party as expressed in the Arusha Declaration of 1967. When the improvement of water supplies is no longer restricted by local willingness and ability to pay, they can be provided according to need. More importantly, perhaps, it puts the state in control, making it the benevolent provider of a service which is in high demand. Water schemes can then become a valuable political resource. The political leadership used schemes as inducements to encourage peasants to start Ujamaa villages when this was still voluntarily done. And during the villagisation campaign begun in 1974, an improved water supply was one of the benefits that peasants were promised in exchange for moving into the new settlements. Politicians and bureaucrats also found control of the funds for new water schemes useful. It became a valuable chip in the patron-client bargaining in which Members of Parliament have been especially active.<sup>4</sup>

No wonder, then, that a tremendous push for improved rural water supply started after 1967. During a period of six years Tanzania changed its goal for the rural water sector three times. In the First Five Year Plan

Table 15.1. *Resource allocations to rural water supplies, 1964–84<sup>a</sup>*

	64/65– 68/69	69/70– 73/74	74/75– 78/79	79/80– 83/84
<b>Capital expenditure</b>				
Donor funds (Tsh m.)	26	141	471 <sup>a)</sup>	649
Total funds (Tsh m.)	39	193	617	1032
Total funds in 1974/75 prices (Tsh m.) <sup>b)</sup>	n.a.	n.a.	496	428
Donor funds/total funds (%)	67	73	76	63
Total funds/total central & regional government capital budget (%)	n.a.	n.a.	2.6	2.2 <sup>c)</sup>
<b>Recurrent expenditure<sup>d)</sup></b>				
Total regional funds (Tsh m.)	n.a.	n.a.	286	763
Total regional funds in 1974/75 prices (Tsh m.) <sup>e)</sup>	n.a.	n.a.	222	238
Total regional funds/total reg. gov. recurrent budget (%)	n.a.	n.a.	4.4 <sup>f)</sup>	5.7

<sup>a)</sup> Estimated for 1975/76.

<sup>b)</sup> Assuming that 60% of donor funds are spent outside Tanzania (see Hordijk, A., E.M. Munuo, D. Ricardo, M. Schroder, 'The Netherlands Sponsored Water Projects in Morogoro Region – Tanzania', Unpublished Report, May 1982, Ministry of Foreign Affairs, Holland, p. 72; and Ministry of Water and Energy and Australian Development Assistance Bureau, *Evaluation of the Tanzania Village Water Development Project*, Final Report, 1984, p. 4.23. These funds are subject to inflation in the international price index for dollars. Remaining funds are subject to local inflation after the retail price index. Indexes in Schluter, "An Analysis of Budgetary Allocations", Unpublished, World Bank, September 1982.

<sup>c)</sup> 1979/80 – 1982/83.

<sup>d)</sup> Rural water supply recurrent expenditure from central government budget cannot be separately identified. Figures indicate regional funds only. See text.

<sup>e)</sup> Deflated by retail price index.

<sup>f)</sup> 1975/76–1978/79.

(issued in 1969) water for all was envisaged within 40 years. Two years later (1971) the Party declared that this goal (safe water within 400 metres) should be achieved within 20 years. And in 1975 – at the peak of the villagisation campaign – the Party declared that by 1981 all villages should be provided with one source of good water. Although the 1981 goal (one water point only and no distance criteria) implied a significantly lower service level than the 1991 goal, the contrast with the immediate post independence period is clear: before 1969 rural water supplies were not even mentioned in the social service sector reviews.<sup>5</sup>

*The gap between target and resources*

Hydén has called this style of policy making “We-must-run-while-others-walk”.<sup>6</sup> It often leads to conflicts between means and ends which are left unresolved until the implementation stage. Thus, bold policy statements may very well be reflected in the long- and medium range (five-year) plans, but the actual resource allocations are fixed in the yearly budgets and they have been much smaller. Unfortunately, much discussion of Tanzania's basic needs policies ignores this simple fact.

Table 15.1 is based on the yearly budgets.<sup>7</sup> It shows that rural water supply development allocations have been a relatively small and falling part of total development allocations since 1974/75.<sup>8</sup>

During the same period there has also been a fall in real terms. These declines have been fairly consistent year after year since 1975/76 – when the nation-wide resettlement of the rural population into villages took place. Donor contributions to rural water supply capital expenditures have also declined steadily since 1975/76 both in real terms and as a proportion of total funds.

Budgetary allocations of recurrent expenditures channelled through regional governments have just kept up with inflation since 1975/76. This excludes recurrent funds to rural water supplies from central government which cannot be separately identified. But the total Ministry<sup>10</sup> recurrent budget for urban and rural supplies has been only modestly increased in current prices since 1975/76,<sup>11</sup> although much of these funds are switched to other uses.<sup>12</sup> Thus, when inflation, the increase in the number of new schemes, and switching are taken into account, it is clear that allocations of recurrent funds to rural water supplies have become increasingly inadequate.

Actual resource allocation to the rural water sector has therefore been more modest than policy statements and Five-Year Plans may lead one to believe. Tanzania's poverty, the economic crisis, and the relatively limited resources provided by the donors have clearly made it impossible to reach the 1991 goal. Budget figures indicate that it was already abolished around 1976, but officially the 1991 goal itself is still on. Over the years it appears to have acquired a sacrosanct status – both within the bureaucracy and the Party *and* among donors. It is only when actual achievements are compared with declared goals that the gap is evident.

*The fading central bureaucratic-political interest*

The impossibility of reaching the 1991 goal has been evident for at least a decade. At internal meetings of the Ministry the frustration of being asked to do the impossible has often been clearly expressed. As one such meeting



resolved: "either the necessary resources be provided on target, or the target be restated."<sup>13</sup> But neither the Party nor the government reacted to this or other calls for policy changes.

