Stockholm Studies in Human Geography
No. 25
Pastoralists and the environmental state

A study of ecological resettlement in Inner Mongolia, China

Qian Zhang
Abstract

China’s quest for sustainable development has given birth to a set of contested ‘ecological construction’ programmes. Focusing on ‘ecological resettlement’, a type of policy measure in a programme for restoring degraded grasslands, this thesis sets out a critical analysis in opposition to the dominant technical and managerial approaches to understanding environmentalisation. The aim is to draw out the politics of the formulation, implementation and effects of ecological resettlement at and across different scales. The study combines fieldwork, interviews, analysis of policy documents, and statistical analysis while theoretically, in addition to political ecology, it incorporates concepts and models from environmental governance, migration, and pastoralism studies. Environmentalisation is examined through three types of analysis: environmentalisation of the state, reshaping of state-society relations, and (re)territorialisation. A central theme is how local processes are linked to national considerations and how the local state acts as an intermediary between the central state and the pastoralists. The analysis exposes the practices that enabled the central state to define the problem of grasslands and devise interventions, illustrating the environmentalisation of the state. However, at the local level, incentives and interests defined by the political structure drove the developmental local state to pursue short-term-effective rather than sustainable practices. On the other hand, while the pastoral households responded to the projects with different strategies, their migration decisions suggested that social, economic and cultural considerations played a more important role than environmental concerns. Moreover, ecological resettlement has led to a significant change of Mongolian pastoralism. Land-tenure-based management further fragmented rangelands while the emergence of new social arrangements enabled migrant households to remain involved with pastoralism.

Keywords: Environmentalisation, political ecology, grassland degradation, migration decision-making, pastoralism, environmental migration, environmental governance, China.
## Contents

1. Introduction ......................................................................................................................... 19  
   Contesting a win-win scenario ......................................................................................... 23  
   Questioning the environmentalisation ............................................................................. 25  
   The research aim and questions ....................................................................................... 27  
   Clarifying the conception of ecological resettlement ...................................................... 34  
   Structure of the thesis ......................................................................................................... 38  

2. Situating ecological resettlement in China’s transition and transformation .......................... 40  
   Approaching the periphery ................................................................................................. 41  
      The wider contexts: Western China, Inner Mongolia and Xilingol League .................. 41  
      The origin: The pastoral villages of Xilitu Sumu .......................................................... 43  
      The destinations: Resettlement Village S and City Q ..................................................... 49  
   Engaging the periphery ........................................................................................................ 51  
      Governing from the central to the local ......................................................................... 51  
      Greening western China ................................................................................................. 54  
      Controlling sources of sandstorms to Beijing ............................................................... 55  
   Conclusion ............................................................................................................................. 59  

3. A political ecology study of China’s environmentalisation ..... 61  
   Approaching the authoritarian environmental state ......................................................... 62  
   Proposing a political ecology study of China’s environmentalisation ............................ 65  
      Changing ways of conceptualising and analysing power in political ecology ............... 66  
      Construction of environmental knowledge ..................................................................... 77  
      Multi-scalar analysis of environmental issues ............................................................... 79  
   Conclusion ............................................................................................................................. 80  

4. Methodological considerations ......................................................................................... 82  
   The general methodological approach ............................................................................. 82  
   Secondary data collection ................................................................................................. 84  
   Primary data collection ..................................................................................................... 87  
      Fieldwork ........................................................................................................................ 87  
      Participant observation ................................................................................................. 89  
      Interviews ....................................................................................................................... 90
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methodological reflections</td>
<td>94</td>
</tr>
<tr>
<td>Mixed methods</td>
<td>94</td>
</tr>
<tr>
<td>Reflexivity</td>
<td>95</td>
</tr>
<tr>
<td>Conclusion</td>
<td>99</td>
</tr>
<tr>
<td>5. Environmentalising grassland degradation</td>
<td>100</td>
</tr>
<tr>
<td>Rationalising a governable environment</td>
<td>100</td>
</tr>
<tr>
<td>Curtailing ecological threats and constructing an ecological security</td>
<td>101</td>
</tr>
<tr>
<td>shelter</td>
<td></td>
</tr>
<tr>
<td>Reasoning about the causes of the ecological threat</td>
<td>104</td>
</tr>
<tr>
<td>Constructing ecological knowledge</td>
<td>107</td>
</tr>
<tr>
<td>Acting on the environment: technologies of ecological resettlement</td>
<td>112</td>
</tr>
<tr>
<td>Developing western China: Modernisation, industrialisation and</td>
<td>112</td>
</tr>
<tr>
<td>urbanisation</td>
<td></td>
</tr>
<tr>
<td>Zoning and re-organisation of technocratic fixes</td>
<td>117</td>
</tr>
<tr>
<td>Governing grassland in the Chinese way</td>
<td>122</td>
</tr>
<tr>
<td>Central supervision and decentralised decision-making</td>
<td>123</td>
</tr>
<tr>
<td>Restructuring and conflicts of interest</td>
<td>125</td>
</tr>
<tr>
<td>Offering fiscal transfers</td>
<td>127</td>
</tr>
<tr>
<td>Quantifying environmental governance</td>
<td>131</td>
</tr>
<tr>
<td>Conclusion</td>
<td>133</td>
</tr>
<tr>
<td>6. Constructing an ecological security shelter in Xilitu Sumu</td>
<td>136</td>
</tr>
<tr>
<td>Materialising the construction of an ecological security shelter</td>
<td>136</td>
</tr>
<tr>
<td>Developing a modern dairy industry in Resettlement Village S</td>
<td>136</td>
</tr>
<tr>
<td>Transforming pastoralists into urban citizens in City Q</td>
<td>140</td>
</tr>
<tr>
<td>Strategies of moving the pastoral households</td>
<td>142</td>
</tr>
<tr>
<td>The local state’s motivations behind continued developmental attempts</td>
<td>144</td>
</tr>
<tr>
<td>Accomplishing political tasks and demonstrating political achievements</td>
<td>144</td>
</tr>
<tr>
<td>Receiving fiscal transfers</td>
<td>146</td>
</tr>
<tr>
<td>Promoting business interests</td>
<td>148</td>
</tr>
<tr>
<td>Conclusion</td>
<td>149</td>
</tr>
<tr>
<td>7. Encountering household (non)migration strategies</td>
<td>151</td>
</tr>
<tr>
<td>The first project: “We were promised we would get rich”</td>
<td>152</td>
</tr>
<tr>
<td>The second project: household (non)migration strategies</td>
<td>155</td>
</tr>
<tr>
<td>Rejection</td>
<td>156</td>
</tr>
<tr>
<td>Accommodation</td>
<td>159</td>
</tr>
<tr>
<td>Negotiation</td>
<td>161</td>
</tr>
<tr>
<td>Manipulation</td>
<td>163</td>
</tr>
<tr>
<td>Linking household-level factors to participation decisions</td>
<td>166</td>
</tr>
<tr>
<td>Number of sub-households</td>
<td>167</td>
</tr>
<tr>
<td>Size of household rangeland</td>
<td>169</td>
</tr>
<tr>
<td>Size of household</td>
<td>170</td>
</tr>
<tr>
<td>Performance of herd management</td>
<td>172</td>
</tr>
</tbody>
</table>
List of figures

Figure 1. The location of the study area – Xilitu Sumu. .......................... 21

Figure 2. Annual precipitation anomaly in Xilitu Sumu, 1961-2009. ................................................................................................. 45

Figure 3. Settlements in the pastoral villages. ................................. 48

Figure 4. The territorial levels of the state administration. .......... 52

Figure 5. The functional units of the state administration related to ecological resettlement. ......................................................... 53

Figure 6. The geographical scope of the Beijing-Tianjin Sandstorm Source Control Programme. ..................................................... 57

Figure 7. Propaganda on an ecological resettlement village in Xilingol League. ........................................................................... 114

Figure 8. Demonstration sign in an ecological resettlement village in Xilingol League. ................................................................. 114

Figure 9. Ecosystem services zoning in Inner Mongolia. ................. 119

Figure 10. Illustrative map of zoning in the Beijing-Tianjin Sandstorm Source Control Programme. ................................................. 121

Figure 11. Zoning in the Weifeng Zhuanyi Strategy. .................... 121

Figure 13. Milk collection station in Resettlement Village S. ....... 137

Figure 12. The housing pattern in Resettlement Village S. ........... 137

Figure 14. A conceptual model of household migration decision-making in ecological resettlement. ............................................ 180

Figure 15. Precipitation anomaly by decade in Xilitu Sumu, 1961 to 2009. ...................................................................................... 186

Figure 16. An illustrative map of the rangeland management plan in the second ecological resettlement project. ............................... 194
Figure 17. Different rangeland rights certificates issued to an interviewed household over time..........................198

Figure 18. Changing ways of mapping a household’s rangeland plot rangeland contracts and certificates over time. ..................198

Figure 19. Annual income structure of an average resettled household, 2009. .................................................................209

Figure 20. Unemployment rate of resettled pastoralists by sex, 2007. ..................................................................................211

Figure 21. Employment of resettled pastoralists at working age, 2009. ...........................................................................212

Figure 22. Price index of the produce, 2002-2010. ......................212
List of tables

Table 1. Distribution of interviewed households. .........................................91

Table 2. China’s key supervisory plans of governing the environment since the 2000s. .................................................................124

Table 3. Ecological resettlement structured by the political system. .......................................................................................................126

Table 4. Large-scale environmental programmes in Western China. ....................................................................................................129

Table 5. Investments in the key environmental and social programmes in Xilingol League. ..............................................................130

Table 6. Main reasons for (not) participating in the first resettlement project. .....................................................................................152

Table 7. Number of sub-households and participation decisions, interview sample. .................................................................................168

Table 8. Number of sub-households and participation decisions, register data sample. .............................................................................168

Table 9. Size of household rangeland and participation decisions, interview sample. ................................................................................170

Table 10. Size of household rangeland and participation decisions, register data sample. ........................................................................170

Table 11. Size of household and participation decisions, interview sample. .........................................................................................171

Table 12. Size of household and participation decisions, register data sample. ......................................................................................171

Table 13. Household pastoral income level and participation decisions, interview sample. .................................................................172

Table 14. Household pastoral income level and participation decisions, register data sample. ...............................................................173
Table 15. Number of labourers and participation decisions, interview sample. .......................................................... 174

Table 16. Number of labourers and participation decisions, register data sample. .......................................................... 174

Table 17. Number of students and participation decisions, interview sample. .......................................................... 175

Table 18. Number of students and participation decisions, register data sample. .......................................................... 175

Table 19. Household age structure and participation decisions, interview sample. .......................................................... 177

Table 20. Strategies for coping with disasters and the challenges of continued practices. .................................................. 189

Table 21. Annual income levels of resettled households. ............ 210
It is an emotional moment to write down the acknowledgements by reviewing the long journey to complete this thesis. This thesis would have never existed without the generous supports from many people and I would like to take the opportunity to thank all of them. I begin by extending my gratefulness to the interviewed pastoralists, my research assistant, the drivers, and the local officials for their facilitations during the fieldwork. In particular, I appreciate the pastoralists sharing of their experiences and knowledge for adding great empirical value to this study.

I am greatly indebted to the Department of Human Geography at Stockholm University. Thanks to the decision made by the department to employ me in the first place. Otherwise, it would have been impossible for me to work in this nice environment, to meet the great people, and to learn to become a geographer. The department has also provided all the needed resources to support my study until the end. I have had four great supervisors, Bo Malmberg, Andrew Byerley, Xiaoyi Wang and Jenny Cadstedt, who have used their different areas of expertise to help with shaping the ideas presented in this thesis. Thank you, Bo Malmberg, for the genuine interest in my research, the strong belief in its value and the extensive support to make me finish it. Your openness to combined methods of studying migration encourages me to explore my own nuanced approach. Your questions and challenges were very important for me to clarify and scrutinise my ideas. Your influence on me is not only about how to do research but also the enthusiasm and curiosity about research. Our discussions and experiences during your visit to my fieldwork also mark an important page in this PhD education. Thank you, Andrew Byerley, for being willing to become my supervisor in the later stage of the work. You have given a great guidance to deepening the theoretical thoughts of this thesis. I really appreciate that you tried hard to make time for reading the different draft versions and that you always have encouraged me to believe in the potential significance of this work. Thank you, Xiaoyi Wang, for generously taking me as a member of your research team, ‘Rural Environment and Social Studies’ at the Chinese Academy of Social Sciences, to visit your study area and to participate in conferences. I have had the most interesting discussions with you about the Chinese perspectives on my research topic in every occasion of our meeting throughout the years. I am also very grateful to your reading of and construc-
tive comments to the final seminar manuscript. Thank you, Jenny Cadstedt, for helping to develop the initial research design of the project and for your detailed reading of the writings. It is also very kind of you to keep the concern about my progress. I deeply appreciate our friendship.

I am grateful to Agnes Andersson Djurfeldt at Lund University, Mattias Burell at Uppsala University, and Michael Nielsen at Stockholm University for acting as opponents to read my manuscripts and offer constructive comments at the final seminar, half-time seminar and first year seminar respectively. Thanks to Mats Widgren at Stockholm University for your invaluable comments on different draft versions. Thanks to Christopher Kennard at Anchor English who proofread the text and who patiently resolved the linguistic problems one by one. I also would like to thank Peter Claësson for advising on the statistical methods, Johan Cederström for advising on the technical issues, and Xueqiong Wei for producing one map in this thesis. Along the way of doing this PhD, I have also received extensive supports of researchers from various parts of the world. Thanks to the supervisor of my master thesis, Ivar Bjørklund at University of Tromsø, and the opponent of my master thesis, Gunnvor Berge at the Norwegian University of Life Sciences, for encouraging me to pursue a PhD. I was also lucky to have the opportunities to draw insights from inspiring discussions with colleagues at Stockholm University including Mats Widgren, Lowe Börjeson, Brian Kuns, Peter Kinlund, Anders Wästfelt, Ilda Lindell, Annika Dahlberg and Wilhelm Östberg. My sincere thanks go to friends Ying Li and Guoyi Han at Stockholm Environmental Institute for helping me to map my research field and for their moral support. All the researchers who commented on the published papers and conference papers, I appreciate your contribution along the way. Thanks to François Gemene at the Institute for Sustainable Development and International Relations (IDDRI) and the EU-project of ‘Environmental Change and Forced Migration’ (EACH-FOR) for approaching me to do a case study in the early stage of my research. This was the starting point of my interest to go deep into the debate on environmental migration. Thanks to Irene Bain at Ford Foundation, Fachun Du at the Chinese Academy of Social Sciences and Troy Stenberg at Oxford University for facilitating the publication of the paper in the journal of Nomadic Peoples. I appreciate Ivar Bjørklund for recommending me to the project of ‘Pastoralism in China: National Policies and Local Practices’ and my gratitude also goes to the organizer of this project Åshild Kolås at Peace Research Institute (PRIO) for inviting me to write a chapter in the book of this project. In addition, during the periods of fieldwork, a number of individuals have provided generous guidance and assistance. Thanks to Xiaoyi Wang’s research team, especially Qian Zhang, for having deep discussions on pastoralism in her study area.

I would like to thank all my friendly colleagues at the Department of Human Geography who have together made a supportive environment to make me feel at home. Thanks to Ann-Charlotte Wistedt and Iris Claësson for your
patient explanation of the Swedish systems and for providing administrative facilitations whenever needed. I was lucky to get Annika Björklund as the mentor who has been very helpful in providing guidance by sharing her experiences and views about conducting a PhD research. Thanks to the old and new colleagues in the migration research group, especially Charlotta Hedberg, Estelle Conraux and Natasha Webster, Linn Axelsson, Eva Andersson, Karen Haandrikman and Thomas Wimark for your inspiring ideas about migration and your input into my research. Thanks to the old and new PhD colleagues for enriching the PhD life and for making the journey not lonely. In particular, thanks to Estelle Conraux, Ida Andersson, Natasha Webster, Linn Axelsson, Brian Kuns, Beibei Li, Xueqiong Wei, Jenny Fredby and Tola Gemechu for your supports and friendship. Thanks to Michael Nielsen, Linn Axelsson, Kristina Westermark, Kristina Trygg, Maja Lagerqvist and Annika Björklund for bringing the enjoyable moments in the PhD group activities and conference trips. Thanks to Martina Caretta and Pontus Hennerdal for making the PhD life healthier by playing badminton together.

My appreciation also goes to the financial support from ‘Axel Lagrelius fond för geografisk forskning’, ‘Carl Mannerfelts fond’, ‘Knut och Alice Wallenbergs Stiftelse’, and the Forum for Asian Studies at Stockholm University, for covering expenses for fieldwork, conferences and proofreading. I also thank the Nordic Institute of Asian Studies for offering a travel scholarship to Copenhagen for using its research resources.