Party interest in rural water policies appears to have been focused on goal-setting only. There have been no Party reviews of progress in the sector.<sup>14</sup> 1981, for instance, was passed in silence without reviewing achievements in relation to the 1981 goal. A permanent national Chama Cha Mapinduzi (CCM) Committee on Social Services established in 1982 has not yet taken any active interest in rural water sector policies and performance. Its existence is largely unnoticed in the Ministry. On the other hand, individual members of the Party and Parliament often actively try to secure new rural water supplies for their own constituencies. But this interest has not gone beyond the struggle for funds for specific water projects.

With the role of the Party limited to "big" decision-making on sector targets, the formulation of strategies for reaching them has been left to central government. The rural water supply sector falls under the Ministry of Water, Energy and Minerals.<sup>15</sup> As Tanzania's economic crisis has deepened, the importance of both the energy and minerals sector has grown disproportionately. The performance of both has a direct impact on the country's crucial foreign-exchange situation. Furthermore, the capital funds controlled by the Ministry for the energy and minerals sectors are far bigger than those for the rural water sector. In the early 1980s the latter only made up 10–15 % of the total capital budget of the Ministry.<sup>16</sup> It is therefore not surprising that rural water sector problems get limited attention at the top level of the Ministry.

Another major contributing factor to this situation has been the decentralisation of 1972. It meant that the Ministry lost a substantial part of its control over project planning and implementation, budgets, and manpower to the regions and to other central ministries – notably the Prime Minister's Office and the Ministry of Finance. One report describes the situation as "20 Regional Water Engineers constructing rural water supplies as more or less independent organisations."

A central constituency for the rural water supply sector has therefore not developed. The Party has been unable or unwilling to assume this task. Nor has it been the watchdog over the water implementing bureaucracy that it proclaims as its role. For the Ministry the real bureaucratic-political incentives have increasingly been in the energy and minerals sectors. As the economic crisis has deepened, the rural water supply sector has become a step-child of central bureaucratic-political interest.

### *The donor invasion*

Withering high-level interest in rural water supplies, combined with the need for external financial support and technical assistance to reach the 1991 goal, has gradually placed donors in a key position in the rural water supply sector. For the implications of the ambitious Party goal were clearly daunting and in obvious conflict with the Party's self-reliance ideology. Thus, from 1971 almost 1 million people had to be given access to an improved water supply each year in order to reach the 1991 goal. This implied an immediate eight-fold increase in pre-1971 annual implementation capacity. The Ministry clearly did not have this capacity in terms of funds, material and manpower.

Tanzania's appeals fitted well with the growing interest in basic needs in the aid community. Rural water supplies in particular appeared quite suitable. They were visible signs of donor interest in rural development. They even benefitted women. They had high priority at all levels in the recipient society and therefore appeared non-controversial. They required substantial inputs of imported material which could be bought in the donors' home countries (for donors had their own balance-of-payment **problems**).<sup>18</sup> They were capable of absorbing substantial amounts of donor funds. And they necessitated substantial technical assistance which the donor could supply and through which the aid money could be controlled. Both recipient and donor could therefore pursue their own interests without any apparent conflict of interest. If increased donor control of rural water sector activities was the price to be paid to reach the 1991 goal, it did not seem excessive. The problems in the rural water sector were mainly regarded as technical by recipient and donors alike. Both saw physical progress towards the 1991 goal as the overriding criterion of success.

Donor influence was obviously related to their importance as financiers. As Table 15.1 shows they tripled their contribution in the early 1970s. This was followed by a change in aid modality and forms of control. Aid was increasingly given to specific projects. Sweden had been the major supporter of the rural water programme in the late 1960s but towards the end of the 1970s it gradually switched to project aid. No doubt this switch was made to attain a better control over funds, following a public debate in Sweden in which the Swedish programme support to the rural water sector was called the "aid scandal of the 1970s."<sup>19</sup> Other donors also increasingly channelled aid to projects only. By 1978/79 a total of 46 projects were financed by 16 different **donors**,<sup>20</sup> and programme aid had been drastically reduced.

Another way to increase donor control was to give project aid to specific regions only. The Ministry encouraged this "take-over" of individual regions, in which donors could get actively involved in both the planning and implementation of rural water supplies. The assumption was that greater

donor control would also induce them to increase financial **support**.<sup>21</sup> By 1982, for example, only 7 out of 20 regions did not have a major donor. Rural water supplies in the 13 other regions were mainly funded by donors (Australia, Denmark, Finland, Holland, Norway, Sweden, West Germany and the World Bank).

Donor-financed Water Master Plans prepared by private consultancy teams became a standard prelude to subsequent donor involvement in rural water supply implementation. These plans were to be blueprints for reaching the 1991 goal in an "optimal and controlled" fashion. Sixteen such plans were prepared from 1972 to 1982 by 10 different expatriate planning teams. Only one (for Dodoma region) was prepared by the Ministry itself.

Substantial resources (more than Tsh 250 m.) went into the planning exercise, but now most plans – especially those prepared in the 1970s – "are collecting **dust**."<sup>22</sup> Perhaps the most important reason for this is that all plans were based on the completely unrealistic 1991 goal. The consultants (and the donors who defined their terms of reference) implicitly based the plans on the assumption that financial, material and institutional constraints did not exist.