Finally, my deepest appreciation goes to my friends and family. I appreciate the sharing of joys and pains over the years with my dear friends Xi Chu, Hsien-Fei Huang, Jocelyn Andersson, Chenzhi Xu, Iris Sommarsby and Jinsong Wang. Thanks to my parents for being always open-minded and supportive to my choices. Without their love and support, it would be impossible for me to arrive at where I am today. Thanks to my sister for being there for me whenever there is a need. I am most grateful to my partner Daniel Stenvall and his whole family who have done everything to support me to complete this thesis. Thanks to Daniel for helping me to rebuild confidence, courage and determination to reach this finish line and thanks to Algot for giving me a balance between work and life.

Qian Zhang
Stockholm, March 2015
## Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCICCD</td>
<td>China National Committee for the Implementation of the UN Convention to Combat Desertification</td>
</tr>
<tr>
<td>HRS</td>
<td>Household Responsibility System</td>
</tr>
<tr>
<td>IMAR</td>
<td>Inner Mongolia Autonomous Region</td>
</tr>
<tr>
<td>IMDRC</td>
<td>Inner Mongolia Autonomous Region Development and Reform Commission</td>
</tr>
<tr>
<td>IMGO</td>
<td>Inner Mongolia Autonomous Region Government Office</td>
</tr>
<tr>
<td>IMSB</td>
<td>Inner Mongolia Statistics Bureau</td>
</tr>
<tr>
<td>MA</td>
<td>Ministry of Agriculture</td>
</tr>
<tr>
<td>MEP</td>
<td>Ministry of Environmental Protection</td>
</tr>
<tr>
<td>NDRC</td>
<td>National Development and Reform Commission</td>
</tr>
<tr>
<td>SCWRDO</td>
<td>State Council Western Region Development Office</td>
</tr>
<tr>
<td>SEPA</td>
<td>State Environmental Protection Administration</td>
</tr>
<tr>
<td>SFA</td>
<td>State Forestry Administration</td>
</tr>
<tr>
<td>SGAQSIQ</td>
<td>State General Administration of Quality Supervision, Inspection and Quarantine</td>
</tr>
<tr>
<td>UNCCD</td>
<td>United Nations Convention on Combating Desertification</td>
</tr>
<tr>
<td>UNFCCC</td>
<td>UN Framework Convention on Climate Change</td>
</tr>
<tr>
<td>XLEO</td>
<td>Xilingol League Ecology Office</td>
</tr>
<tr>
<td>XLGSMR</td>
<td>Xilingol League Grassland Supervision and Management Bureau</td>
</tr>
<tr>
<td>XLPC</td>
<td>Xilingol League Party Committee</td>
</tr>
<tr>
<td>XLSB</td>
<td>Xilingol League Statistics Bureau</td>
</tr>
</tbody>
</table>
1. Introduction

This thesis is about ecological resettlement in the pastoral context of western China. Ecological resettlement is my translation of the Chinese term ‘Shengtai Yimin’. Resettlement is not new but is associated with varied motivations and rationales in the contemporary history of China. Between the 1950s and 1970s, resettlement was extensively applied to relocate people across the country, from urban to rural areas, and from central to peripheral areas. At that time, engineering of the population was done primarily for geopolitical, military and ideological reasons. Resettlement since the 1980s has mostly been related to large-scale infrastructure construction projects, pursuing economic development, and is often called involuntary resettlement. A well-known example is the construction of the Three Gorges Dam (Cheng 2006; Duan and Steil 2003; Fruggle et al. 2000; Heggelund 2004; McDonald 2006; McDonald and Michael 2002; Meikle and Walkter 2000; Tan 2008; Wilmsen et al. 2011).\(^1\)

However, the recent applications of resettlement in China have become associated with new policy objectives. Besides Yidi Fupin Yimin (‘Non-local Poverty Alleviation Resettlement’ in English and briefly called ‘Anti-poverty Resettlement’ in the rest of this study) for rural poverty reduction (Merkle 2003; Xue et al. 2013), Shengtai Yimin names a number of resettlement schemes in large-scale environmental programmes which aim to restore the environment, mostly in western China. Empirical studies have shown the impact of ecological resettlement projects on ethnic minorities, especially pastoralists in western China, including Mongolian herders in Inner Mongolia (Chu and Meng 2005), Tibetan herders in the Three-River Headwater region (Wang et al. 2010), and Ukur herders in Xinjiang (Shi et al. 2007).

In one of the national guiding environmental policy documents, Several Opinions on Improving the Measures of the Returning Farmland to Forestry Policy, ecological resettlement is addressed as a restrictive measure to move out “people living in ecologically significant areas, ecologically fragile areas and areas losing basic subsistence conditions” (State Council of China 2002, Guofa 2002 No. 10). Although resettlement has long been used in environ-

\(^1\) According to Fruggle and Smith (2000), 45.1 million people have been displaced by development projects in China since 1949.
mental management in China, for example, moving people out of affected areas after natural disasters (Elvin 2004), the current ecological resettlement, instead of being responsive, is a proactive policy measure to adjust the human relationship to the environment. Empirical cases show that some of the environmental problems that ecological resettlement aims to address are classical conservation issues such as wildlife, forestry and biodiversity conservation (see e.g. Foggin 2008; Xie 2010; Xinjiletu 2005c). From an international perspective, this reminds one of the displacement and resettlement experiences related to the construction of national parks and natural reserves (Cernea and Schmidt-Soltan 2006; Chatty and Colchester 2002; Hendriks 1989; Schmidt-Soltan 2003). However, other empirical cases of ecological resettlement also aim to address other types of environmental problems such as grassland degradation, soil erosion, water shortages, drought and landslides (see e.g. Bao and Xun 2007; Dickinson and Webber 2007; Rogers and Mark 2006; Tan and Wang 2004). These problems are thought likely to become increasingly stressful in the context of climate change. Similar international examples are few except for in Ethiopia, where resettlement schemes have continued moving people from the highlands to the lowlands since the 1970s until the present to cope with droughts and famines (Baker 1995; Gebre 2002; Pankhurst and Piguet 2009). Nevertheless, there seems to be a rising international interest in using resettlement for adapting to environmental change (Black et al. 2011a; Sherbinin et al. 2011).

Environmental problems are time- and space/place-specific. This study chooses to focus on a specific type of environmental problem, grassland degradation, to look into the relationship between ecological resettlement and the Chinese state’s transformative way of governing the environment. In my study area, Xilitu Sumu (‘sumu’ means township level administration in Mongolian), in the Xilingol League (‘league’ means county level administration) of the Inner Mongolia Autonomous Region of China (briefly called Inner Mongolia in the following text) (see the location in Figure 1), a small township located about 400 kilometres to the north of the national capital Beijing, two ecological resettlement projects were implemented, first in 2001 and then in 2006 to subsidise pastoral households to move off their home rangelands, which were identified as severely degraded grasslands. In both of the projects in my case study, by signing resettlement agreements for five years, participant pastoral households were obliged to stop using their rangelands for herding during the agreement period and in return they received monetary compensation, subsidies, favourable policies and other forms of support from the state to start a new life in the urban areas. These projects are subordinated to a large-scale national environmental programme, the Beijing-Tianjin Sandstorm Source Control Programme. Several consecutive sandstorms\(^2\) swept Beijing between 2000 and 2002, and were also reported

\(^2\) They are also often called dust storms.
to negatively affect the wider East Asia region (Chen and Tang 2005; Kar and Takeuchi 2004) and even the United States (NASA 2001). The perceived severity of the sandstorms drove the state to take urgent action to handle the issue. The Programme was thus launched with the objective of reducing the occurrence of sandstorms in North China\(^3\) and especially the national capital Beijing, basically through improving the identified source of sand - the degraded land cover.

Moving people off the land is considered by the state to be one of the most effective approaches for reducing human pressures on land cover. In the first phase (2001-2012)\(^4\) of the Beijing-Tianjin Sandstorm Source Control Programme, it was claimed that more than 170,000 rural people were moved through ecological resettlement during the ten years (Xinhua News Agency 2013). In Xilingol League, where there is a high percentage of grassland and Mongolian pastoral populations, the prefecture-level government was said to set a goal of enclosing eight per cent of its grasslands for

\(^3\) North China (Huabei in Chinese) is a geographical area of China, which refers to north China with the heartland being the North China Plain. It is defined by the national government to include the municipalities of Beijing and Tianjin, the provinces of Hebei and Shanxi, and the central part of the Inner Mongolia Autonomous Region.

\(^4\) The programme was initially planned to be from 2001 to 2010. At the end, it was extended for two extra years in order to fully implement the plan.
ecological resettlement (Brown et al. 2008:248), nearly 50,000 rural people (more than eight per cent of the total rural population in the league⁵), mostly pastoralists, were claimed to have been moved through ecological resettlement under the Beijing-Tianjin Sandstorm Source Control Programme (Xilingol League Government 2013). In addition to that, regional officials claimed that the total livestock number of the league had been reduced from 18 million in 2000 to 12 million in 2012 (China Weather Net 2013). In my case study area, through implementing two ecological resettlement projects, nearly half of the total of more than four hundred households have moved out of the gachas (‘gacha’ means village in Mongolian) and their rangelands, which represent about half of the total size of the villages, have been enclosed. Nevertheless, the quantity of livestock does not seem to have dropped according to the sumu government’s statistics. Above all, quotes for the numbers of people resettled, the size of enclosed lands and the reduction in livestock numbers are widely found in government reports and news reports, which are used to testify to the progress of environmental management.

On top of the above, it should be noted that development, or improving the living standards of people, is always addressed as a dual objective along with ecological restoration. A win-win scenario is set up by political and popular discourses between ecological restoration and resettled people becoming better off. Accordingly, another two types of figure are often highlighted to argue for the achievements – the amount of finance that has been given to the resettled people, either in terms of subsidies or materials such as housing, and improvements to vegetation in terms of height, coverage and productivity. In my case, a win-win scenario between restoration of degraded rangelands of original homes and better living standards of resettled pastoralists in destination is envisioned and discoursed. The local government’s reports claim that the state had spent on average 180,000 yuan⁶ on each household by 2008 and the coverage of grasslands within the project area increased by 7 to 20 per cent in 2010 compared to 2001. However, my research in the field greatly challenges the win-win discourse. Empirical research on ecological resettlement projects in other parts of China has also been debated. Before introducing my perspective of questioning, I will conduct a short literature review in the next section to describe the main positions in existing research.

⁵ The size of the rural population in Xilingol League was more than 585,000 in 2000 according to the 5th National Census 2000.
⁶ Yuan is the basic unit of Chinese currency. 1 yuan equals approximately 0.16 US-dollars.
Contesting a win-win scenario

Accounts of the processes and outcomes of ecological resettlement projects demonstrate two groups of contrasting views. One group of positive accounts, together with the official accounts, suggests that the win-win scenario is taking place. The official grassland monitoring reports claim that vegetation in the project areas is much better than in non-project areas in terms of height, coverage and productivity. Empirical studies argue that the income and material wellbeing of the resettled people have been raised. Although they also acknowledge the existence of problems in the specific projects, most Chinese researchers suggest that the negative outcomes are temporary and they can be solved through technical and managerial improvements, for instance, increasing provision of compensation (Zhang 2007), modifying assessment criteria (Hong 2006), adding social integration evaluation (Li 2007), and institutionalizing rules for regulating implementation (Zhu and Shi 2007).

In contrast, the other group of negative accounts is critical. They draw attention not only to the planning problems and rationale behind the ambitious schemes, but also to the negative economic, social and cultural consequences for the wellbeing of the affected people (Bao and Meng 2005; Bao and Xun 2007; Dickinson and Webber 2007; Du 2009, 2012; Foggin 2008, 2011; Gegengaowa 2006; Liu 2002; Sein and Zhang 2009; Ptackova 2012; Taishi and Foggin 2011; Taogesi 2007; Xun 2006; Xinjiletu 2005a; Yan 2005; Zhao 2006). Despite the increase of income due to compensation, the rise of non-farming income, and improvements of material wellbeing in some cases, inequality is on the rise at the village level, the sustainability of the new livelihood models (West 2009) and having a continued source of funding (Tan and Wang 2004) are questionable, and the impoverishment trend is more prevalent in most cases. In addition to the economic dimension, the social and cultural challenges, such as the protection of the rights of the affected people (Shi et al. 2007), identity recognition (Li et al. 2006a), social and cultural adaptation (Liu 2007; Taogesi 2007), societal integration (Li et al. 2006b; Ma 2007; Tan and Wang 2004), social equity (Wuligeng 2006) and community building (Yu 2004), are especially highlighted due to the relevance to the ethnic minority groups. Return migration is also addressed as a sign of failure of some projects (Du 2009; Qi 2006; Taogesi 2007).

Critics also question the ecological grounds of the projects. Yeh (2010) questions the facts regarding degradation and its causes in the project areas.

---

7 The annual National Grassland Monitoring Report since 2005 has always claimed that vegetation in the project areas is better out of the areas in terms of coverage, height and productivity. For example, the National Grassland Monitoring Report 2013 (MA 2013) claims that the coverage rate of vegetation within the areas classified into the Beijing-Tianjin Sandstorm Control Programme is 12 per cent greater than the areas out of the programme, the height is 35.9 per cent higher and the productivity is 68.5 per cent more.
Together with Dalintai (2003), and Wu and Bao (2013), they further contest whether enclosure is an appropriate measure for restoring grasslands due to the non-equilibrium nature of the local ecosystems. Nevertheless, Gegengaowa (2006) also argues that to enforce the enclosure measure is economically and socially difficult, and Xun and Bao (2008) argue that there was a lack of political incentives for enforcing it locally. Moreover, Kodama (2005), West (2009) and Xu (2001) draw attention to the new environmental risks for the destinations such as overuse of underground water through adopting new practices such as irrigation farming. They suggest that resettlement projects have not solved problems but only shifted environmental and social problems between places. The most extreme view is that there is another implicit agenda of the state than conserving the environment, namely to assimilate the ethnic minorities, and resettlement is a mechanism (Human Rights Watch 2007).

The above criticisms of the planning and the consequences for the affected people are in several ways similar to those in the international studies of development-oriented resettlement.\(^8\) However, interestingly, instead of being related to the critical group of international studies, international interests in ecological resettlement so far stem rather from a technical perspective to look into how planned relocation could work as a policy response to climate change in the future (Sherbinin et al. 2011). This, on the one hand, is in the context that in recent years, international attitudes among donors, policymakers and some scholars seem to have become increasingly positive towards resettlement in relation to development and climate change. Empirical studies argue that resettlement is a viable development tool which is able to generate positive outcomes if participatory, bottom-up and voluntary approaches are incorporated (Chaterjee 2009; Karanth 2007; Petit 2008); and the Chinese state has been particularly praised by international donors as a good example of following the ‘Resettlement with Development’ model in involuntary resettlement projects (McDonald and Webber 2002). On the other hand, an embrace of resettlement in relation to addressing climate change has been driven by a shifting way of talking about migration from ‘environmental refugee’ to ‘migration as adaptation’ and a shifting view of seeing migration from a problem to a solution. International organisations nowadays show a pro-attitude to organised migration or resettlement.\(^9\) In

---

\(^8\) For example, the Ujamaa villagisation programme in Tanzania (McCann 1996; Scott 1998), the transmigration resettlement scheme in Indonesia (Elmhirst 1999; Li 2007), and the FELDA resettlement scheme in Malaysia (Fold 2000).

\(^9\) For instance, the director general of International Organisation of Migration, William Lacy Swing claims that, “well-managed migration can be an effective climate change adaptation strategy, an innovative response that empowers migrants and strengthens communities.” (Gemenne et al. 2012). The Cancún agreement further promotes “measures to enhance understanding, coordination and cooperation with regard to climate change induced displacement, migration and planned relocation” (UNFCCC 2011:5).
turn, a trend has emerged in the Chinese state’s discourses to reframe ecological resettlement in a similar way as “an adaptation strategy to climate change in the regions that are vulnerable to climate change impacts” (Tan 2011) and ecological resettlement has also been written into the National Climate Change Adaptation Strategy (NDRC 2013, Fagai Qihou No. 2252). Although the shifting discourse has received increasing criticism for the underlying neoliberal logic (Bettini 2014; Felli and Castree 2012), such debate has not yet been extended to discussions in the Chinese context.\footnote{Researchers’ positions are divided regarding ‘migration as adaptation’. Proponents (Black et al. 2011; McLeman and Smiths 2006; Sherbinin et al. 2011) argue that organized resettlement would become a virtually unavoidable response in some regions of the world and a support to communities which lack of the resources to migrate by themselves. Middle-range scholars stress that resettlement should only be used as the last resort and in cases where in situ adaptation is impossible (Barnett and Webber 2011). Critical researchers such as Felli and Castree (2012) condemn the fact that the logic and language of the current adaptation approach of migration to environmental change are just consistent with the wider neoliberal views in contemporary global environmental governance; and migration means “people’s incorporation into waged labour abroad or in other parts of their home country” (3), which is consistent with the neoliberal practice of constituting a new global reserve army of labour.}

**Questioning the environmentalisation**

The above contested views suggest that ecological resettlement is a complex issue with both significant policy implications and important economic, social, political, cultural and environmental consequences. But at the same time, the studies suggest that this new subject still lacks clear understanding of the role the environment has in it. My departure in studying ecological resettlement was from thinking about a profound problem being identified both in my own field work and other studies. That is why, contrary to the win-win scenario, there is always a gap between what is envisioned, attempted and promised by the politicians and what is accomplished in reality. Moreover, it is why the well-meaning plans have always resulted in unintended consequences, “something that is neither deliberately created nor anticipated, but is exactly the reverse of the original intention of a particular social action or public policy” (Jing 2007:147), such as impoverishment and new ecological problems. The gap and the unintended consequences in turn demand further interventions even though it is uncertain whether the persistent will to improve will lead to improvement or new and unintended consequences.