Another important reason why the plans were shelved was that planning and implementation were separated. The expatriate planners never got first-hand experience of implementation problems on which they could base their plans. In addition, the expatriate planners were rather inexperienced in this type of **planning**.<sup>23</sup>

Furthermore, it was never clear for whom the plans were written. Their status remained unclear, for in Tanzania only the yearly budgets are **institutionalised**.<sup>24</sup> The regional authorities, who were not involved in Water Master Plan preparation, today appear largely unaware of their existence.

Finally, most plans did not address certain key issues of rural water sector development. Operation and maintenance was almost completely ignored. The past and future capacity of water authorities to plan, implement and maintain was rarely analysed. Participation and the role of beneficiaries were mostly neglected. The plans therefore did not have much impact on implementation, although they did provide some donor agencies with the formal basis for moving money into the rural water sector.

Donors achieved the most effective control over implementation by establishing their own project units through which the aid resources were channelled. With separate accounts, own stores, yards and vehicles; with expatriate professionals on key jobs; and with the field staff either directly hired by the unit or seconded to it from the water authorities, these units operated largely independently of the existing organisations at district, regional and Ministry level. This type of set-up was especially used by the Finns in Mtwara and Lindi; by the Dutch in Shinyanga and Morogoro; by

the Australians in Singida; by the World Bank in Mwanza; and by the West Germans in Tanga. Their overriding aim was to produce new water supplies fast and efficiently under donor control. They became oases of plenty in resource-starved surroundings. The capacity of local institutions to take over when the donors withdrew was therefore not increased. Instead, they were bypassed by the project units which frequently also attracted the best field staff from *Maji* thereby weakening and fragmenting it\*.

Few attempts at co-ordinating the donor activities in the rural water sector were made in the 1970s, for both recipient and donors were in basic agreement on the paramountcy of constructing new schemes to reach the 1991 goal. It was a question of "doing the job without interference".

In the absence of co-ordination a cacophony of donor financed plans, technologies and policies emerged. Plans that differed in scope, methodology and detail were worked out in isolation from the Tanzanian institutions. Technologies were often incompatible because each donor tended to import own materials, fittings and pump types. The possibilities for linking rural water sector development to industrial development – for instance through the local production of simple hand pumps – were never actively pursued. And the policies of the donors were not only different from, but sometimes even contradictory to, official Tanzanian policies. The World Bank, for example, demanded advance user payment for hand pumps in their Mwanza project, while villagers in Mtwara-Lindi were paid to excavate trenches by the Finnish project. Thus the World Bank abolished the principle of "free" water supplies while the Finns abolished the principle of self-help, both of them key aspects of Tanzanian rural development policies.

### *Villagers: passive receivers*

So far very little has been said about the "target group" for all the activities described above: the Tanzanian villagers. This is not accidental. The role of villages and villagers in the rural water sector has in general been very modest since 1970. They have become the passive receivers of state-provided water supplies. Their involvement has mostly been limited to the sporadic contribution of self-help labour during construction. And once completed, operation and maintenance has also been the responsibility of government.

Local participation has therefore been much more restricted than is implied by Tanzania's professed ideology. This is not so odd as it may sound; the implications of active village participation are to some extent in conflict with the basic interests of the Party and the bureaucracy. Only if water supplies are controlled by the state can they be provided to or

withdrawn from villages according to wider political goals or to the promotion of patron-client relations.

Declaration of the 1991 goal and the concomitant emphasis on pervasive bureaucratic blueprint planning obviously leaves little room for local participation (other than the provision of free labour). Also the excessive emphasis on production targets, which the Party and bureaucracy have shared with donors, has left little room for village participation.

Moreover, the so-called decentralisation of 1972 effectively restricted participation. It removed the rural petty bourgeoisie from the leadership role it had played in self-help projects both during colonial rule and immediately after Independence, and replaced it with district and regional bureaucrats who owed their loyalty to the state. Local funds previously controlled by District Councils were taken over by the Ministry of Finance. Central government became the only source of funds.

The role of villages in selection, planning, implementation and operation of schemes has therefore changed little despite decentralisation. No village based interest groups for rural water supply development have emerged during the 1970s – nor has the Party, the bureaucracy, the donors or the administrative set-up encouraged such groups to develop.

#### *Estimates of population served*

"Official" statistics claim that around 40% of the rural population now has access to water supplies. This figure significantly overestimates the number of people who regularly draw water from rural water schemes. For it assumes that the full capacity of new schemes is used throughout the lifetime of the scheme; that all schemes are operating; and that villagers draw water from them regardless of the location of water points relative to the location of house settlements and traditional water sources.

The first assumption does not hold. Schemes are generally designed to supply a population twice as big as the present one. With prevailing growth rates, it therefore takes 20 years before a scheme serves all the people it is designed for.

The assumption that all schemes operate is, of course, a crucial one. Frequently it does not hold either. In a country-wide survey of a large number of schemes in 1975, Engstrom and Wann found that at least 40% did not run regularly. In Rukwa and Kigoma (Western Tanzania), it was found that more than 50% of the schemes were in poor condition in 1981.<sup>26</sup> Figures of the same magnitude are reported from Mtwara and Lindi in Southern Tanzania.

The third assumption is often not valid either. For even when water schemes *do* provide water, women may still prefer traditional sources. This

happens when women perceive traditional sources as better than the water from a scheme. In this choice access (distance, queuing time), quality (appearance, smell, taste) and cultural views (traditional water rights, taboos, etc.) are crucial factors. It is particularly unfortunate that the views of women were rarely considered in the design of new schemes.

Poor operational conditions and problems of access and water quality reduce utilisation of water schemes significantly. According to surveys only two-thirds of households in villages with a scheme regularly draw their water from the new **source**.<sup>27</sup>

When all three assumptions are considered together, it seems reasonable to halve the official estimates. Thus, probably about 20 % of the rural population is served with water from improved supplies at present. A fairly modest implementation rate compared with the yearly growth in rural population has made it increasingly impossible to reach the 1991 goal. Only from 1975 to 1979 did the yearly increases in new water supply capacity clearly exceed the population growth. By 1982 a quadrupling of the implementation rate of the 1970s was needed to reach the 1991 goal. This is patently impossible.

## DEVELOPMENTS AFTER 1982

Crisis also provides new opportunities. By 1982 there were clear signs that the Party, the Ministry and the donors were all reconsidering previous approaches to rural water sector development. Some important changes have already been introduced, while others are in the offing.

### *Structural changes: user payment and decentralisation*

A new policy on user payment for operation and maintenance of rural water supplies is probably under way. Water supply will no longer be a free public service. Nyerere, speaking as Party Chairman to the Second Ordinary Party Conference in 1982, said: <sup>28</sup>

Whatever the technique used [for building water supplies] it must be adopted in consultation with the local people, and from the beginning the responsibility for looking after the facilities must clearly be theirs. Government cannot finance the maintenance and repair work of basic village equipment if new developments are to go ahead.

An important step towards implementation of the user-payment policy has been the reintroduction of local government with powers to tax. Because of this revenue-generating power the new District Councils will have

some control over their own finances. They will also receive substantial funds from central government. Furthermore, much of the technical staff involved in rural water supplies under the regional authorities will be moved to the districts. The third significant element in the new structure will be the Council. It will mostly consist of members elected from each ward in the district. These members may represent user interests vis-à-vis the bureaucracy. The practical implications of these structural changes for rural water supply development have not yet been prepared in detail. However, both the Ministry and the Prime Minister's Office are working on it, and several donors are pushing hard to get an early clarification as a condition for continued support to this sector. The actual functioning of District Councils as channels for peasant influence will have significant impact on rural water sector development.

***Reconsidering sector policies: participation and donor role***

Reintroduction of user payment and local government are parts of general structural changes initiated by the Party. Several specific rural water sector policies are, however, also being reconsidered at the government level. The position of the Party remains unclear – at least to an outside observer.

The feasibility of the 1991 goal is being openly questioned. Staff in the Ministry are now recommending that this goal be scrapped and replaced by a less spectacular but more realistic one.<sup>29</sup> This may signify a first step towards a more realistic assessment of means and ends which the 1991 goal has so far prevented.

User participation in rural water supply development is reappearing as an issue of importance. During the 1970s it was treated with benign neglect at the Ministry, by the donors, and by technical staff in the regions and districts, despite rhetoric to the contrary. Systematic attempts at translating this rhetoric into practice started in the early 1980s. Procedures for participation in planning, implementation and maintenance were worked out and the rights and duties of village and government specified. Obviously these procedures do not provide a panacea for the problems of the rural water sector, but field experiments have shown that villages, given the chance, are willing and capable of playing an active role in the improvement of their own water supplies.<sup>30</sup> Technical staff in the Ministry are now actively endorsing participation.<sup>31</sup> Formal government endorsement of important village rights and responsibilities has been considered for some time now in both the Ministry and the Prime Minister's Office, but has still to be implemented.

The role of donors is also being reconsidered. Questions are now being raised by the Ministry about the need for expatriates; the high cost of donor assistance; the harmful effect of separate donor implementation, etc.<sup>32</sup>

These issues were never publicly raised from the Tanzanian side in the 1970s. They may signify that the Ministry will take a more active and critical attitude *vis-à-vis* the donors in shaping future rural water sector policies. Some donors are also changing approach following what one aid official calls "the complete disaster of our assistance so far."<sup>33</sup> Finland and Holland, which have channelled their funds through independent implementation units for almost one decade, are now trying to integrate their assistance into the regional and district organisation – and to involve users in the development of schemes. This means that the implementation of new schemes will slow down and that more resources will be given to operation and maintenance. Denmark, Norway and Sweden are partly, and to varying degrees, integrating their technical assistance into existing water sector organisations, although only at the regional level so far.

## CONCLUSIONS

The structural changes and the reconsidering of sector policies in recent years may provide a new and more appropriate context for rural water supply development. They are, however, unlikely to change conditions significantly in the short run. For experiences from the 1970s clearly indicate the limits to high-level political support for the sector; the feeble or non-existent organised rural water supply lobby at the local level; the modest implementing capacity of the water authorities; and the problems of donor-financed assistance.

Tanzania's ability to solve these problems has been seriously weakened by the economic crisis. Forces in Tanzania, as well as major donors (notably the IMF and the World Bank), therefore argue that it is time to put the rural water supply programme on the backburner together with the other basic needs activities until better times. Efforts should instead be concentrated on increasing agricultural production. Official Tanzanian policy has not changed, however, and many donors (notably UNICEF and the Nordic countries) continue to provide significant support for constructing new rural water schemes.

Both approaches are problematic. On the one hand, it appears irrational drastically to cut off resources, for the sunk costs in rural water supply are substantial. Potentially 40 % of the rural population could get access to safe water if already existing schemes functioned properly. It is extremely short-sighted from both a technical and an economic point of view to scrap these installations – let alone the social costs of doing so. On the other hand, it appears equally irrational to continue to construct new schemes, when the already existing ones are not maintained. Especially when this expansion is to a large extent financed by donors who so far have placed more weight on



producing new schemes than on providing maintenance support and assistance to the local organisations that eventually must take over.