These features in the sequence in ecological resettlement are nevertheless not unique but they remind one of similar stories, for instance, what Tania Li calls “the parasitic relationship between the persistence of the will to improve and the unintended shortcomings and failures” (2007:1) in the improvement schemes of Indonesia, and when James Ferguson says that “‘fail-
ure’ appears to be the norm” (1994:8) in the “constructed development industry” of Lesotho. Both Li and Ferguson ascribe the root causes of the failures to the technical ways of thinking and doing, the approach of “rendering technical” a set of political questions (Li 2007:7). By doing so, the structural conditions that create the troubles in the first place are ignored; and accordingly whenever interventions failed, and problems became worse, there was always a need for more interventions (ibid.:122-123). In the case of Lesotho, the apparatus of planned development works as an “anti-politics machine” which “insistently repose(s) political questions of land, resources, jobs, or wages as technical ‘problems’ responsive to the technical ‘development’ intervention” and construct the country that “bears little relation to prevailing realities” (Ferguson 1994:270). The analytical insights from their works draw my attention to the need to unpack the role of power/knowledge and the rationalities it promotes behind ecological resettlement, to expose what it is, how it works and why.

However, what makes ecological resettlement different from the above development projects is a strong environmental dimension, in terms of reasons, discourses and consequences. I argue that it is crucial to relate the examination of ecological resettlement to the state’s transforming ways of governing the environment or environmentalisation. Ecological resettlement has been part of the state-led greening actions since the 2000s. These actions in the form of programmes aim to “restore the ecological functions of the degraded ecosystems” through “ecological construction” (Shengtai Jianshe in Chinese) (Wang et al. 2010). In addition to these actions, the state has generally been active in carrying out environmental reforms: creating new institutions and regulations, implementing green technologies, and tolerating more non-state actors in their green activities (Ho 2001c, 2006; Carter and Mol 2007). Meanwhile, the state uses green discourses such as ‘green development’, ‘sustainable development’ and ‘an environmentally concerned growth model’ to address the green actions in political texts. These actions and discourses are in sharp contrast to the old image of a passive state facing mounting environmental problems (Economy 2004; Smil 1993). Do the above new green actions and discourses signify a new role of the state in governing the environment? Scholars have different views. While some re-

11 Different sources identify different scopes of the national large-scale environmental programmes. According to Wang et al. (2010), the main large-scale conservation programmes since the 1990s include the Key Shelterbelt Construction Programme, the Beijing-Tianjin Sandstorm Source Control Programme, the Wildlife Conservation and Nature Reserve Development Programme, the Forest Eco-Compensation Programme, the Natural Forest Conservation Programme and the Grain to Green Programme. According to Yeh (2009), the large-scale environmental projects include the Sloping Land Conversion Programme, the Natural Forest Protection Programme, the Converting Pastures to Grassland Programme, Ecological Migration and an accelerated programme of Nature Reserve Declaration.
searchers have depicted the state’s actions as reactive and unsystematic, more have raised notions such as “the greening of the state”, “environmental state” and “environmentalisation” to suggest that a highly rational, strategic and fundamental process of transformation is taking place behind the scenes (Cann et al. 2005; Chen 2013; Economy 2006; Fridman 2008; Mol 2006; Yeh 2005, 2009; Zhang et al. 2007). Such debate regarding the macro level changes has nevertheless hardly been integrated into the analysis of ecological resettlement. Being focused on reporting the micro-processes of individual cases, most existing studies of ecological resettlement only take the wider changes as background and their analytical significance is underestimated. This study is instead intended to show how the formulation, implementation and effects of ecological resettlement have been enabled by the processes of environmental politics at different scales and across scales.

Moreover, in the analysis of environmentalisation, there has been a similar tendency with the analysis of ecological resettlement – ‘rendering technical’. Technical and managerial approaches have been identified to be dominant in the previous review of ecological resettlement studies, and environment in particular is either examined in technical terms separated from the social ones, or is ignored. Regarding environmentalisation, an analytical approach as well as an official articulation, namely, ecological modernisation, is dominant. These address the advance of technocratic and market-based approaches as positive signs for achieving ecological sustainability (Cann et al. 2005; Carter and Mol 2007; Fridman 2008; Zhang et al. 2007). As Adger et al. (2001) point out, a technocentric worldview invites external interventions to solve environmental problems. Nevertheless, the major problem with such ‘rendering technical’ analyses is that they take for granted the effectiveness and sufficiency of the logic, and of the ideas and knowledge behind the governmental strategies and thus cannot explain why problematic local consequences are repeated.

The research aim and questions

Literature on China’s resettlement has mainly been written on involuntary resettlement (Fruglle et al. 2000; McDonald 2006; McDonald and Michael 2002; Meikle and Walkter 2000). Ecological resettlement is still a new sub-

---

12 For example, Lang (2002) thinks that the environmental disasters stimulated the state’s strong actions because they threatened the regime’s legitimacy. Bao and Xun (2007) argue that Chinese environmental policies are ‘crisis-coping’. This is because, they explain, China had neither specific policy or legislation on the environment, nor consideration of environmental factors in the general development plan before the 1970s; and the state’s actions and policies, regulations and laws for dealing with environmental problems usually came about as reactive responses to cope with the eruption of the accumulated negative consequences of the longstanding environmental problems.
ject but deserves more research attention because it touches on a common challenge across developing countries regarding what is a viable policy to reconcile the intersecting problem of environmental degradation and development. The overall aim of the study is to explore ecological resettlement in relation to China’s ongoing environmentalisation. My interest in environmentalisation draws attention to environmental actions but I am not arguing that environmental problems in China are on the decrease. My intention is to examine how environmentalisation has been operationalised in ecological resettlement, and the empirical effects.

Taking the same line as critical scholars (Muldavin 2007; Yeh 2005, 2009), this study proposes an alternative approach to a technocentric perspective, mainly framed by insights from political ecology, to analyse China’s environmentalisation as social and political processes. Taking a political ecology approach means that I believe that ecological problems are “at their core social and political problems, not technical or managerial, and demanded a theoretical foundation to analyse the complex social, economic and political relations in which environmental change is embedded” (Neumann 2005: 5). To put it simply, environmental problems are highly politicised. Therefore, rather than taking for granted the current ways of governing the environment, this study scrutinises the logic, ideas and knowledge of environmentalisation; and on top of that examines the empirical effects. Before going on to a more detailed discussion of political ecology in Chapter 3, here I outline three theoretical aspects of political ecology that I draw on for my analysis: the changing ways of understanding power and power relations in governing the environment, the construction of environmental knowledge, and multi-scalar analysis of environmental issues. Hopefully, this study in turn will contribute to new ways of relating the threads of thought within political ecology.

First of all, my analysis of power and power relations in ecological resettlement is based on reflecting upon the alternative ways of conceptualising and analysing power and power relations. Power has been theorised by social scientists from the top down, and the bottom up, as structure and as capillary, as productive and destructive, and as both immaterial and material. This is well illustrated by the different engagements of political ecologists with power based on their different positions along “the epistemological spectrum, between naive positivism and extreme relativism” (Neumann

---

13 Critics question the presumptions of political ecologists because they “are more explicit about the specific relationship for which they are hunting and that they expect to see” (Robbins 2004:74). As a result, they think political ecologists know well the role of theory in conditioning what to look for in explaining change: systems of extraction and exploitation, the role of power in determining conditions and context, the power of discourse to set the terms in which those contexts are produced. However, I argue that, when the empirical data guide the choice of the political ecology approach, the theory offers analytical tools rather than presumes the research design.
I synthesise three phases of political ecology: in the first phase, power is conceived to be top-down, structural, negative, repressive and material. This view has been utilised to trace the sources of environmental degradation upscale and to analyse the state-society conflicts over access to resources (Bassett 1988; Blaikie 1985; Blaikie and Brookfield 1987; Hershkovitz 1993; Kull 2002; Moore 1993; Peluso 1992); in the second phase, power is conceived to be constructive and immaterial while the analytical focus has shifted to discerning the social construction of policy, discourse and knowledge (Bassett and Zueli 2003; Bryant 1998; Fairhead and Leach 1995, 1996, 1997; Forsyth 2003; Leach and Mearns 1996; Peet and Watts 1996; Robbins 2000; Stott and Sullivan 2000); in the third phase, power is conceived to be capillary and productive upon incorporating Foucault-inspired governmentality studies. Instead of following only one thread of the way of conceptualising power, I choose to remain open to the relevance of the different threads of thought to my empirical materials, and seek to experiment with a way of combining them. Meanwhile, I also seek to incorporate insights from political scientists’ studies on China’s environmental governance, given that power analysis of environmental politics in China has been mainly carried out by them. Despite being limited to what occurs within the political system, the views of the political scientists have drawn attention to how the dynamics of power within the political system have structured the environmental arena (Economy 2004; Lieberthal 1997; Ran 2013; Wu 2009).

Secondly, ecological resettlement is embedded in a specific way of thinking and talking about the human-environment relationship. This is a further investigation of the knowledge/power dimension of power and power relations. Environmental knowledge/discourses are not just ‘out there’; but on the contrary, they are always associated with different positions and competing constructions implicated in power relations. Problematising the social processes of discourse and knowledge production has become the analytical focus of poststructuralist political ecology (Bassett and Zueli 2003; Bryant 1998; Fairhead and Leach 1995, 1996, 1997; Forsyth 2003; Leach and Mearns 1996; Peet and Watts 1996; Robbins 2000; Stott and Sullivan 2000), several important studies are in relation to grasslands (Leach and Mearns 1996; Turner 2003; Yundannima 2012). Knowledge-power is further made an agent for transforming human life from the governmentality perspective. Many geographers consider governmentality in terms of the mechanisms of knowledge production that the states have used to constitute their subjects and territories as ‘governable’ (Rose-Redwood 2006).

The construction of environmental knowledge in ecological resettlement is to be explored. As Yeh (2010) reasons, if ecological resettlement is a rational policy decision with the objective of restoring grasslands as it is claimed, several conditions must hold true: first of all, grasslands must be degraded; secondly, overgrazing must be a primary cause of the problem;
and thirdly, removal of grazing must be able to move the ecosystem out of its undesirable state. These conditions must be evaluated with a set of measures, and the measures are embedded in specific types of knowledge. Yeh’s interrogation is actually intended to draw attention to the simplicity of the policy basis behind the grassland degradation issue without carefully considering the complex knowledge. A similar critique towards grassland policy by Jiang (2006) points out that the failure of local grassland improvements is linked to “two contradicting realities: the natural constraints to landscape change and the dogged persistence of policies to improve it” (1917). My intention here is not to evaluate whether grassland degradation is the truth; instead, I am concerned with how the different positions of knowledge shape the processes and effects of ecological resettlement. I assume that the problematic consequences of ecological resettlement are related not only to how it is practiced, as this is addressed by policy advisers who believe that improving enforcement is going to solve the problems, but first of all and fundamentally to how it is conceived.

Thirdly, the processes of ecological resettlement occur on multiple scales and across scales. Scale is a key concept for defining and explaining environmental problems to political ecologists (Neumann 2005:10; Zimmerer and Bassett 2003:3). In studying my case, scale in the sense of level remains fundamental to understanding the mechanisms of environmental policy flows within the political system, but I also seek to pay attention to the production of scale (Neumann 2009; Rangan and Kull 2008). This means that scale is not only related to what happens on any particular scale but is also “used to interpret the experience of spatiotemporal difference and change so as to make ecology the object of politics, policy-making and political action” (Rangan and Kull 2008:28). The relevance to this analytical perspective is based on my observation that, in the political discourses of ecological resettlement, desertification and grassland degradation, those problems that used to be addressed in relation to poverty in a specific ‘peripheral’ place, are articulated as being ‘upscaled’ to threaten the national security (located in the “central” places). At the same time, the relation of the “peripheral” place to the state is also re-coordinated according to its ecological function.

By taking a case study approach to situate ecological resettlement in a Mongolian pastoral area of western China, this study positions itself at the intersection of three themes/fields: environmental governance, migration and pastoralism. Nevertheless, instead of following the conventional approaches in one of the fields, I seek to develop a nuanced way of looking at the issue from a trans-field perspective. Three research questions are set up: (1) how is environmentalisation of the state operationalised through ecological resettlement?; (2) how is environmentalisation taken forward through local implementation of ecological resettlement projects?; and (3) how does environmentalisation affect the practice of Mongolian pastoralism?. Analysis of the questions draws out the politics of the formulation, implementation and
effects of ecological resettlement at different scales and across scales. My analysis of ecological resettlement in China’s environmentalisation is conducted by a step-by-step inquiry process from contesting the knowledge construction to demonstrating the materialisation processes and finally to problematizing the implications for the physical environment. In the rest of this section, I give a brief explanation of the three questions.

*How is environmentalisation of the state operationalised through ecological resettlement?*
In existing studies, the notion of ‘environmentalisation’ has been used in a mixed way with ‘greening of the state’, ‘environmental state’ and ‘state environmentalism’ to suggest the priority given to environmental interests and conditions (Mol and Buttel 2002). In this study, I would like to make a distinction between the different terms. Environmental state highlights the state’s shift of position from passive to positive in carrying out environmental protection. Environmentalisation highlights that it is a process that is filled with transforming ways of governing the environment. It may entail dimensions in which “a formerly non-environmental issue comes to be defined substantially as an environmental issue” (Buttel 1992) and it may also entail the dimension of putting an emphasis on ecological values, together with growing bureaucratisation and professionalisation (Marsden 2004). Concerns with grassland degradation used to be associated with negative impacts on local production and output, but since it was linked to sandstorms, the issue has become a prioritised environmental concern. Nevertheless, this is not a single case, but embedded in a wider shift of the state power, which I call ‘environmentalisation of the state’. This is a long-term trajectory by which the exercise of sovereignty in the environmental domain comes to be articulated through the regulation of populations and individuals.14 My study seeks to explore how this process is operationalised through ecological resettlement. This means, I intend to expose the language and formulation of governmental strategies and the embodied rationalities, logic, ideas and knowledge, as well as the technologies and mechanisms of the state. While drawing on the governmentality way of thinking about power to propose the notion, I do not mean to directly apply this alone. Instead, I seek to explore how different forms of power work together to structure the trajectory. The power lens is further complicated by the intersection with multiple politics of scale, the relations between the local and centre, and relations between the periphery and the core.

---

14 My take on the notion ‘environmentalisation of the state’ is inspired by Foucault’s notion “governmentalisation of the state”, which Dean defines as “the long-term trajectory by which the exercise of sovereignty comes to be articulated through the regulation of populations and individuals and the psychological, biological, sociological and economic processes that constitute them” (2010:267).
How is environmentalisation taken forward through local implementation of ecological resettlement projects?

This question shifts the analytical focus to the micro scale and is intended to elucidate about the dynamics of power in the local processes of environmentalisation. It is composed of two sub-questions. The first is how the central state’s environmentalisation attempt was translated by local authorities into implementation; and the second is how the affected pastoral households responded to environmentalisation through migration decision-making. In exploring the first sub-question, I perceive local authorities as agents between the central state and the people. Their activities are structured by the upper levels of government but they are also rational actors with their own interests. I focus on discussing how local authorities mobilised pastoral households to participate in the projects, and to what extent the identified governmental strategies and rationalities, logic, ideas and knowledge behind them, and the technologies and mechanisms in the previous question structured local practices.

The second sub-question explores how environmentalisation worked through households’ migration decision-making. It questions why some pastoral households stayed in the pastoral villages while others participated in the projects, and identifies the factors that affected household migration decision-making. Given the state’s announcement of ‘voluntarity’ as a principle to avoid violent conflicts in resettlement, there still exists room for power of choice and different migration behaviours related to different social and economic groups (Tang et al. 2005). I intend to unpack the diverse strategies of the affected people based on a belief in the people’s agency. This agency-based approach challenges the dominant conception of resettled people as a unified group of passive recipients and victims in ecological resettlement studies. To go beyond the classical voluntary/forced framework in resettlement studies, which has limited conceptual usefulness (Dun and Gememne 2008; Gebre 2002; Schmidt-Soltau and Brockington 2007; Xue et al. 2013), I draw insights from theoretical debates on the agency of people in political ecology to structure my analysis. In particular, I look into the role of environmental factors in affecting migration decision-making (see more elaboration in the next section). Framed by the power-aware analytical approach, I seek to understand the impact of grassland degradation on migration in relation to environmental perceptions and local social cultural relations rather than only seeing grassland degradation as one type of driving condition for migration. The discussions also contribute to better understanding of how to relate ecological resettlement to environmental migration research.