The need for an alternative approach is therefore obvious. Maintenance of existing schemes should receive the highest priority. Rehabilitation of existing schemes should come next in line. Construction of new schemes should be given the lowest priority. Four key factors need to be considered simultaneously in the implementation of this approach.

*The need* for improved water supplies varies significantly between villages. Only high-need settlements should receive support for the running, maintenance, rehabilitation or construction of schemes.

*Technical and economic feasibility* should also be a key selection criterion. Many existing schemes, for instance, are technically infeasible to rehabilitate or, if fixed, would be very costly to run. Diesel pumped schemes provide a good example of the need to consider the recurrent cost implications with respect to each individual scheme *and* its impact on the total recurrent cost budget of the district.

*Actual user participation* in the improvements should also be a key condition for support from a donor or the District Council. Villagers should have the right to say no to a proposed scheme.

Finally, the activity level must be adjusted to the organisational *capacity* of the District Councils. For instance, the establishment of an effective maintenance system (in which users must be given a key role) should be a key criterion for external support to a district/village. In several districts this may leave little room for any significant rehabilitation and construction activities.

Resources and technical assistance from central government and donors will obviously remain indispensable in the implementation of this approach in which the time horizon goes far beyond the three to five year commitments that donors now make. However, the crucial factors will be the District Councils and the villages. Therefore the pace of water sector development is likely to be slow and uneven, depending on the constellation of power, interest and skills in individual districts and villages. But experience shows that local level involvement is absolutely necessary. Improvement of rural water supplies cannot be achieved on behalf of the villagers by the central government, the Party or the donors.

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# 16. Health Services: Official and Unofficial\*

*Harald Kristian Heggenhougen*

In Tanzania, health has always been considered a central component of overall economic and social development. In particular, an equitable distribution of health services, with emphasis on the previously neglected rural areas, has been accepted part of national development policy since the early 1960s. Even though it was only at the beginning of the 1970s that the rural emphasis of the health policies was seriously implemented, there are now official health units in more than one-third of the Tanzanian villages. But for various reasons, some of which are related to the present crisis, they have faced several problems in their functioning. It is further evident that because of economic and manpower constraints it will be impossible to have a health centre or a dispensary in every village within the foreseeable future. Traditional healers, however, remain active in both urban and rural areas. This situation has led to a renewed interest in the training and use of community health workers.

## DEVELOPMENT OF HEALTH FACILITIES

At independence in 1961 the health services in Tanzania were similar to those in most post-colonial countries. They were largely hospital-based and expatriate-dominated, mainly benefitting an urban elite. In particular, there was an acute lack of trained Tanzanian personnel; in 1961 the number of African doctors was only 17. The colonial emphasis continued during the early years of independence. In the 1961–64 development plan 4% of the national budget was allocated for health and the majority of that was still for urban hospitals.'

During the 1960s there were two major policy initiatives of great relevance to the health sector. The first was a health sector review undertaken in 1962–64. The resulting Titmuss report advocated an expansion of rural health services and suggested that more importance should be placed on preventive, and not only on curative, services.' The second was, of course, the Arusha Declaration of 1967, which re-emphasised the seriousness of the government's commitment to rural development.

As a concrete measure, a health centre and dispensary construction

Table 16.1. *Urban/rural distribution of staff* <sup>5</sup>

	1972	1976	1978	1980
Doctors				
Urban	418	487	513	598
Rural	216	399	479	547
Nurses				
Urban	2606	2760	2868	3570
Rural	1653	2060	3322	4705
Medical Auxiliaries (MAs & RMAs)				
Urban	208	456	624	910
Rural	605	1363	2166	2800

Table 16.2. *Development of rural health care infrastructure 1961–80* <sup>6</sup>

	1961	1972	Actual 1980	Target 1980
Health centres	22	99	239	300
Dispensaries	975	1501	2600	2300
Medical assistants	200	335	1400	1200
Rural medical aides	380	578	2310	2800
MCH aides/Village midwives	400	700	2070	2500
Health assistants	150	290	681	1800

programme was incorporated in the first Five-year Plan 1964-69. But at the end of the plan period, it was found that only five of the 80 health centres planned had been **completed**.<sup>3</sup> Similarly, as there was little change in health personnel training, health services retained their curative bias. Thus, even when dispensaries and health centres did exist in rural areas they were (and to some extent continued to be) seen as static units for curative care rather than as comprehensive health care facilities.

In fact, it was not until 1972 that the health policy seriously began to reflect the intentions of the **Titmuss** Report and the Arusha Declaration. The proportion of the total health budget allocated to the rural sector was only 20% in 1971. Over the next ten years it more than doubled, reaching 42% in 1981.<sup>4</sup> As a result of this, there was a marked shift in the distribution of the health personnel (see Table 16.1). Even though all the targets have

Table 16.3. *Type of health facilities according to administrative areas*<sup>7</sup>

Administrative area	No.	Type of health facility	No.
Villages	8,300	<b>Village Health Posts</b>	<b>1,500*</b>
Wards	1,963	Dispensaries	2,600
Divisions	360	Health Centres	239
Districts	104	District & Rural Hospitals	126
Regions	20	Regional Hospitals	17
Zone	6	Consultant Hospitals	3
		Special Hospitals	2

\* Estimated.

not been attained, the development of the present rural health care infrastructure since independence is no mean achievement (see Table 16.2).

Despite the shift of resources to the rural areas and the increased emphasis on preventive services it is inevitable that hospitals still require a major proportion of the health budget. The Tanzanian health services system is now organised at six levels corresponding to the different administrative levels, from consultant hospitals in Dar es Salaam, Mwanza, Moshi and the newly opened one in Mbeya, to health centres and dispensaries in almost 3,000 villages (see Table 16.3).

With the increase in rural health units, and trained personnel to staff them, there are now health centres and dispensaries in more than one-third of the country's villages. An accessibility study carried out in six regions in 1979 found that 92% of the population were within 10 km and 70% within 5 km of a health facility, and 45% had such a facility in their own **village**.<sup>8</sup> Also, standard indicators of general health status have shown improvement; e.g. infant mortality has decreased from 160 per thousand in 1967 to 135 per thousand in 1978, although substantial internal differences within the country remain.<sup>9</sup> This may not necessarily be seen as a direct consequence of the growth of the rural health services but it must surely be related to it.

Although Tanzania can be proud of its health service infrastructure there is now increasing concern about its functioning. The crisis has affected the material basis of the health system and has led to a lack of equipment, drugs and transportation. There are also increasingly loud complaints of the negative attitude of certain staff members, in particular nurses, towards patients and of inadequate quality as well as of poor management and organisation of the services provided.<sup>10</sup> Operational research, on-the-job training and continuing education are some of the means employed to begin

to improve this situation. The establishment of the national Centre for Educational Development in Health at Arusha (CEDHA) is a direct effort to improve the functioning of existing units and personnel. Similarly, the national essential drugs programme and the expanded programme of immunisation are but two of several attempts to improve both supplies and availability of services.

## FOLK MEDICINE

Any discussion of health services in Tanzania, as in most developing as well as in developed countries, must also take note of folk medicine and other alternative healing practices, i.e. the traditional healers and traditional birth attendants functioning throughout Tanzania.

Tanzanian healers can be roughly categorised into groups of herbalists, ritualists or spiritualists: in addition, there are the village midwives, some of whom also provide curative treatment. There is little standardisation in the training and practice of traditional healers. Knowledge is usually passed down from father to son or from 'teacher' to 'student'. Most healers are part-time practitioners; for a few it is a full-time occupation from which they earn a great deal, sometimes many times more than the salary of a doctor. Almost all healers require a fee or receive a donation from their patients. As most village people think of ailments not only in simple physical or psychological terms but in a physio-psycho-social totality, they may also use many treatment methods for any one illness."

As in other countries, many Tanzanian health personnel, and particularly politicians and local officials, believe that, with the increased availability of 'Western' medical services, traditional medicine will decline. At present, however, traditional healers continue to flourish, and they are still used by people who also use the available 'Western' health services. They continue to be sought out in towns as well as in the villages by a great number of people to deal with a variety of physical, psycho-social and spiritual problems. One study, undertaken in the late 1960s, estimated that there were some 700 traditional healers in Dar es Salaam alone and that most villages have at least one such healer.<sup>12</sup>

There are many reasons why people prefer to seek the help of traditional rather than **more** 'Western' health personnel. One of them is cultural: a different perception of illness and its aetiology. Another is the unavailability of certain services (e.g. psychiatry) and the frequent lack of drugs, at least until the initiation of the national essential drugs programme. It is significant that the healers are members of their patients' communities and have intimate knowledge of their lives and their cultural milieu.

It has been suggested that greater co-operation needs to take place



between 'Western' medical personnel and traditional healers. To establish such co-operation is difficult, however, since there is apprehension and arrogance as well as genuine interest on both sides. This interest is verified by the establishment of the Traditional Medicine Research Unit in 1974 and by having its new facilities within the **Muhimbili** Medical Centre officially opened by the then President Nyerere in 1981. By 1986 the unit was still relatively **small** but, in addition to its research activities, staff have helped to introduce the subject of traditional medicine to courses at the school. The Department of Psychiatry has also held a number of seminars with medical students and traditional healers who treat patients with psychological problems.

Some traditional healers already bridge the gap between traditional and 'Western' medicine by adopting elements of 'Western' medicine within their own practice. Many healers also refer some of their patients to the official health system. In a few instances villages have chosen traditional healers to be trained as community health workers.

## A WAY AHEAD: COMMUNITY HEALTH WORKERS

**After** signing the **WHO/UNICEF Alma Ata** Primary Health Care Declaration in 1978 which promises 'health for **all** by the year **2000**', Tanzania has had once again to re-examine its health policies. **Although** these policies had already long attempted to promote a primary health care approach similar to the one gaining international attention, a need for adjustment was acutely felt. It was realised that even if the existing units were to improve and become more comprehensive, two-thirds of the country's 8300 villages would remain without official health facilities. Economic and manpower constraints make it impossible to have a dispensary in every village within the foreseeable future.

Following the Alma Ata conference the primary health care guidelines worked out in the Ministry of Health, **AFYA**, in 1981 reaffirm Tanzania's commitment to primary health care and outline some new approaches for delivering health services. A particular emphasis is placed on the training and use of community health workers (or **promoters**).<sup>13</sup>

Following the guidelines, primary health care co-ordinating committees have been established at different administrative levels, with members representing not only health but a number of different sectors. At the national level a national health council and a national primary health care co-ordinating committee have been established. Regional and district primary health care teams are participating in seminars and workshops to improve the health delivery system as a whole.

Existing health services have also been strengthened. A national **expand-**

ed programme on immunisation (EPI) was launched in 1981, largely supported by DANIDA. A national essential drugs programme was initiated in 1983 with assistance from UNICEF and with major financial commitment from DANIDA. This programme has greatly improved the availability of drugs at rural dispensaries and health centres. A management and monitoring team is co-ordinating the essential drugs effort with the purpose of giving special attention to different drug needs in different parts of the country at different times of the year. These differences are still not reflected in the drug distribution system, but this may be a minor problem in relation to the potential danger of being dependent on one donor agency for a major health services component.