How does environmentalisation affect the practice of Mongolian pastoralism?
Ecological resettlement projects theoretically attempt to re-coordinate human-environmental relations in specific places through two engineering activities: moving people out, and enclosing land. This question shifts the focus to examine the implication of these two types of engineering activities for the local practices of Mongolian pastoralism. It requires two elements of analysis. The first is to examine how the management of rangeland as part of enforcing ecological resettlement projects has facilitated environmentalisation. Institutionalising household use rights has been driven by the state to form the basic structure on rangeland use since the 1980s (Banks 2001; Williams 2002; Zhang 2006). The state has a strong belief in building a clearly defined institutional land system for better grassland management. While the initial aim was to stimulate the productivity of individual pastoral households and securing properties (Zhang 2006), later land privatisation has also been motivated by controlling grassland degradation or ‘the tragedy of the commons’ (Banks 2003; Li and Zhang 2009). On top of that, land titling also serves as a basis for enforcing restrictive measures such as stocking rate. From a global perspective, the Chinese approach is very similar to pastoral development policies worldwide (Behnke and Scoones 1993; Fraktin 1997; Turner 2003). Existing literature has drawn much attention to the increase of tensions and conflicts upon enforcing land titling on land used in common (Banks 1997, 2001, 2003, 2005; Ho 2001a; Williams 2002; Zukosky 2008). In this study, I am interested in exploring the ways in which land privatisation embodies the technologies and mechanisms of environmentalisation to reshape the practices of Mongolian pastoralism. The second part of the question analyses how and why migrant households have been re-included in practising pastoralism to transform environmentalisation. While ecological resettlement aims to reduce livestock numbers through depopulating the pastoral villages, migrant households have actually found new ways to continue their involvement in pastoralism. Through discussing these new ways and the reasons behind their emergence, I intend to draw attention to the

15 ‘The tragedy of the commons’ is an economic theory by Garett Hardin (1968). It states that resources held in common can easily become subjected to self-interest motivated exploitation at the expense of the society and even individual’s long term welfare. Especially he uses herding as an example to argue that a herdsman’s rational practice on a common pasture will lead to overgrazing. This theory has strongly influenced the views of pastoral policy makers in many developing countries including China. They ascribe grassland degradation to the problem of open access and free movement and intend to revise the situation by setting up land tenure regimes (Fraktin 1997). Two basic problems of the theory are the assumption of the ‘rational man’ and the assumption of ‘open access’. That is to say, the theory ignores the fact that in the real world, people are rarely free from any such restrictions as ethnic rules, cultures and communal obligations. It also overlooks the existence of local resource and property management systems which enable the use of resources in a common pool. Therefore, ‘the tragedy of the commons’ is a falsifiable assumption. Critics of the theory and relevant policy are not the focus but part of the foundation of this study. An analysis of local management system of Mongolian pastoralism is done in my master thesis Zhang (2006).
power existing in social cultural relations to transform the outcomes of the state’s interventions.

Clarifying the conception of ecological resettlement

The key term and subject of this study, Shengtai Yimin, has been used in varied ways by policy-makers and researchers with fuzzy understandings. This section will clarify its meaning by reviewing its use in policy and literature and by explaining my use of the term.

Confusion regarding the notion of ecological resettlement first arises from it being mixed up with poverty alleviation policy and practices. The notion ‘ecological resettlement’ emerged later than the notion ‘Anti-poverty Resettlement’ in policy texts but it they have been used in an interchangeable manner in the field of poverty alleviation (SCWRDO 2005 a). An extreme claim in the periodic guideline Non-Local Poverty Alleviation Resettlement 11th Five-Year Plan, simply claims that ecological resettlement is a synonym of Anti-poverty Resettlement (NDRC 2007). Taking the term as coined in practice, Xinjiletu (2005b) traces the first use of ecological resettlement to an anti-poverty resettlement project in an environmentally extremely degraded area of Guizhou province in 1982. In a similar way, Sun et al. (2009) count a poverty alleviation resettlement programme in the Sanxi areas of western China as the beginning of ecological resettlement. Later ecological resettlement projects seem to name both projects with prior environmental concerns and those with severe poverty problems (Sein and Zhang 2009; Xinjiletu 2005a). The intersection of poverty and environmental problems seems to be common in reality, but why did the notion ‘ecological resettlement’ emerge and why has it become a more popular way of talking about resettlement? Bao and Ren (2011) think that naming projects with such as notion in Inner Mongolia was done to follow the path of the state’s developing discourse on combating eco-environmental deterioration. Minjian Zhang (2006) explicitly states that ecological resettlement in the Ningxia Hui Autonomous Region is just a more fashionable name for anti-poverty resettlement; and the prime objective of the projects is still to alleviate poverty.

Such a mix of policy and practices is reflected in the mixed association of ecological resettlement with other types of resettlement in research. Ecological resettlement has been mixed with both poverty alleviation resettlement (Sein and Zhang 2009; Tan 2011; Tan and Guo 2007, 2009; Xinjiletu 2005a; Xu and Ju 2009) and with involuntary resettlement (Dickinson and Webber 2007) even though no claim across the policy text suggests any linkage be-
tween involuntary resettlement and ecological resettlement. On top of that, the term ‘Shengtai Yimin’ has been translated in at least four ways in English literature: ‘environmental resettlement’ (Dickinson and Webber 2007; Roger and Mark 2006), ‘ecological migration’ (Bao and Xun 2007; West 2009; Yeh 2009; Foggin 2008, 2011), ‘environmental migration’ (Tan and Guo 2009; Tan and Wang 2004) and ‘ecological resettlement’ (Du 2009 and 2012; Foggin 2012; Zhang 2012).

In this study, I use ecological resettlement instead of the other terms for the following reasons. The Chinese word Yimin can refer both to resettlement and migration. Nevertheless, in English, migration is a broad and general term referring to the geographic movements of individuals or communities, including resettlement. However, resettlement is a much narrower concept, referring to the planned and controlled relocation of a population from one physical place to another (Muggah 2011). Resettlement emphasises that the state takes a leading role in inducing the population movement. Resettlement is a policy tool and a solution provided by the government for addressing environmental problems. ‘Ecological’ is used instead of ‘environmental’, both because it is the literal translation of Shengtai, but also for highlighting the state’s discourses. Ecology has been a popular word in the last decade in the government’s environmental discourses, which constitutes the core of the sustainable development discourse which is part of the global trend. To summarise, I use the term ‘ecological resettlement’ to highlight the policy-driven nature of the issue; and to highlight the state’s current approach of understanding and acting on the human-environment relationship.

Following its wider use, Chinese scholars have also sought to better define the notion ‘Shengtai Yinmin’. I identify four approaches among them. The first approach, as used by Gegengaowa and Wuyunbatu (2003), addresses environmental degradation as the cause of Shengtai Yinmin. They define ‘Shengtai Yinmin’ as “a kind of economic behaviour in which people are forced to change place of residence and adjust lifestyle due to the degradation of the ecological environment which has jeopardised the short-term and long-term subsistence interests of the people” (2003:118). The second approach, as used by Liu (2002) addresses the central role of the government and the (multiple) objectives including environmental protection, economic development and others. For example, Liu defines ‘Shengtai Yinmin’ as “an activity stemming from the concern with improving and protecting the ecological environment together with developing the economy. It collects a highly dispersed population living in environmentally fragile areas through resettlement to form new villages and towns so as to achieve the coordinated development of population, resources, environment, economy and society”

16 The exception is that ecological resettlement is implemented on top of involuntary resettlement in the same area, for example, in the areas affected by the construction of the Three Georges Reservoir.
The third approach simultaneously addresses environmental degradation as the cause and environmental protection as the objective of ‘Shengtai Yimin’. Bao provides a simple definition of it: “the movement activities including population movement due to ecological environmental degradation or for protecting ecological environment” (2006:27); Guo and Shi give a similar but more elaborative version “the voluntary population movement activities due to the loss of subsistence conditions caused by the destruction or degradation of ecological system; it can also be planned resettlement of a population from ecologically fragile areas to new settlements in order to rebuild social and economic life. It can also be the resettlement of a population due to restrictions and forced change of resource use for restoring ecological systems, and the associated livelihood restoration activities” (2010:97). The fourth approach, as used by Zheng (2013) addresses the environment as the objective of ‘Shengtai Yimin’. She claims that “Shengtai Yimin essentially refers to population movement with the prime aim of ecological protection and the principle of enhancing ecological system service functions and values” (98). Like Rogers and Wang (2006), Zheng (2013) further distinguishes two types of ‘Shengtai Yimin’: one pro-active type for wildlife conservation and biodiversity, and the other a passive type for ecosystem restoration in environmentally fragile areas.

Guo and Shi (2010) and Zheng (2013) have also sought to discuss ecological resettlement in relation to the concept of environmental migration. While both studies attempt to distinguish these from each other in a relational way, Guo and Shi (2010) consider ecological resettlement in parallel to environmental migration, disaster migration and development project resettlement as mutually exclusive types, whereas Zheng (2013) thinks ecological resettlement overlaps with climate migration and both are within the scope of environmental migration. The difference is caused by their definitions of environmental migration. Environmental migration is one of the terms and concepts (others such as ‘environmental/climate refugees’, ‘environmentally-induced forced migration’ and ‘climate change-induced migration’) that have been used to refer to migration caused by environmental degradation or change. Although we are now beyond the early negative articulation of this in terms of environmental refugees (Black 2001; Sauders 2000; Morrissey 2012), a source of conflicts and security threats to the Global North (El-Hinnawi 1985; Jacobson 1988; Myers 1993, 1997), it is however still a challenge to define environmental migration due to “the difficulty of isolating environmental factors from other drivers of migration” (Dun and Gemenne 2008:10). The International Organisation of Migration provides a working

---

17 All the quotations in this paragraph are translated from Chinese.
18 They refer to English (2006), and state that, in the former type, nearly 2,200 nature reserves covering 14.8 per cent of China’s landmass have forced many people to move away. The later type increases rapidly but there is no national estimation of the scale.
definition of ‘environmental migrants’ as “persons or groups of persons who, for compelling reasons of sudden or progressive change in the environment that adversely affects their lives or living conditions, are obliged to leave their habitual homes, or choose to do so, either temporarily or permanently, and who move either within their country or abroad” (Laczko and Aghazarm 2009:19). By comparing the above Chinese definitions with this definition, one can see that the first Chinese definition is closest to it because they both emphasise the driving force of environmental change on population movement. However, in contrast, while the international definition of environmental migration puts the focus on people, most Chinese definitions of ecological resettlement suggest the central role of the state. While international research has attempted to advance conceptualisation and empirical verifications of the migration-environment relationship (Bates 2002; Black et al. 2011a; Hugo 1996; Jacobsson 1988; Morrisey 2009, 2012), little is known about how this relationship is subordinated to the state’s intervention in ecological resettlement projects.

Therefore, I think it is problematic to consider ecological resettlement as a Chinese example of environmental migration without scrutinising the human-environment relationship in the projects as some studies do (see e.g. Tan and Wang 2004; Tan 2011; Tan and Guo 2007, 2009; Xu and Ju 2009). From a technical perspective, whether it is appropriate to take the experiences of ecological resettlement as good lessons for proposing policy responses to climate change adaptation, as it is suggested by Sherbinin et al. (2011), requires scrutiny. Some empirical studies have actually raised questions about the linkage between ecological resettlement and climate change adaptation by observing local implementations of ecological resettlement (Stojanov and Novosak 2006; Tábara et al. 2008; West 2009). While resettlement in the context of climate change adaptation is intended to facilitate the needed migration and mobility but lacks resources to do so in areas with climate-change-driven problems (Black et al. 2011b; Sherbinin et al. 2011), such a need does not seem to precondition ecological resettlement projects in the policy initiatives. Moreover, this is also under-researched empirically. Therefore, the results for the second research question of this study can contribute to further understanding of the relationship between ecological resettlement and environmental migration.

19 Tábara et al. (2008) and West (2009) suggest that ecological resettlement projects should be taken as opportunities to relieve the needs of livelihoods rather than those caused by environmental stresses. Stojanov and Novosak (2006) worry that resettlement does not really deal with the cause of the degradation but looks for reasons to move people out of development project areas.
Structure of the thesis

This monograph is composed of nine chapters.

Chapter 1 introduces the research topic, background, aims and research questions. At the end, it clarifies the definition of ecological resettlement.

Chapter 2 situates ecological resettlement in China’s current transition and transformation, in the core-periphery relationship between eastern and western China and in the change of top concerns towards pastoral areas.

Chapter 3 reviews the theoretical inspirations that guide the formulation of my conceptual and methodological approaches.

Chapter 4 describes the methodological considerations. It introduces the specific methods that I have used to collect qualitative and quantitative data. Meanwhile, I explain the sources of materials and the research design. At the end, I reflect upon my conduct.

Chapter 5 answers the first research question. It analyses how ecological resettlement manifests the environmentalisation of the Chinese state. The chapter first shows how the state enables a governable environment through promoting characteristic forms of discourses and knowledge, and then how interventional technologies are justified to act on the discoursed environmental problems. The analysis also seeks to locate the state’s rationalities and technologies in the political economy of developing western China and in the new way of imagining and managing the national environmental territory. Moreover, rather than directly applying an analytics of government, my study reflects on how China’s environmentalisation process is enabled by the features or mechanisms of China’s political system and how these have re-configured the political dynamics.

Chapter 6 seeks to answer the first part of the second research question. It shifts the focus to the local level, the case study area of Xilitu Sumu, and explores how the state’s environmentalisation attempt was translated by local authorities into implementation, or more specifically how the idea of constructing an ecological security shelter was practiced locally in the implementation of ecological resettlement projects. The findings draw attention to the strategies of local politicians as well as their motivations and interests in the local practices, which are subordinated to the current structure of environmental governance but challenge the sustainability of the projects.

Chapter 7 answers the second part of the second research question. It continues the exploration of the dynamics of power in the local process of environmentalisation but shifts the focus to the pastoral households and their strategies. The aim is to examine how environmentalisation worked through households’ migration decision-making. I am interested in understanding why some households stayed while others left, and in finding out which factors affected household migration decision-making. The chapter is thus structured by, firstly, an analysis of interviewed households’ migration decision-making in the first project, and then in the second project. Then there is
a statistical analysis to test if a group of household-level factors had effects on participation decisions in the second project as was suggested by the interviewees. Based on the last analysis, I go on to propose a model to conceptualise and map household migration decision-making. Given that grassland degradation was suggested as the driving force behind the state’s environmental actions including ecological resettlement, in the last part of the chapter, I examine the role of grassland degradation in household migration decision-making.

Chapter 8 answers the third research question. It focuses on the pastoral villages, the origin of the affected pastoralists, to examine how environmentalisation reconfigures the practice of Mongolian pastoralism. The chapter is composed of two analytical parts. The first part analyses how the management of rangeland as part of enforcing ecological resettlement projects has facilitated environmentalisation. In this group of processes, land privatisation embodies the technologies and mechanisms of environmentalisation to produce material effects on rangeland use and to create obstacles to the practice of pastoralism. The second part of the analysis looks into how and why migrant households have become re-included in practising pastoralism. This group of processes draws attention to the agency of the resettled people to transform the outcomes of the state’s interventions.

Chapter 9 is the concluding chapter, in which I summarise and discuss the main arguments of this thesis. Then it gives methodological reflections on how I have used the theoretical insights to operationalise the concept ‘environmentalisation’. At the end, the chapter suggests the future direction of research.
2. Situating ecological resettlement in China’s transition and transformation

This chapter aims to situate ecological resettlement in two types of contexts, the social geographical context and the historical policy context. These two types of context are first of all founded on the national context of China in transition and transformation. China has been in a transitional phase (or post-socialist transition) since the state initiated economic reform in the 1970s (see e.g. Muldavin 2007). This post-socialist transition is composed of state-led processes to decentralise and privatisate property rights, to promote market-based competition, and to construct a socialist market. It is noteworthy that the progresses are made up of sectoral and spatially uneven processes.

As I have introduced in the previous Chapter, ecological resettlement is closely related to western China, ethnic minorities and pastoralists. In contrast to eastern China, western China has had a large ethnic minority population and rural population, much grassland and many nomads/pastoralists. Meanwhile, western China has for long been perceived as less developed, peripheral and even marginalised compared to the eastern areas. This contrast was further sharpened after the economic reform brought more social and economic development to the east. Ecological resettlement was introduced at a time in history when the state sought to close the gap between the west and east in China. On the other hand, in contrast to its passive image in solving industrial pollution problems (Economy 2004; Smil 1993), the Chinese state quickly responded to the sandstorm problem by launching the large-scale environmental programme the Beijing-Tianjin Sandstorm Source Control Programme. This environmental initiative revisits an old grassland degradation question, about which a fierce debate has been developed regarding the knowledge and policy. This chapter begins by highlighting the social geographical features of the periphery from the wide territory of western China, to Inner Mongolia and Xilingol League and to the specific case study area of Xilitu Sumu. A short introduction of the Chinese governmental administrative structure follows to provide a guide to the relations between regions and different levels of administrative units that will be referred to in the rest of the thesis. The chapter then outlines how the new current policy events have intersected with the old ones to engage the periphery.
Approaching the periphery

The wider contexts: Western China, Inner Mongolia and Xilingol League

Western China has never been a well-defined region. It is not an exact geographic concept but rather a term coined for classifying policy regions. I take the latest definition in 2001 for enforcing the Western Development Strategy (also translated as ‘the Go West campaign’, Xibu Da Kaifa Zhanlue in Chinese), which is composed of six provinces, five autonomous regions and one municipality. The western region covers 71 per cent of the national territory and has 91 per cent of the national borders. But it is sparsely populated with four hundred million people, which is only 30 per cent of the national population. Compared to eastern China, there is also a higher percentage of rural population in western China. Before the Western Development Strategy was implemented in 2000, more than 70 per cent of the regional population lived in rural areas (Liu et al. 2007; Shen 2014). Moreover, the population in the west is very diverse in terms of identity. About 40 per cent of the regional population is composed of ethnic minorities; ethnic minorities account for 8.4 per cent of the national population and 80 per cent of them live in western China. Western China also has most of the grassland resources. China has around one-eighth of the world’s grasslands, and these account for about 42 per cent of the national territory, and nearly 85 per cent are located in western China. However, it should be noted that the grasslands are highly diverse and they vary according to land and vegetation types, altitude, geographic position, rainfall and other characteristics. Different economic characteristics and administrative boundaries further complicate the methods of classifying grasslands (see details in section 2.2 in Brown et al. 2008). These grassland areas are home to 161.5 million people and most of them are ethnic minorities, such as Mongol, Tibetan and Uyghur (Yeh 2013). These ethnic minorities remain active in nomadism or pastoralism. They herd the largest population of sheep and goats, as well as the fourth largest concentration of cattle (ibid.).

---

20 Most of China’s regional development policies are based on the classification of three zones: east, central and west. The compositions of the zones saw a significant change with the launching of the Western Development Strategy. The Inner Mongolia Autonomous Region, which used to belong to the central zone, and the Guangxi Autonomous Region, which used to belong to the eastern zone, were included in the western zone. The western region since then has been composed of twelve regions, covering six provinces (Gansu, Guizhou, Qinghai, Shaanxi, Sichuan and Yunnan), five autonomous regions (Guangxi, Inner Mongolia, Ningxia, Tibet and Xinjiang) and one municipality (Chongqing).

21 China officially recognises 55 ethnic minority groups in addition to the Han majority. Figures are from the national census 2010.
Ecological resettlement has caused and is going to cause more large-scale population movement in western China. According to the state’s statistics, more than one million people were moved out of environmentally fragile areas through ecological resettlement in western China between 2000 and 2005 (SCWRDO 2005b). Tan (2007) estimates that at least one-third of ecological resettlement projects were implemented in three provinces and autonomous regions of western China, Gansu, Ningxia, and Inner Mongolia. In the south of the Ningxia Hui Autonomous Region, 303,000 people were identified to be in need of ecological resettlement, of which 168,000 had to be moved out of the forestry conservation area, 105,000 out of the drought, wind and sand control area, and 30,000 out of the potential geological disaster area (Zhang 2006); in Xinjiang Autonomous Region, 524 households with 2,420 people were resettled to make the way for channelling the Tarim river to the downstream after 2001 (Shi et al. 2007); in the Three-River Headwater region in the core of the Tibet Plateau, the Ecological Protection and Restoration Programme set a goal of moving 100,000 local herdsmen out of the core and buffer zones of the reserve to towns and cities from 2005 to 2010 (Foggin 2008; Wang et al. 2010); In Inner Mongolia, the first and major province to implement ecological resettlement, 650,000 rural dwellers were planned to be relocated between 2002 and 2008 (Chu and Meng 2005).

The Inner Mongolia Autonomous Region is the third largest province, accounting for 16.6 per cent of the national territory. It is also the widest province, stretching to the borders of Russia and Mongolia in the north. Following the general pattern of western China, Inner Mongolia has a high percentage of ethnic minorities (about 20 per cent of its 24.7 million population) and ethnic Mongolians account for 17 per cent of its population.22 The share of rural population in Inner Mongolia was lower compared to the level of western China, which had about 57 per cent in 2000.23 According to Meng and Qu (2011), nearly 15 million people were living in the pastoral areas in 2008. The natural grasslands constitute 68.8 per cent of Inner Mongolia’s territory and they are classified into three grassland zones from the east to the west.24 These grasslands have been extensively used for mobile pastoralism by nomadic peoples since the dawn of history. Nevertheless, the large-scale immigration of Han peasants and farming to the grasslands since the end of the 19th century has dramatically changed the demographic features and land use patterns in this area (Zhang 2006). Nevertheless, pastoralism and livestock herding nowadays remain the main type of livelihood for more

22 Figures are from the national census 2010 (IMSB 2011).
23 The figure is from the national census 2000 (IMSB 2001).
24 The figure is from the Report on the State of the Environment in China 2005 (SEPA 2005). According to Brown et al. (2008)’s classification, the three grassland zones from east to west are the Northeast temperate belt, semi-humid meadow steppe and meadow zone, the Inner Mongolia-Ningxia-Gansu temperate semi-arid steppe and desert steppe zone, and the Northwest temperate, warm temperate, arid desert and mountain steppe zone.
than seven per cent of the region’s total population or fourteen per cent of its rural population, especially in remote rural areas. Mongolian pastoralism in this study is taken to indicate specific ways of resource management and the symbolic lifestyle of the Mongols. Mongolian nomads developed characteristic types of pastoralism in terms of pasture use and livestock management (Wang 2001, 2005). The core of traditional Mongolian pastoralism is to keep a combination of five types of livestock - sheep, goat, cow, camel and horse - and to make strategic and extensive use of pastures based on seasons, water sources and topography. Mobility is central to its practice. The major differences between the present practice of pastoralism and the traditional one are the decreasing types and numbers of livestock and the greatly reduced mobility in land use due to the interventions of social and economic development policies (Zhang 2006).

Xilingol League is located in the middle of Inner Mongolia, to the north of Beijing. The proportion of grasslands in the region is quite high, accounting for more than 86 per cent of its territory (Batunacun et al. 2012). The grasslands consist of three types: temperate meadow steppe, temperate steppe, and temperate desert steppe. Moreover, one of the large sandlands in China, Hunshandake (Otindag in Mongolian) sandland is located in the middle of Xilingol plateau (Yang et al. 2007) and Xilitu Sumu is at its fringe. The first grassland biosphere reserve established by UNESCO in 1987 overlaps the sandland. The Chinese Academy of Sciences has had a research station there since 1979, where natural scientists experiment with different methods of improving land cover in order to advise policy-makers (Li et al. 2007). The population in Xilingol League had reached more than one million by 2010 and about 54 per cent were living in the rural areas in 2000. Ethnic Mongolians account for more than 30 per cent of its population. Xilingol League has been famous for keeping the best traditions of practicing Mongolian pastoralism. This is due to the fact that a high percentage of Mongolian population are still engaged in pastoralism, and livestock remains the most important if not the only source of income for them.

The origin: The pastoral villages of Xilitu Sumu

The specific case study area of Xilitu Sumu is located in the central northern part of Xilingol League. It is under the administration of City Q and consists of four gachas (anonymised as Gacha A, B, C and D) and one ecological resettlement village (anonymised as Resettlement Village S). Within its ad-

25 The aim of the reserve is to protect the biodiversity of a typical steppe ecosystem and to develop models of sustainable grassland resource use for improving the well-being of the local people.
26 The figure is from the national census 2010 (XLSB 2011).
27 Figures are from the national census 2010 (XLSB 2013).
ministrative area of about four thousand km² live more than four hundred households containing about one thousand five hundred persons, which means the area is sparsely populated. The population is mainly composed of ethnic Mongolians (more than 95 per cent). Han Chinese were mostly descendents who migrated to the area in the 1960s. Marriages used to be mostly between Mongolians within the township and with pastoral Mongolians from neighbouring counties. However, nowadays there are increasing inter-marriages between Mongolian and Han, and also to people from far-away places. The average size of a household is four persons but it varies quite a lot. Although most households operate independently economically, due to the structures of land tenure and the Hukou system, they remain tightly linked to an extended family no matter whether they live close to each other or not. The birth rate has been declining due to family planning. In general, the younger the generation, the less siblings it has.

In the rest of this section, I introduce the more detailed conditions of the local physical environment and the social economic life in pastoral villages where the resettled pastoralists are from.

The local physical environment

Xilitu Sumu is a typical desert steppe. The climate in the area is typical of a temperate continent with a short summer (between June and August) and a long winter (between November and February). It is characterised by low and highly variable precipitation, intensive evaporation and strong wind. The average annual precipitation is only 121.4 mm (average between 1961 and 2009). Figure 2, showing the precipitation anomaly, indicates that precipitation in Xiliu sumu has been very uneven over the years. For example, in a good year such as 1996, the annual precipitation reached 256.9 mm, while in an extremely low year such as 2001, it was only 39.7 mm. The difference in precipitation between successive years can also be very extreme. For example, the difference between 1989 and 1990 was over 150 mm. In general, the annual precipitation in the area has decreased over the last 40 years as the trend line indicates. Precipitation in the area is also very unevenly distributed throughout a year. Rainfall is mainly concentrated in spring (March to May).

---

28 The Hukou system is a household registration system that has worked in China for more than fifty years. The system was designed not only to provide population statistics and identify personal status, but also to regulate population distribution and serve many other important objectives desired by the state during the Maoist time (Chan and Zhang 1999). After the economic reform, this institution has become a major constraint to population mobility and access to state-sponsored benefits for the majority of the rural population (Fan 2002). Although the state has recently carried out a variety of reforms, this institution remains significant in affecting every individual’s life nowadays and it is still a major structural divide between the rural and urban population (Chan and Buckingham 2008). Its role in ecological resettlement projects will be discussed in Chapters 6 and 7.
and summer (June to August) and annual precipitation is largely determined by the amount of rainfall in the summer.

The primary natural hazard in this area is drought. According to information published by the Xilingol League Meteorology Bureau, the probability of spring drought in this area is 60 per cent, and that of extreme spring drought is 40 per cent. The probability of summer drought is 53 per cent and that of extreme summer drought is 27 per cent. The probability of continuous drought from spring to summer is 37 per cent. It is also claimed that the local climate trend has been to become drier because the average annual rainfall dropped 40 per cent between 1999 and 2006. Moreover, droughts, sandstorms, snow disasters, and locust infestations also occur. Sandstorms often occur in spring (in April and May) and autumn (in September and October). Poor vegetation coverage from droughts usually increases the effects of sandstorms. Locust swarms often taking place after a continuous drought with high temperatures, which severely damage rangeland vegetation. Snow disasters are very exceptional compared to other areas in Xilingol League. However, when they occur, a greater loss of livestock is usually involved because deep snow makes it difficult for livestock to graze. Without enough storage of grain fodder and proper sheds, livestock are exposed to the dangers of starving and freezing to death. For example, in the snow disaster in 1999, many pastoral families lost a large number of their animals, especially large animals. The most recent intensive period of natural hazards in this area was at the turn of last century, when a snow disaster occurred in 1999,

Figure 2. Annual precipitation anomaly in Xilitu Sumu, 1961-2009. Source: GHCN data and Inner Mongolia Meteorological Bureau. Note: The primary source is unadjusted data from GHCN including years from 1961 to 2009; and the years without data including 1993, 1994 and 1999 are supplemented with data from Inner Mongolia Meteorological Bureau.
droughts in 2000 and 2001, sandstorms in 2000-2002, and a locust swarm in 2002. This period was also an intensively disastrous period for the broader region Xilingol League.

Given the harsh physical environment, the local ecological conditions are quite fragile. Monitoring has shown that, “due to drought and overgrazing, 90 per cent of the grassland in this area has been severely degraded and sand-dificated. Ecological functions of the area have been severely destroyed.” (City Q government 2008).\footnote{The assessment of Xilitu Sumu’s ecological environment was conducted together by the Xilingol League Grassland Supervision and Management Bureau and the Inner Mongolia Grassland Survey and Design Institute through continued monitoring of the local grassland resources and ecological conditions from 2001 to 2005. They claimed to use a combination of remote sensing technology and land survey methods, and combined different types of data including climate and soils.} City Q Grassland Monitoring Station’s assessment in 2006 claimed that Xilitu Sumu area was environmentally fragile and that 60 per cent of the grassland was severely degraded, 30 per cent medially degraded, and 10 per cent lightly degraded. These assessments are taken as scientific proof to support the introduction of environmental measures to reverse the situation.

**Sedentary pastoralism and land privatisation in the gachas**

Like other pastoral areas of Inner Mongolia, Xilitu Sumu has undergone two dramatic and significant phases of political and economic change in contemporary history: the commune period and the industry-oriented reform period. The first phase took place at the end of the 1960s, when both livestock and rangelands were collectivised, and both production and consumption were managed under the hierarchical structure of the commune, brigade and production team. The second phase started in the 1980s when the commune system was dismantled and the ‘Household Responsibility System’ (HRS, Jiating Lianchan Chengbao Zerenzhi in Chinese) introduced household-based economic activities. During the two phases, sedentarisation and land reform constituted two key drivers to transform pastoral communities. In the gachas of Xilitu Sumu, most of the pastoral families are sedentary and nowadays live in brick-built houses on their contracted rangeland plots. The houses are also equipped with modern furniture and apparatus. Nevertheless, there is no access to mains electricity or tap water. Quite often there are still traditional yurts near the brick-built houses for extended family members to live. Mobile yurts are also used in the summer when pastoralists move with their herds to pastures distant from their houses. According to an ex-village head, the sedentarisation policy was introduced to the area in the 1970s to encourage nomads to settle down and to move from yurt to house as a more civilised way of living. However, the impact was limited to those working
for the government or in the public service sectors in the sumu centre. Individual households started to build houses from the mid-1980s but most constructed their houses in the 1990s. This happened both in parallel to the land reform process and to the accumulation of household wealth through selling livestock to market.

Land reform was initially part of the decollectivisation process. In Xilitu Sumu, the process shared the general attributes of decollectivisation strategies in China: a relatively egalitarian distribution of land and some form of private property rights, a hybrid form of state and market regulation, substantial local state intervention in the reform process and a shift in responsibility from the state to individual peasant families to support rural surplus labour (Watts 1998:180). Livestock were first redistributed to individual households based on several criteria in the early 1980s. After that, two major rounds of land allocation, one in the late 1980s and one in the mid-1990s, were implemented to divide rangelands among individual households at the village level. This land reform, in the form of giving land use rights to individual households, constitutes part of the nationwide economic reform in rural China under the framework of HRS. The current land tenure in Xilitu Sumu entitles a household to land rights for thirty years until 2026. A household with four persons holds on average a plot of 15,000 mu or 1,000 hectares. This is very large compared to populated areas, for example, in the south of Xilingol League where an average household holds a plot one third this size. However, it is found in Xilitu Sumu that land rights have remained incomplete, ambiguous and even more disputed. Land reform is still an ongoing process, and its aim is to clarify land rights.

However, land reform faces resistance locally due to the needed mobility in practicing pastoralism. The practice of Mongolian pastoralism has been limited to varied political and cultural territories in history. While in the last feudal time during the Qing dynasty it was within the administrative territory of a banner (county-level administration), the space of nomadism was further reduced to that of a township except during times of disaster from the 1960s to the time before the land reform (Zhang 2006). In Xilitu Sumu, during the collective time, organised by village-level decision makers, mobile pastoralism remained active. However, land privatisation further promotes sedentarisation and together they tend to drive the sedentary practice of pastoralism within the territory of allocated household rangeland. Nowadays, most pastoral households have built houses on the winter pastures (see Figure 3). Fixed

---

30 The criteria include household population, ethnicity, number of labourers and children, original contribution of livestock to the production team, and rewards from the production team. For example, a child was counted as half of a labourer, and Han migrants were allocated less livestock. In the first few years after decollectivisation, individual households still needed to return some livestock or income from livestock to the village collective because some livestock were counted as collective property.

31 Mu is a basic unit to measure land in China. 1 mu equals about 0.07 hectare.
Figure 3. Settlements in the pastoral villages.
livestock sheds and other infrastructures are also built near the houses. Mobility of herding remains important but the extent varies greatly across individual households depending on a combination of factors, including the size and topography of the contracted rangeland, distance to water sources, cooperation with others in herding and land use, and number of household labourers. In spite of the trend for individualised production, the key infrastructure and wells remain in collective use. Daily movement of herds to the well therefore is the most important form of mobility nowadays.