There has been a re-emphasis on research in order to 'rectify mistakes and strengthen the health sector'. The newly created National Institute of Medical Research and the Traditional Medicine Research Unit are both concrete examples of commitment to research, as are the operational research component of CEDHA and the Health Study Group of the Institute for Development Studies at the University of Dar es Salaam.

Perhaps the most prominent and promising aspect of the new primary health care approach is the increased training and use of community health workers, with a modest education, known as *Wahudumu wa Afya vijijini* (community health promoters). The national primary health care guidelines strongly urge that two such workers (a male and a female) should be established in every village now without an official health facility.

Community health workers have in fact been trained in Tanzania since the late 1960s, mainly at district hospitals for three to six months. Also many voluntary agencies trained their own community health workers. Although general guidelines existed there was little uniformity in the early programmes. Many of those trained were relatively young men and women who had been educated at least up to standard-seven level. They were voluntary workers who theoretically should receive some financial support from their own villages, but in most villages little was forthcoming. Supervision from both the village and the official health system was sporadic or non-existent. The community health workers often felt isolated. Drugs were usually in short supply. These and other problems prompted many of them to leave their work and only a small proportion of those trained remained active for long. Seventy-one of the national total of 104 District Medical Officers contacted in 1982 estimated that 1,050 community health workers were still active in their districts, even though most of those trained had stopped working.

The new national primary health care guidelines attempt to overcome some of the problems of the previous community health worker programmes. It is now proposed that a relatively standardised six months curriculum be followed in all parts of the country. The training should take place at

special training centres and folk development colleges rather than primarily in district hospitals, with two-thirds of the training time devoted to practical work at demonstration sites or in the trainees' home villages. Those selected are preferably to be older, married and more established than those trained in the past. Traditional birth attendants and traditional healers are especially mentioned as possible trainees. Emphasis is being given to the provision of preventive services and on ways of motivating villagers to carry out health promotive activities. The post is still not considered as part of the official health system and payment is to remain the responsibility of the villages, albeit with a possible subsidy being supplied by the government.

The tasks of the community health workers are defined as follows:

(i) To educate and guide the villagers in matters of health through practical demonstrations in collaboration with village leaders.

(ii) To demonstrate to villagers methods of food production, storage, preparation as well as proper nutrition.

(iii) To identify and enlighten villagers on those cultural aspects which are detrimental to health.

(iv) To provide services for mothers and children in collaboration with the traditional birth attendants.

(v) To provide curative and preventive services in collaboration with the traditional healers.

(vi) To manage a Village Health Post in the village.

(vii) To collect, analyse, utilise and report health and health-related information.

(viii) To evaluate health activities.

(ix) Home visiting.<sup>14</sup>

The need for supervision is recognised by preparing primary health care co-ordinators and setting up a co-ordinated primary health care system at divisional, district and regional levels, as mentioned above.

One of many issues which must be faced when attempting to establish the new primary health care system concerns the problem of the proper relation between curative and **promotive/preventive** health services. It is quite evident that what villagers struggling with disease want, and what they see as the main legitimate role of a community health worker, is the provision of curative services. Studies have also shown that most existing community health workers have been mainly engaged in curative activities.

In a project in Hanang district in which a voluntary agency prepared its community health workers almost exclusively for preventive services it was found that, with time, more and more of them spent an increasing amount of their time with curative rather than with preventive **services**.<sup>15</sup>

It may be true that preventive services, and especially water and sanitation projects, will make a greater contribution to the health of the people in

the long run, but Nordic and other donor agencies which are involved in such projects must also be sensitive to the villagers' more immediate needs. If curative services are not also available preventive and promotive efforts will have little effect and will create little interest.

## CONCLUSION

Tanzania has made a strong recommitment to a primary health care approach and has decided that the training and use of community health workers must continue to be central to the effort of equitable provision of health services. But it is also realised that this must be carried out in an integrated fashion in co-ordination with the rest of the health care system, and there is now a restructuring taking place towards that goal.

Despite well-known shortcomings Tanzania can point to a number of accomplishments in improving the living standards of its rural as well as its urban population. No matter how critical one may be of many specific efforts, this fact must not be overlooked. The recent primary health care recommitment shows that attempts are being made to learn from past experiences and to develop a realistic health care programme. A constant struggle remains, however, on how to move from words to deeds. It is still not clear to what extent, in terms of the proportion of the health budget, the government will (be able to!?) provide financial backing for the primary health care rhetoric.<sup>16</sup> Some of the recent accomplishments have been based on foreign aid, and a heavy reliance on a few donors is not without its dangers.

## NOTES

\*The information provided in this chapter, if not otherwise stated, has been obtained as a result of the joint Applied Village Health Worker Research and Evaluation Project – a cooperative effort between the Ministry of Health, Tanzania, the Muhimbili Medical Centre, the Evaluation and Planning Centre, the London School of Hygiene and Tropical Medicine and the Division of Research, NORAD. For a more complete discussion of the issues presented in this chapter see: Heggenhougen et al., *Community Health Workers: The Tanzanian Experience*, Oxford University Press, (forthcoming).