Today, households’ livestock structure is very different from the last century. Similar to other pastoral areas, market-oriented production, breed improvement technology, and stocking rate regulation have together driven pastoralists to raise mostly small types of livestock such as sheep and goats and a small number of large types of livestock such as bulls. Moreover, non-indigenous but productive species have also been common for years as a result of the local government’s policy promotion (Li and Zhang 2009). Most households have stopped raising large types of livestock, especially horses and camels due to the stocking rate regulations and the unstable market prices. The number of animals varies greatly across households. A rough estimate is that a middle level household has about two to three hundred animals. Livestock has been a quite good measure of household wealth since it has been almost the only source of income for most families. Nevertheless, this situation greatly changed after the implementation of ecological resettlement. The wealth gap among pastoral families used to be small right after decollectivisation but it has now become quite large. The interviewees thought that the wealthiest time for the majority was in the 1990s.

The destinations: Resettlement Village S and City Q

Resettlement Village S was developed in 2001 to accommodate migrant households in the first ecological resettlement project. It is not far from the pastoral villages and is located near a small old town with good transportation access. The village has about a 0.5 km² housing area and a 1.5 km² farming field. The village was fully populated with nearly two hundred households at the beginning but by the time of my first visit in 2008, fewer than forty households still lived there. The main form of livelihood in the village was the raising of milk cows, which was a business idea promoted by the prefectural level government. More details of the village regarding its physical structure and its social and economic life will be presented from an analytical perspective in Chapter 6.

The town of City Q, the destination of the second project, is very small compared to the vast pastoral area surrounding it. However, driven by international trade, it has experienced rapid growth in the last fifteen years. Besides trade, the local government has been engaged in developing the indus-
trial sector. Promotion of urbanisation is considered to be a supporting approach to this direction of development. The territory of City Q increased three times between the early 1990s and 2007. The neighbouring grassland has been taken over by such expansion. Xilitu Sumu came under City Q’s administration from 2003. The main reason for changing Xilitu Sumu to City Q was to enable city Q’s use of the richer underground water source within the territory of Xilitu Sumu for city Q’s development. From an economic perspective, Xilitu Sumu is nevertheless very insignificant to City Q because the first industry contributes to less than 1 per cent of the local GDP.

The population of City Q has also grown rapidly. The number of permanent residents has increased more than three times in the last fifteen years. More importantly, city Q is a hub of migrants with diverse origins, socio-economic backgrounds and ethnicities. Of its population of over seventy thousand in 2010, more than a third were migrants from other provinces than Inner Mongolia and one fifth were from other places within Xilingol League. The Mongols form the largest ethnic minority group, which constitutes 20 per cent of the population. Interestingly, Mongol as an ethnicity, are also divided between local Mongolian pastoralists, Mongols from the east farming provinces and foreign Mongols in the context of this city. The high mobility of the population is tightly related to the structure of the job market in the city. Most migrant workers are temporarily hired in the construction and service sectors and there are only a small number of permanent and stable job opportunities in the local public sector, which require high education.

A neighbourhood F was especially built up to accommodate the resettled households. The neighbourhood is situated on the southwest fringe of the city. It consists of nearly two hundred apartments, each with the same size of 70 m². However, neighbourhood F had a low occupation level in the early years due to the lower level of compensation given to the residents. Only thirty out of the 141 resettled households living in City Q chose to take an apartment in neighbourhood F and still more than half of the thirty households actually rented out their apartments. The neighbourhood was also comparatively isolated, economically and socially, from the other parts of the city due to its location. The total size of the city is rather small and most economic and social activities such as shopping centres, food markets, bus and train stations are very centralised. However, the distance of neighbourhood F to the city centre was quite long and there was no public transport nearby. Taxis would charge a bit extra on top of the standard charge within the city to go there, suggesting its beyond-the-city-territory location. Although neighbourhood F was next to one of the oldest residential neighbour-

---

32 According to the definition in the national census, ‘permanent residents’ means people who have live more than one year in the place and have acquired the local Hukou register.
33 This situation totally changed after 2009 when the state removed the condition. Most households moved in, which revitalised the neighborhood.
hoods in the city, they were totally separated by a closed wall. The house-
holds which did not reside in neighbourhood often rented cheap single-
storey houses in two other neighbourhoods close to the city centre. Although
the conditions of these houses were poorer than in neighbourhood F, the
more open residential structure provided more opportunities for residents to
interact with each other.

Engaging the periphery

Governing from the central to the local

This section places ecological resettlement in the context of China’s admin-
istrative structure. The intention is not to give a complete introduction to the
complex organisation of the party and state apparatus, which has been done,
for example, by Lieberthal (2004) and Joseph (2010). Instead, this section
intends to introduce the Chinese governmental administrative structure so as
to produce a simple guide to understanding the relations between regions and
different levels of administrative units which will be referred to in the rest of
the text. The Chinese political system is basically composed of three nation-
wide bureaucratic hierarchies - party, the government, and the military, but
this study only focuses on the governmental administrative structure. I out-
line the administrative structure, first by the territorial levels and then by the
functional units.

There are four major territorial administrative levels: the centre, the prov-
ince, the prefecture and the county. Below the county, there is the township.
The village committee is not a level of government structure but it takes all
important decisions at the village level. The members are elected by the vil-
lagers. An autonomous region has the same rank as a province. An auton-
omo us region is a minority entity which has a higher population of a particu-
lar minority ethnic group. In the case of the Inner Mongolia Autonomous
Region, the region has a high percentage of ethnic Mongolian population.
The local government of an autonomous region has more legislative rights.
Inner Mongolia was the first of the five autonomous regions in China to be
established. The administrative levels in some areas of Inner Mongolia have
ethnically-derived titles, including league, banner, sumu and gacha to substi-
tute for the Han Chinese titles of prefecture, county, township and village
(see Figure 4). Inner Mongolia is composed of three leagues and nine pre-
fecture-level cities. Inner Mongolia is also one of the key provinces, where
many of the 266 pastoral and semi-pastoral counties in China are located
(Brown et al. 2008). Xilingol League is one of the three leagues in Inner
Mongolia. It is divided into nine banners, two county-level cities, and one
county. Eight of the nine banners are pastoral counties.
Literature on China studies often uses the term ‘local-central relations’. While the local often only refers to the provincial level government in the literature, I use ‘regional’ to refer to the province and prefectural level divisions and use ‘local’ to refer to county, township and village level divisions when I discuss my empirical materials. It should be noted that the greatest difference in Chinese government and politics after economic reform has been the weakening of the central government’s power. This is different from a totalitarian model which was the typical perception of the Chinese state during the Maoist period. Through the central government’s deliberate decentralisation in order to provide more incentives for economic development, local governments have gained more power (Oi 1992, 1995; Zhao and Zhang 1999).

![Diagram](image)

*Figure 4. The territorial levels of the state administration.*

Another dimension of the administrative structure is the organisation of the functional units. *Figure 5* illustrates the structure of the functional units by levels that are relevant to the operation of the ecological resettlement projects in my case study. I categorise them into four types according to their role in ecological resettlement: planning, financing, implementation and assessment.

Policy-making involving ecological resettlement has been at and above the county level of administration. The Weizhuan Office (Weizhuan Ban in Chinese) and the Ecology Office (Shengtai Ban in Chinese) has been set up at the league and county levels for governing environmental programme activities. A Leader’s Working Group, which is composed of the county head and the head of each functional unit at the level, is affiliated to the Ecology Office and holds regular meetings to supervise the progress of the programme activities. A population transfer centre is also affiliated to facilitate the transfer of the pastoral population to the city. It should be noted that functional governmental units generally stop at county level but their functions are combined and are represented by the leadership at the township level. The task of implementing ecological resettlement falls mainly on the
Figure 5. The functional units of the state administration related to ecological resettlement.
shoulders of county and township level cadres\textsuperscript{34}. In the mobilisation phase, township leaders together with village leaders are the representatives of the state who deal with pastoral households.

**Greening western China**

The first policy context in which I place ecological resettlement is the state’s strategic initiative to develop western China. Economic reform started from the eastern coastal areas of China with the state’s ‘belt and ladder strategy’ (Fan 1995), which intentionally prioritised development of the east. The achievements of reform in China have simultaneously reinforced two imbalances over spaces, rural-urban and east-west. The economic and social divides between east and west were growing. There was an increasing debate in the 1990s on whether the severity of regional disparity had come to threaten social stability and the national unity in the higher ethnic minority region and the border regions of the west. The state announced a shift in the priority of regional development to the west at the end of the 1990s. The Western Development Strategy was enacted by the state council in 2000 (State Council of China 2000a, Guofa 2000 No. 33). This significant move was related to the above debate but researchers also suggest more complex reasons for the state to take actions exactly at the time.\textsuperscript{35}

“To strengthen eco-environmental protection and construction” is addressed as one of the key tasks of implementing Western Development Strategy in elaborating the strategic objective.\textsuperscript{36} ‘Ecological construction’

\textsuperscript{34}Cadre (Ganbu in Chinese) refers to a public official holding a full-time responsible or managerial position in government. The cadre system is similar to civil service systems to other countries.

\textsuperscript{35}The suggested reasons include: it was necessary to give a real boost to the economy of the western region for the sake of China’s long-term economic development when the coastal region was losing its momentum at that time (Onishi 2001); the state was under huge pressure to seek new sources of growth and stimulate domestic demand after the Asian financial crisis (Chen and Zheng 2008:21; Lai 2002:441); there was also the need for continuing reforms through restructuring economic sectors and state firms (Lai 2002; Onish 2001); according to the Chinese development philosophy, the time had come to shift the focus from the coast to the interior, which was also to alleviate the discontent of the west for being exploited during the wealth growth of the east (Lai 2002).

\textsuperscript{36}The strategic objective is stated in the guiding document The State Council’s Notification Regarding Implementing Several Policies and Measures of Western Development (State Council General Office, Guofa 2000 No. 33) as the following: “In the present and later period of time, the key tasks of implementing western development are: to promote infrastructure development; strengthen eco-environmental protection and construction; consolidate the foundation status of agriculture, adjust industrial structure, develop characteristic tourism, develop technology, education, culture and health sectors. It will take five to ten years to make breakthrough development in the infrastructure and eco-environment construction of the western region and to achieve a good start of the western development. It will take to the
was set as one of the iconic engineering programmes that the state would focus on, investing in its first phase (2001-2010). The relevance of the environmental dimension in developing western China has been especially addressed in relation to the control of soil erosion and desertification (Shen 2004), and co-ordination of the water supply between the east and west (Lai 2002). Sasaki even argues that environmental problems such as desertification were used by regional officials to justify the inclusion of Inner Mongolia in the geographic scope of the western region, so it would consequently be a part of the Western Development territory (2001:23). The environmental objectives have been mostly committed to national large-scale environmental programmes, such as Returning Farmland to Forestry, Beijing-Tianjin Sandstorm Source Control, Returning Rangeland to Grassland, Natural Forestry Protection, Key Shelter Forestry, Water and Soil Conservation, Ecological Key County Comprehensive Treatment, Natural Grassland Protection and Construction, and Returning Farmland to Forestry Consolidation. Their attempts by these environmental programmes to “restore the ecological functions of the degraded ecosystems” in western China were quite different from the focus of environmental governance on solving industrial pollution in eastern China. The increased weight of conservation in environmental governance was related to another policy background in which the state claimed the change of environmental protection approach from “a heavy focus on pollution prevention to a balanced approach of addressing pollution prevention and ecological protection at the same time” at the 4th National Environmental Protection Conference in 1996 (SEPA 2002, Guofa 2002 No. 56).

By arranging ecological resettlement in western China, I assume that the policy approach of ecological resettlement was partly structured by the policy of developing western China. Nevertheless, as critical researchers argue, the political birth of the Western Development Strategy was so complex that the aims and content appear imprecise and even hostage to the various elements within the state’s decision-making process (Goodman 2004; Sasaki 2001). I would be especially interested in examining how the environmental aim has actually been put forward in the specific practice.

Controlling sources of sandstorms to Beijing

The ecological resettlement projects in this case, as in most of Inner Mongolia, are subordinated to the Beijing-Tianjin Sandstorm Source Control Programme. As I said in the first chapter, the Programme was launched with the objective of reducing the occurrence of sandstorms in North China, especial-
ly those affecting the national capital Beijing. The master plan of the programme claimed that, “the objective of the programme was to improve the ecological environment in the capital city and upgrade the international status of Beijing for a green Olympics and secured harmonious economic and social development in the region” (SFA 2010). Many researchers, such as Liu and Diamond (2005) thought that the actual and potential social and economic costs related to sandstorms were the main driving force to push the issue up the national agenda. In addition, the image of the country to the World constituted a time-contingent driving force since Beijing had committed to host a Green Olympic Games in 2008.

The programme was quickly launched after the spring sandstorms in 2000. This was enabled by direct intervention from the top national leaders (China’s Green Times 2006). A few days right after strong sandstorms swept Beijing in April 2000, the vice Prime Minister Jiabao Wen held a special state council meeting, inviting officials of relevant departments and experts to discuss the causes of sandstorms, and coping strategies. Then during May 12 to 14, the Prime Minister Rongji Zhu in the company of officials of relevant departments, visited the identified sources of sandstorms, which are areas to the north of Beijing in Hebei province and Inner Mongolia Autonomous Region. This visit established the link between sandstorms and these places. On June 5, a party meeting of the state council approved the emergency launch of the pilot project of the Beijing-Tianjin Sandstorm Source Control Programme in a few selected areas. After two years of experimentation, the programme was formally approved by the state council in 2002.

A large territory to the northwest of Beijing, about 458,000 km$^2$, is classified as the programme area (see Figure 6). This contains seventy-five county-level units in five province-level units, and nearly twenty million people live within the programme area. About 80 per cent of the programme area is in the territory of Inner Mongolia, which contains thirty five county-level units in five prefecture-level units. All the twelve county-level units of Xilingol League are involved. According to policy-makers, sand and dust going into the air currents of the Beijing area follow three routes from the northwest and northern directions and two of them go through Xilingol League. City Q including Xilitu Sumu was identified as one of the key source areas of sandstorms and it was also chosen as one of the national spots for monitoring sandstorms. A range of measures have been adopted

---

37 According to Liu and Diamond (2005), economic losses caused by dust storms amount to about 540 million US-dollars per year, and by desertification about 7 billion US-dollars per year. In addition, loss of life occurs sometimes.

38 The three routes are: one from Hunshandake sandland to Hebei Bashang and to Beijing; another from Zhurihe to Yanghe valley through Yongdinghe valley and to Beijing; and the third from Sangganhe valley and its upstream to Yongdinghe valley to Beijing.
under this programme including ecological resettlement.\textsuperscript{39} The basic policy approach to achieve the objective of improving ecological environment is through improving the identified sources of sand - the degraded land cover.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure6}
\caption{The geographical scope of the Beijing-Tianjin Sandstorm Source Control Programme. Map by Xueqiong Wei.}
\end{figure}

\textbf{Ending ‘the tragedy of the commons’}

The third policy context of ecological resettlement is the state’s pastoral development policy. Similar to experiences of other pastoral communities worldwide (Ensminger and Rutten 1991), changes in the pastoral areas of China have largely been subjected to external and top-down policy interventions from the state. Experts argue that environmental policies have become the strongest driving force to change China’s pastoral areas during the last decade (Foggin 2008; Wang 2009; Yeh 2010). Nevertheless, before the rise of environmental anxiety about sandstorms, pastoral development policies motivated by social and economic objectives had a much longer history.

\textsuperscript{39} The measures for improving forestry include planted afforestation, aerial seeding afforestation, farming land forest net, blasting afforestation, enclosure afforestation, conversion of farmland to forestry and afforestation of landfills, waste land and waste sand. The measures for improving grassland include man made grass plantation, aerial seeding grass plantation, enclosure, basic grassland construction, construction of a grass seed base, grazing ban, warm pens and supply of feedstuff machinery. Source: SAF (2010).
Although the vast landscape and mobile ways of living are often imagined by outsiders as romantic, the living conditions and methods of production are perceived as primitive, backward and outdated. As elsewhere, the ill-adaptation of pastoralism to ‘modern’ contingencies is assumed to generate its own impoverishment (Little et al. 2008). In China, ‘being dependent on the sky for food’ (Kaotian Chifan in Chinese) is a very frequently used negative notion to address problems of mobile pastoralism in policy documents. To sedentarise and modernise nomads has been the main direction of social and economic development policy (Brown et al. 2008; Foggin 2008; Harris 2010; Zhao 2011). The central government has also been sponsoring the construction of houses. The purpose is said to be to improve pastoralists’ living conditions and also to facilitate the adoption of more advanced way of production, which are associated with sedentary infrastructure, resources and technologies. Pastoralists in Inner Mongolia were the earliest and most sedentarised compared to other pastoral groups.

Since economic reform, the state has adopted a market-oriented approach to promoting household-contracting-based land resource management in agricultural areas of China, in which HRS has become the organising principle of rural land laws and policies (Schwarzwalder et al. 2001:1). The Inner Mongolia government adopted a similar policy, the ‘Rangeland and Livestock Double Responsibility System’ (Caoxu Shuangchengbao Zerenzhi in Chinese), to promote privatisation in pastoral areas. As I have introduced earlier, this policy was practiced through livestock redistribution and land privatisation in Xilitu Sumu. The prime aim of establishing land privatisation was to stimulate the productivity of individual pastoral households, and to increase the supply of commodities in the market. The state also explicitly assigned the pastoral areas as the base of meat and dairy production in the

Management of rangeland varies widely across China. Rangeland together with livestock was distributed to households in the 1980s when the reform started. Nevertheless, the formalisation of rangeland tenure did not start until 1993 and the tenure period was extended to 30 years from 15 years at the beginning. Published figures for the percentage of contracted rangeland include 95 per cent in Xinjiang, 90 per cent in Gansu, 80 per cent in Sichuan, and 80 per cent for Inner Mongolia (Schwarzwalder et al. 2004:5). Not all of China’s pastoral areas have implemented the HRS. Some have kept the pastureland as a common resource (Banks 2001), or demarcated household pastures only on paper (Thwaites et al. 1998), or fenced the pastureland only partially (Williams 2002). The great variation is attributed to differing priorities of regional and local governments, which are responsible for the actual implementation of many of the reform policies. Peter Ho (2001) said that if one asked local officials, they would say 100 per cent of land has been allocated under the household contract responsibility system. If asked further, they would say this was a ‘look good’ paper figure sent to the Inner Mongolia regional office as grassland regulators tried to please policy-makers. Actually, most officials understand the realities of village-based grassland management where there were informal arrangements for sharing resources. The effects of land privatisation will be discussed later in the specific context of the study area.
1990s (Aorenqi 2003). As a result, the level of household income in Xilingol League indeed ranked high at the national level.

Institutionalisation of land privatisation has proved to be a long and complex process (Banks 1998; Ho 2001a; Thwaites et al. 1998; Williams 2002; Zukosky 2008). In agricultural areas, institutionalisation was also later argued to be necessary for securing land access and ensuring sustainable ways of using land (Muldavin 1996). Meanwhile, in pastoral areas it was more and more argued to be necessary for terminating ‘the tragedy of the commons’ (Banks 2003:2130; Li and Zhang 2009). Increasing environmental concerns about problems of desertification and grassland degradation in the late-1990s drove pastoral development to become more motivated by environmental objectives rather than by production- or output-oriented objectives. Policy-makers tended to blame ‘open access’ and overgrazing during the collective period for causing grassland degradation. Following the neoclassical logic, policy-makers called for complete enforcement of household land rights so as to leave no “open access”. This means that land titling has also become a structure to control grassland degradation since then. On top of that, the stocking rate is enforced as the main measure to control household livestock numbers. In general, policy-makers have applied more restrictive rules to pastoralism for the sake of controlling grassland degradation.

Conclusion

This chapter has sought to contextualise ecological resettlement in relation to the peripheral position of the case study area. First of all, ecological resettlement has been carried out most in the less developed western China. The high percentage of grasslands and ethnic minority population make ecological resettlement a particularly highly relevant issue to ethnic minority pastoralists. In Inner Mongolia, these are Mongolian pastoralists. The origin of ecological resettlement in this case study of Xilitu Sumu, located in Xilingol League which keeps the best traditions of Mongolian pastoralism, is a peripheral small township inhabited by four hundred pastoral households. Pastoralism remains the way of living and the main source of income on this desert steppe with highly varied climate. Similar to pastoral communities elsewhere, the social and economic life in the pastoral villages of Xilitu Sumu have undergone tremendous changes following continued policy interventions. Sedentarisation and land privatisation together tend to drive the sedentary practice of pastoralism within the territory of allocated household rangeland. Nevertheless, land rights remain incomplete, ambiguous and even more disputed nowadays. The destinations of ecological resettlement, in contrast, are associated with more modern and industrialised settings.

Ecological resettlement in this periphery is embedded in three policy contexts: the comprehensive Western Development Strategy, which sets envi-
Ronmental protection as one of its objectives, the Beijing-Tianjin Sandstorm Source Control Programme, which is intended to address the perceived threat of sandstorms to the capital Beijing; and pastoral policies which seek to handle the grassland degradation problem, or ‘the tragedy of the commons’ through further sedentarisation, clarification of household land rights, and control of livestock numbers. These policy contexts intersect with each other to structure the policy and practice of ecological resettlement in a specific place.
3. A political ecology study of China’s environmentalisation

This chapter comes back to the discussions in the introductory chapter about my theoretical approach. It aims to work out a nuanced approach to political ecology for theorizing about China’s environmentalisation. Scholarship of environmental politics has so far contributed most to improving understanding of the role of political factors in China’s environmental trajectory. The scholarship in general suggests the state is the authoritarian actor which takes “a non-participatory approach to public policy-making and implementation in the face of severe environmental challenges” (Gilley 2012:287) despite the increasing opportunities for non-state actors’ participation (Carter and Mol 2007; Kostka and Mol 2013; Wu 2009). Nevertheless, this state is not a coherent entity but is composed of agents and institutions with competing interests. Structural divides within the state, both between levels and at the same level, raise significant challenges to effective environmental governance (Economy 2004; Lieberthal 1997; Tilt 2007). However, the emerging ecological modernisation approach in the field seems to ignore the complex power relations by promoting technocratic and market-based interventions as positive signs of approaching ecological sustainability. My aim is to deepen the explanation of the environmental state’s trajectory by better theorizing about power relations. I seek to combine insights into the state power from political scientists in the field of environmental governance with theories from political ecology. Scholarship on political ecology offers a richer imagination of power and politics in relation to the human-environment relationship. While previous applications of political ecology to Chinese cases are mostly driven by the interest in understanding “the mutual implications of the socialist transition for nature and politics” (Muldavin 2007), often with the focus on resource access and agrarian questions, I seek to bring in a wide group of theoretical debates on political ecology, which are yet to be considered in discussions on empirical cases concerning China’s environmental issues. I draw insights from three aspects: the changing ways of understanding power and power relations in governing environment, the construction of environmental knowledge, and the multi-scalar analysis of environmental issues.

The chapter begins with a short review of the different ways of approach-
ing power and power relations in studying China’s environmental politics. It then discusses the changing ways of looking at power in the three phases of political ecology, from being conceived as structural, repressive and material, to being conceived as constructive and immaterial, and as capillary and productive. The discussion especially highlights how state power and the agency of the people have been theorised in the different phases, and what is peculiar about the application to China. Next, I discuss debate on the construction of environmental knowledge, with a focus on rangeland ecology. In the final section, I discuss how the theorisation of scale can enrich the analysis of the multi-scalar processes of ecological resettlement.

Approaching the authoritarian environmental state

Scholarship on environmental politics indicates that, the governing structure, bureaucratic hierarchy, policy-making and implementation processes, and regulatory patterns are critical for understanding the challenges of China’s environmental governance (Wu 2009). While debating the causes behind an obvious paradox, they suggest there is a large gap between the central state’s policy efforts and the ineffective local implementation outcomes, and they also suggest at least three types of structural divide exist within the state. The first divide is ‘fragmented authoritarianism’ (Lieberthal 1997). This model informs us that although the state holds the greatest decision-making power in producing grand policies, programmes and discourses, when it enforces its will down through the complicated bureaucratic political system from the centre to the local, the will is fundamentally constrained by the barriers between different functional units at the same level (Tiao in Chinese) and different interests within the same functional unit at different levels (Kuai in Chinese). Although this is a generic feature, due to the cross-sectoral nature of most environmental issues, this structural problem is more prominent in environmental governance.

The second type of divide is the relationship between the central and local state. As Lieberthal states, “China’s present political system operates in a rather fluid fashion, with great local variation, considerable opportunity for local initiative, and tremendous pressure on local officials to give priority to rapid economic development” (1997:8). Decentralisation is said to challenge the central state’s control over the local state, especially in enforcing environmental mandates. Therefore, an implementation gap is caused by the obstacles in local environmental politics. Researchers argue that local officials do not implement the central policies properly due to the pursuit of economic growth at the cost of environmental damage (Economy 2004; Lo and Tang 2006; Mol and Carter 2006; Tilt 2007); and they tend to prioritise economic, political and social interests ahead of environmental ones in the local political agenda (Wu 2009). As a result, the differences between ad-
ministrative and political cultures in regions become crucial to the policy processes (Xun and Bao 2008). Decentralisation is not only associated with problems in policy implementation but also, as Jiang (2006) argues, to problems in policy formulation. Local authorities have more power in formulating environmental strategies and specific policies but local decision-making does not mean this power better suits the local needs. Instead, Jiang’s (2006) case shows that local environmental policy is against the local ecological conditions and undermines environmental sustainability. However, the extent of decentralisation should not be overestimated. Anyway, decentralisation in China is not free flow but granted, directed and controlled from above by the centre to spur economic development. The state remains centralised and unitary to a large extent, especially in critical circumstances.

The third type of divide lies in the incentive structures set by the central state for encouraging the local state to implement the central policy appropriately. While the central state depends on repressive mechanisms such as the cadre performance evaluation to discipline the local state agents (Laundry 2008), incentives have become important mechanisms for achieving state objectives. Nevertheless, incentives can work against their objectives. For example, the cadre promotion system in which local state agents must strive to impress higher level authorities through visible economic achievements has driven local agents to make irresponsible decisions and misuse resources (Cai 2004). ‘Selective policy implementation’ behaviour, in which village cadres choose to implement some central policies instead of others, is found to be partly caused by the central state’s incentives (O’Brien and Li 1999). More specifically, Ran’s (2013) analysis argues that the local implementation gap in environmental policy is partly produced by the central government’s failure to provide proper political, financial and moral incentives to the local governments.

Despite the above ‘constraints’ views, another group of views addresses how the political system enables things to happen. Laundry (2008) suggests that the Chinese political system is institutionally highly adaptive to fostering desired political and economic objectives. The central state has also sought to be more innovative in adopting more administrative measures and tools such as binding environmental targets to enhance the local state’s compliance (Kostka and Mol 2013). The optimism is most obvious in the ecological modernisation approach which relates the political obstacles to enforcing effective environmental policy only to China’s current transition phase. Mol (2006) reasons that, unlike industrialised countries, transitional countries are used to having a dominating political structure, and this character continues to structure the field of environmental governance, and the character of environmental policies tends to be moderate and selective since too many other pressing problems exist.

Based on evaluating the dynamics, mechanisms and actors at work in the processes of China’s environmental reform, Mol (2006) argues that ecologi-
cal modernisation is an ongoing trend in China. The ecological modernisation model has its origin in northern European countries with social democracies about three decades ago. Promoters of the model argue that the success in northern Europe provides a guide to its implementation in China and other countries that are transiting from socialism to capitalism (Fisher 2002; Mol 2002, 2006; Mol and Spaargaren 2000, 2002; Zhang et al. 2007). Muldavin (2007) identifies two currents of ecological modernisation. One is the Keynesian variant, whose position has been put forward by the World Bank, the Chinese state and other policy-makers, and which asserts that “a strong regulatory and interventionist state can limit the negative environmental externalities of the transition to a capitalist economy”. The second is the Cornucopian variant, which has been put forward by researchers, and which asserts that “the technological advances that accompany the transition to an advanced industrialised country will resolve the environmental impacts of rapid industrialisation” (250). The core message of ecological modernisation is to argue for the compatibility between environmental protection and economic growth. Nevertheless, ecological modernisation may frame the road China is taking now, although with its combination of modernisation, technological advancement and resolution of environmental problems, there is no guarantee it will lead to a sustainable future as is assumed by the theorists. As Huan (2007) argues, it might be the only realistic road but definitely not the green one. The problematic local consequences of ecological resettlement and distributive effects of other green actions have raised realistic challenges to the assumption of ecological modernisation (Yeh 2009).

Alternative theoretical frameworks other than ecological modernisation are needed to scrutinise the state’s current environmental strategies and actions. The belief in markets, growth and technocratic interventions fundamentally relate ecological modernisation theory to the critics of neoliberal economic discourses (Muldavin 2007). Besides questioning the transferability of the Global North experiences to the South, Blaikie also makes the criticism that ecological modernisation has “little to say about power relations which permeate the socioeconomic processes which help to shape environmental processes and outcomes, as well as their representations and framings” (2000:138). My aim in this study is to deepen the explanation of the environmental state’s trajectory by better theorizing about power relations. I combine the above insights into state power with theories from political ecology. The above views of state power, although insightful, have limited the imagination of state power to a hierarchical and repressive sense. Moreover, the agency of non-state actors, especially the local people, has not been considered enough. The following discussions of political ecology scholarship thus intend to expand the ways of thinking about and analysing power and politics in relation to the human-environment relationship.
Proposing a political ecology study of China’s environmentalisation

Political ecology has a wide range of definitions (Robbins 2004:6), it contains a large array of topics (Neumann 2005) and works across an expanding fluid and ambivalent space that lies between disciplines (Biersack 2006), which makes it less “a coherent theory” but rather an approach with “similar areas of inquiry” (Peet and Watts 1996:6). To summarise, the engaging point of political ecology is to analyse the power relations that mediate human-environment relations (Bryant 1998) and to reveal how and why different political interests and actions of various actors impact environmental management and natural resource use. Although political ecology has been widely applied to empirical analysis from a variety of biophysical and cultural settings in the third world (see e.g. Bassett 1988; Bryant 1992, 1998; Bryant and Bailey 1997; Moore 1993, 1996; Peet and Watts 1996; Zimmerer and Bassett 2003; and more case studies in the Journal of Political Ecology), it has only been limitedly applied to studying environmental problems in China (see e.g. He 2010; Hershkovitz 1993; Jiang 2003, 2006; Muldavin 1996, 1997, 2000; Tiit 2007; Yeh 2009; Yundannima 2012; Zukosky 2008).

A common interest of these studies is to examine the mutual implications of the post-socialist transition for nature and politics (see e.g. Hershkovitz 1993; Muldavin 1996, 1997, 2000). The processes of China’s post-socialist transition have created a new set of land-related arrangements, which have profoundly changed the patterns of production and resource use, and have significantly altered the relationships between the state, the collective, peasant households, and individuals. By adopting Blaikie and Brookfield’s (1987) classical approach of political ecology, which emphasises political economy, and historical and multi-scalar structural analysis, these studies suggest that the rapid and unregulated economic growth during China’s transition has led to the intensification of old environmental problems and created new forms of environmental degradation in rural China. Recent studies have sought to follow the developments in the field of political ecology to combine political ecology with other social theories conducting critical examinations of discourse and knowledge construction (Jiang 2003, 2006; Yundannima 2012), and reconceptualizing the state power and subjectivities (Yeh 2005, 2009; Yundannima 2012; Zukosky 2008).

The approach of political ecology has also rarely been incorporated into the empirical analysis of ecological resettlement. However, a few insightful works on ecological resettlement have raised similar concerns with political ecology (Bao and Xun 2007; Xie 2010). The basic theoretical assumption of political ecology is that there are different actors and interests surrounding the controls of natural resources, but given the unequal power relations, actors can impact environmental management and natural resource use differ-
ently. Bao and Xun (2007) have drawn attention to a fundamental mismatch between the state’s policy and the local practice caused by the contradictions of interests between the central and local states, while Xie (2010) demonstrates the contrast between the state’s hegemonic and simplified developmental logic and the indigenous culture and knowledge. In my materials, the relevant actors, the central state, the local state and pastoralists all had different interests regarding their (dis)engagement with ecological resettlement. While the central state called for ecological restoration and poverty alleviation, the local state related ecological resettlement to the objectives of industrialisation and urbanisation, and pastoralists had varied economic, social and cultural concerns. These varied interests directed different actions composing processes at different scales and across scales. Therefore, I see the potential of adopting political ecology for the analysis of ecological resettlement. In the following part of the section, I will discuss how I understand the threads of thought in political ecology which I draw on for analysing China’s environmentalisation.

Changing ways of conceptualising and analysing power in political ecology

I classify the development of political ecology into three phases according to the different ways of conceptualising and analysing power. In the first phase, power is conceived as top-down, structural, negative, repressive and material. Early political ecology studies “combine(s) the concerns of ecology and a broadly defined political economy” (Blaikie and Brookfield 1987:17). They basically conceptualise local resource uses, which revolve around the control of nature and labour, as being structured by a larger social engine. Based on the analytical model “chain of explanation” (Blaikie 1985; Blaikie and Brookfield 1987), the causal linkages in driving degradation can be traced from the local up to the forces at the national and global scale. The framework continues to be popularly adopted in studying land use issues (Andersson et al. 2011; Bassett 1988; Kinlund 1996; Kull 2002; Moore 1993; Peluso 1992; Vásquez-León and Liverman 2004; Widgren 2012). The model contributes two influential analytical approaches to geographical studies: to “differentiate between proximate and ultimate causation” (Neumann 2008:731), and to deploy the structure-agency binary. A power relationship is conceptualised as oppositional and confrontational. Analysis is focused on the dialectic society-nature relationship, classes and inequality. Environment is viewed as an arena in which conflicts such as those between the elite and the poor, the state and the community, or outsiders and locals unfold (Bryant 1996:221-225).