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## HEALTH SERVICES: OFFICIAL AND UNOFFICIAL

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# Abbreviations

AATP	<b>Arusha</b> Appropriate Technology Project
<b>AIB</b>	<b>Algemene Ingeniør</b> Bureau
BRALUP	Bureau of Resource Assessment and Land Use Planning (presently IRA)
CAMARTEC	Centre for Agricultural Mechanization and Rural Technology
CAN	Calcium ammonium nitrate
CBR	Crude birth rate
CCIC	Canadian Council for International Co-operation
CCM	<i><b>Chama cha Mapinduzi</b></i> (The revolutionary party)
CEDHA	Centre for Educational Development in Health at Amsha
<b>CFW</b>	Common Facility Workshop
<i>Chama</i>	<i><b>Chama cha Vikundi Vya Kiuchumi cha Akina Mama Coop Ltd</b></i>
CIDA	Canadian International Development Agency
<b>CMI</b>	<b>Chr. Michelsen</b> Institute
<b>CUSO</b>	Canadian Universities <b>Services</b> Overseas
CUT	Co-operative Union of Tanzania
<b>DANIDA</b>	Danish International Development Agency
DDC	District Development Corporation
<b>DERAP</b>	Development Research and Action Programme (part of <b>CMI</b> )
EAPH	East African Publishing House
EEC	European Economic <b>Community</b>
EPI	Expanded Programme of Immunisation
<b>ERB</b>	Economic Research Bureau
FAO	Food and Agricultural Organization, United Nations
FCF	<b>Fixed</b> Capital Formation
<b>FINNIDA</b>	Finnish International Development Agency
h	feet
<b>GAPEX</b>	General Agricultural Products Export Corporation
GDP	Gross Domestic Product
ha	hectare
<b>HADO</b>	Dodoma Region Soil Conservation Project
<b>HANDICO</b>	Tanzania Handicraft Company
<b>IBRD</b>	International <b>Bank</b> for <b>Reconstruction</b> and Development
ICOR	Incremental capital-output ratio
<b>IDA</b>	International Development Association
<b>IFAD</b>	International Fund for Agricultural Development
<b>ILO</b>	International Labour Organization
IMF	International Monetary Fund
IRA	Institute of Resource Assessment (formerly BRALUP)
KIDC	Kilimanjaro Industrial Development Centre
km	kilometre
m	million
m <sup>3</sup>	cubic metre
m <sup>3</sup> sw	cubic metre of solid wood
<b>MDB</b>	Marketing Development Bureau
mm	millimetre
NAFCO	The National Agricultural and Food Corporation
<b>NDC</b>	National Development Corporation
NESP	National Economic Survival Plan
<b>NMC</b>	National Milling Corporation
<b>NORAD</b>	Norwegian Agency for International Development
NSIC	National Small Industrial Corporation
<b>NUPI</b>	Norwegian Institute for International Affairs
OAU	Organization of African Unity
ODA	Official Development Assistance
OTC	Ox Training Centre
PHC	Primary Health Centre
<b>PMO</b>	Prime Minister's Office
<b>RADO</b>	Regional Agricultural Development Officer
RCW	Rural Craft Workshop
<b>RDD</b>	Regional Development Director
RIDEP	Regional Integrated Development Plan

## ABBREVIATIONS

Rs	Rupees (Indian)
RTC	The Regional Trading Company
<b>SADCC</b>	The Southern African Development Coordination Conference
SAP	Structural Adjustment Programme
SEK	Swedish crowns
<b>SIAS</b>	Scandinavian Institute of <b>African</b> Studies
SIDA	Swedish International Development Authority
SIDO	Small Industries Development Organization
SIP	Sister Industry Programme
<b>SIPU</b>	Small Industries Promotion Unit
<b>sq.</b>	square
t	tome
<b>TAMTU</b>	Tanzania Agricultural Machinery Testing Unit
<b>TANU</b>	Tanganyika African National Union
TAT	Tobacco Authority of Tanzania
TCA	Tanzania Cotton Authority
<b>TFA</b>	Tanganyika Farmers Association
<b>TFNC</b>	Tanzania Food and Nutrition Centre
<b>TFR</b>	Total fertility rate
<b>TIRDEP</b>	Tanga Integrated Rural Development Plan
<b>TRDB</b>	Tanzania Rural Development Bank
Tsh	Tanzanian shilling
TSP	triple super phosphate
<b>TTA</b>	Tanzania Tea Authority
UAC	Uyole Agricultural Centre
<b>UDSM</b>	University of <b>Dar</b> es Salaam
<b>UFI</b>	<b>Ubungu</b> Farm Implements Manufacturing Company
<b>UNDP</b>	United Nations Development Programme
UNICEF	United Nations Children's Fund
<b>UNIDO</b>	United Nations Industrial Development Organization
UPE	Universal Primary Education
US	United States
US\$	US dollar
<b>USAID</b>	<b>United</b> States Agency for International Development
<b>UWT</b>	<b>Umoja</b> wa <b>Wanawake</b> Tanzania (the national women organization)
VA	value added
<b>WEP</b>	<b>World</b> Employment Programme
f	British pound



# **TANZANIA**

## **crisis and struggle for survival**

**JANNIK BOESEN**

**CARL CHRISTIANSSON**

**KJELL J. HAVNEVIK**

**HARALD KRISTIAN HEGGENHOUGEN**

**FINN KJÆRBY**

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**TORBEN RASMUSSEN**

**RUNE SKARSTEIN**

**KNUD ERIK SVENDSEN**

**OLE THERKILDSEN**

**ULLA VUORELA**

**KAJ ÅRHEM**

This is one of the first comprehensive books on the crisis during the 1980s of the Tanzanian economy and society, including the manifestations of the problems and the responses to them at different levels. It also examines the long-term causes of the crisis and it endeavours to map ways ahead. The book is thus about both the crisis and about ways of coping with the situation. The contributors to the book are Nordic scholars of whom each has had several years of first-hand experience researching in Tanzania and on Tanzanian problems. In these articles they summarise key insights developed from their academic or administrative studies. These results are now available for all interested and informed readers in Tanzania and elsewhere.



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