In the second phase, power is conceived to be constructive and immaterial. By incorporating post-structural theories, political ecology studies shift
the analytical focus to discerning the social processes of discourse and knowledge production (Bassett and Zueli 2003; Bryant 1998; Fairhead and Leach 1995, 1996, 1997; Forsyth 2003; Leach and Mearns 1996; Peet and Watts 1996; Robbins 2000; Stott and Sullivan 2000). It is believed that “there can be no materialist analysis of development (and environment) that is (are) not, simultaneously and correspondingly, a discursive analysis” (Neumann 2005:94). This is to some extent a response to the increasingly complex evolution and interactions between knowledge and environmental policy (Keeley and Scoones 2000; Robbins 2000). This is also a critique of the ‘main stream’, ‘orthodoxy’, ‘myths’ and ‘received wisdoms’ (Leach and Mearns 1996), ‘populist discourses’ (Adger et al. 2001), often degradationist narratives, in accounting and imagining people, animals and environment, especially in the African contexts (Fairhead and Leach 1995, 1996, 1997; Hammer 2004; Leach and Mearns 1996; Neumann 1998; Stott and Sullivan 2000; Sullivan 2000; Swift 1996). Development and environmental discourses have become the main force in shaping the outsiders’ understanding of the problems and interventions concerning certain regions and peoples in the developing countries, but as Sullivan (2000) criticises, many of them have become accepted as “fact” in the absence of “scientifically derived” data. On top of that, these studies criticise the policy actions for grounding themselves on these ill-founded accounts. These accounts and narratives are entrenched and still sustained nowadays because of the scientists’ authority in knowledge, and the government’s and non-governmental organisations’ power and interest to act on this knowledge. It is apparent that the meaning and analytical use of power are different from the first phase. While power is still conceived to be repressive and coercive, it no longer exists only in the realistic and material conflicts over access to resources. Instead, power constructs another equally significant immaterial dimension of the processes. Meanwhile, power is not only analysed in the shape of a hierarchical structure but also as regards networks.

In the third phase, power is conceived as capillary and productive when incorporating Foucault’s (1977, 1980, 1982, 1991, 2008) way of imagining power, especially governmentality studies. Although nature was rarely included in Foucault’s own analyses (Rutherford 2007), the lens of governmentality has been actively incorporated into political ecology in different ways. Rutherford (2007) argues that governmentality offers a promising analytical terrain to geographers interrogating the intersections between nature, power and society. Scholars have coined terms such as green governmentality (Luke 1999; Rutherford 2007; Watts 2003; Yeh 2005; Kolás 2014), eco-governmentality (Goldman 2001), environmentality (Luke 1995; Agrawal 2005) and neoliberal environmentality (Fletcher 2010) to integrate the governmentality perspective into political ecology.

Governmentality is “a distinct new form of thinking about and exercising power in certain societies” (Dean 2010:28), and “the ways in which the state
constitutes its own objects of governance” (Painter 2005:56). It is a new observation and reflection upon the limits of the old art of government of the state. However, this theoretical approach founded by Foucault does not constitute a unified paradigm. It is not some sort of grand theory merely to be applied to the field of geography (Rose-Redwood 2006:470). Moreover, as Fletcher shows, the governmentality concept also “has inspired substantial confusion” (2010:173) because governmentality is deployed in different ways by inspired scholars, including “in ways that belie its original formulation” (Rutherford 2007:292). Therefore, it is necessary to specify the key concepts and theoretical positions both within Foucault’s own history of thought and the inspired governmentality studies.

The key concept, government, is defined by Dean based on Foucault (1991) as “any more or less calculated and rational activity, undertaken by a multiplicity of authorities and agencies, employing a variety of techniques and forms of knowledge, that seeks to shape conduct by working through the desires, aspirations, interests and beliefs of various actors, for definite but shifting ends and with a diverse set of relatively unpredictable consequences, effects and outcomes” (2010:18). Government emerges to identify a new form of power from two older forms, sovereignty and discipline. Upon observing the changing art of government of the state in the early modern period of Western European Societies, Foucault claims that governmental power has become a more important form of power than sovereign power and disciplinary power due to the pressing concern with the welfare of the population. While the purpose of sovereign power is to exercise authority over the subjects of the state within a definite territory, the purpose of disciplinary power is to regulate and order the number of people in that territory, and government, “by contrast, regards the subjects, and the forces and capacities of living individuals, as members of a population, as resources to be fostered, to be used and to be optimised” (ibid.:29). However, government does not replace sovereignty and discipline but rather “recasts (sovereignty and discipline) within this concern for the population and its optimisation, and the forms of knowledge and technical means appropriate to it” (ibid.:30). The three forms of power are not mutually exclusive but may coexist, overlap, work together and conflict. However, Foucault’s use of the term ‘governmentality’ “progressively shifts from a precise, historically determinate sense, to a more general and abstract meaning’ as his lectures proceed” (Fletcher 2010:173). The meaning of government in the early works of Foucault seems to be very close to that of disciplinary governmentality in his later work.41 Meanwhile, Foucault came up with another concept biopol-

---

41 Foucault’s articulation of the three forms of power has changed from the above triad in his early work (1991) to four governmentalities in the later one (2008): sovereign governmentality (“according to the rationality of governing a territory through compelling subjects’ obedience to sovereign will by direct threat of punishment”), disciplinary governmentality (“through the internalisation of social norms and ethical standards to which individuals con-
tics/biopower, which “is concerned with the administration of the conditions of life of the population” (Dean 2010:266). He contrasts sovereignty with biopolitics as the “right of death and power over life” (Foucault 1977). Biopolitics’s concern with the total population also distinguishes it from disciplinary governmentality which is concerned with individuals (Rutherford 2007).

To incorporate the governmentality perspective in political ecology is an attempt to better theorise its core concepts - politics and power. Despite being taken as the prime driver of the causes and effects of resource management, politics and power are often taken as being pre-existing. Previous political-ecological analyses ignored the fact that politics and power are themselves a consequence of processes. Luke coined the concept ‘environmentality’ (1995) and the term ‘green governmentality’ (1999) to apply the thought of governmentality to the analysis of environmental issues. While his intention was to examine how regulation works as an attempt to control or dominate environmental policy and activities, later studies (Agrawal 2007; Li 2007; Luke 1995, 1999; Neumann 2001; Peluso and Watts 2001; Sundar 2001) used the concepts to investigate how the “technologies and institutions are self-imposed” (Robbins 2004:179) by creating “environmental subjects” (Agrawal 2005) or “educating desires and configuring habits, aspirations and beliefs” (Li 2007:5). According to Fletcher’s (2010) typology of environmentality, these studies have been concerned with the disciplinary sense of environmentality.

In my view, governmentality has contributed to a new way of conceptualizing power in political ecology in at least five ways. First of all, power is not about violence or physical relations of constraint but rather about freedom; it is a process of guiding the conduct of others. This is the need of governing at a distance. As Li reasons, “at the level of population, it is not possible to coerce every individual and regulate their actions in minute detail” (2007:5). The process draws attention to the mechanisms by which individuals and social groups internalise the will of the government (Robbins 2004). Meanwhile, “when power operates at a distance, people are not necessarily aware of how their conduct is being conducted or why” (ibid.). Secondly, power is not preserved, possessed or acquired by any subjects but it exists in practices. Accordingly, power may not be in the hands of authorities. The form due to fears of deviance and immorality, and which they thus exercise both over themselves and one another”), neoliberal governmentality (“through building and manipulating market-based incentive structures to motivate self-interested rational individuals to exhibit appropriate behaviours”) and truth governmentality (“according to claims concerning humans’ essential interconnections with nature”) (ibid.:311-313). They operate according to different principles but “overlap, lean on each other, challenge each other, and struggle with each other”.

sites of governing are multiple. Power relations between authorities and individuals are conditional and unstable. Government presumes that the primary freedom of those who are governed is manifested in their capacity to act and think (Dean 2010:24). Thirdly, power is ubiquitous or “capillary”, and “permeates …how (individuals) learn to live and work with other people” (Foucault 1980:39). This means that power is not only related to grand actions and interactions but it lives in everyday and unremarkable practices. Fourthly, power is not merely negative or repressive but productive of “reality …domains of objects and rituals of truth” (Foucault 1977:194). The productive nature of power is intimately related to knowledge and also to subject formation. Fifthly, a power relationship is more than oppositional and confrontational. A power relationship should be seen as more than a relationship between the powerful state and weak people. It also challenges the conflation tendency, wherein the elite is associated with power as part of the state, and the poor are associated with resistance as part of locally situated communities.

Rutherford (2007) highlights three key aspects of governmentality that might be useful for examining environmental politics - the analytics of power, bio-politics and technologies of the self. Rather than identifying the abstract centre of power, an analytics of government is interested in the discrete domains which “set(s) conditions” (Li 2007:5), and “examines the conditions under which regimes of practices come into being, are maintained and are transformed” (Dean 2010:31). In my analysis, I especially draw on the analytics of power, which are used to analyse how government is operationalised. Dean proposes that it is possible to distinguish at least four dimensions of conducting an analytics of government. The first is to analyse the distinctive ways of thinking and questioning. This means to take “the approach to government as rational and thoughtful activity” (ibid.:42). Political rationalities seek to render particular issues or problems governable and the practices of governing give rise to specific forms of truth. The task of analysis is thus to identify the forms of thought, knowledge, expertise, strategies, means of calculation, or rationality that are employed to inform the activity of governing. Many geographers account for governmentality in terms of the mechanisms of knowledge production that states have used to constitute their subjects and territories as “governable” (Rose-Redwood 2006). Mapmaking and the collection of statistics are typical mechanisms to “operationalise governmental rationalities and construct the very ‘objects’ of government as in some sense ’knowable’” (ibid.:475). The second dimension is to analyse the characteristic ways of seeing and perceiving. All the ways of visualizing fields to be governed “make it possible to ‘picture’ who and what is to be governed, how relations of authority and obedience are constituted in space, how different locales and agents are to be connected with one another, what problems are to be solved and what objectives are to be sought.” (Dean 2010:41). The third dimension is to analyse the specific ways
of acting, intervening and directing. It asks by what means, mechanisms, procedures, instruments, tactics, techniques, technologies and vocabularies authority is constituted and rule is accomplished because the technical means are a condition of governing and often impose limits over what it is possible to do (ibid.:42). The fourth dimension is to analyse the characteristic ways of forming subjects. Regimes of practices do not determine forms of subjectivities but they “elicit, promote, foster and attribute various capacities, qualities and statuses to particular agents” (ibid.:43).

Although governmentality was initially interested in the history of changing forms of governmental authority and practice in liberal West modernity, an increasing number of studies have demonstrated that governmentality as an analytical optic, is relevant to non-liberal non-Western modernity (Agrawal 2005; Birkenholtz 2009; Li 2007), including contemporary China (Dean 2010; Jeffrey 2009; Sigley 1996). Dean states that governmental rationalities in non-liberal contexts should be noted for “the different elements of sovereignty and bio-politics they accentuate and the different ways they articulate them” (2010:173). A new concept, ‘authoritarian governmentality’ is introduced to refer to a different kind of governmental rationality which aims to “operate through obedient rather than free subjects, or at a minimum, endeavour to neutralise opposition to authority” (ibid.:155). In Jeffreys and Sigley’s (2009) view, China’s early socialist governmentality “shares a close geology with the Western liberal governmentality for the concern with the biopolitical management of life” but the fundamental difference is that China’s socialist governmentality thinks that “through the science of Marxism-Leninism it was possible not only to ‘know’ the object to be governed, but also to predict the precise outcome of a possible intervention” while liberal governmentality accepts a concept of limited government (6-7). Therefore, socialist governmentality may facilitate more direct and coercive technocratic interventions while liberal governmentality employs a series of indirect methods of shaping the conduct of the governed objects.

The application of government to analysing Chinese society and politics is closely connected to the context of China’s transition from a socialist planning economy to market-oriented economy. During this process, a series of dramatic transformations have taken place in economic, social, political and cultural fields. Jeffreys and Sigley (2009) highlight changes in the nature of governmental thinking in the transitional era – the shift from socialist principles of government to integrating more neoliberal governing strategies. New mechanisms, such as market mechanisms and autonomy, have become “part of the new echnoscientific-administrative Party-State” (ibid.:7). Moreover, studies over time seem to suggest that China’s contemporary practices of government have been changing quickly. Sigley’s (1996) study of China’s one child policy in the 1990s claims that the government used techniques that were different in significant respects from those deployed in liberal government. Notably, there was a reduced role of professional expertise and a
reduced emphasis on the construction of a self-governing subject. However, in another theoretical article written ten years later, Sigley argues that the practice of government is changing in China with “the emergence of a hybrid socialist-neoliberal...form of political rationality that is at once authoritarian...yet, at the same time, seeks to govern certain subjects, but not all, through their own autonomy” (2006a:489).

While governmentality has inspired many scholars to study topics such as socialist work units, policy, population policing and prostitution control in China, and the topics are still expanding, only a small number of them are related to studying nature (Kolås 2014; Sturgeon 2009; Williams 1997, 2000, 2002; Xun 2006; Yeh 2005, 2009; Yundannima 2012; Zukosky 2008). Interestingly, these few studies are all focused on rural minorities in the peripheries of China and concern the question of grassland use. To different extents, they suggest the expansion and reproduction of the “authoritarian” sense of rationalities and technologies. Nevertheless, there also seems to be a shift of view among the studies regarding the practices of government. While earlier studies (Sturgeon 2009; William 2002; Zukosky 2008) addressed absolute social control, recent studies (Yeh 2009; Yundannima 2012) have drawn attention to liberal forms of subject formation. This point needs to be further explored, especially given the belief that “urban subjects are imagined to be governable through their own autonomy while rural subjects, especially minorities, are not considered fit to govern themselves in China” (Sigley 2006a:489).

State power: From dominant organisation to governmental practices

In this section, I would like to further highlight the changing ways of thinking about and analysing state power in political ecology studies. The dominant depiction of the state in the first phase of political ecology was as a monoculture (Robbins 2007). In their classical study, Blaikie and Brookfield (1987) imagine the state as an autonomous and distant player which has the absolute power to situate the local actors and decide the range of choices for them in resource management, and their analytical model ‘chains of explanation’ suggests the shape of state power is linear or simply hierarchical. Similarly, Scott (1998) suggests a totalitarian imagination of the state as ‘all-seeing’ and ‘up there’, and the state is taken to be a unitary actor and source of intuition and capable of making coherent and centralised modernist plans. Influenced by critical theories, in such studies state power is no longer conceived as something derived from a unitary entity called the ‘state’ (Ferguson 1990), and it is also not imagined as “spread(ing) progressively and unproblematically across national terrain” (Li 2005:384). A complex understanding of state power has been advanced by political ecology studies, through deep analysis of the interests, struggles and dynamics between insti-
tutions and agents within the state (Tilt 2007), and through disentangling complex assemblages and webs of relation with non-state actors at different scales (Bassett 1988; Li 2007; Rochealeu 2008).

Governmentality de-centres the state as the seat of power because it is based on the idea that power permeates across the social body, inside and outside the state. Researchers attempt to “transcend static and bounded representations of formal politics” and appreciate “realignments of power within and beyond the state” (Painter 2005:55). Together with the feminist perspective and ethnography of the state, governmentality studies draw attention to the shifting power structures within society and within the state and even beyond the contested boundary between state and society. Governmentality has also been combined with other theories to analyse the above-mentioned complexity and contradictions within and beyond the state in the processes of environmental politics (Bryant 2002; Goldman 2001; Rose-Redwood 2006). Analytically, the greatest change after governmentality is that the focus is no longer on the organisation of the state but on the practices of the state, or the “how” of the state.

Two analytical approaches of governmentality can be identified. One approach still focuses on the state, like Foucault’s “governmentalisation of the state”. It is interested in exposing the new rationalities, institutions, technologies, and mechanisms that the state creates (Li 2007; Sturgeon 2009; Williams 1997, 2000, 2002; Worby 2000; Xun 2006; Yeh 2005, 2009). Geographers are especially interested in spatializing governmentality (Ferguson and Gupta 2002; Rose-Redwood 2006; Rutherford 2007), “remarking upon the ways in which rule is organised and circulated through particularly situated bodies and places” (Rutherford 2007:292). Ferguson and Gupta (2002) further identify ‘verticality’ (the state is above its society) and ‘encompassment’ (the state encompasses its localities) as two key principles to state spatialisation, and argue that the perceptions of them are produced through routine bureaucratic practices. The other approach is more interested in the formation of subjects (Agrawal 2005; Yeh 2009; Yundannima 2012; Zuzkosky 2008). Through examining the ways in which people identify themselves with or reject state rules/interventions, they draw attention to the mechanisms of forming subjects and of producing new desires for further intervention as a result of the formed subjects.

Agency of the people: Resistance and migration decision-making

In this section, I further discuss the ways of thinking about and analysing agency of the people in light of the above conceptual changes in political ecology. Place-based development studies have contributed to seeing beyond structural determinism by revealing the agency of local people, especially peasants, in everyday politics. The agency of the local people refers to their
knowledge of and capability to process social experiences; local people attempt to solve problems, learn how to intervene in the flow of social events around them, and notice the various contingent circumstances. Local people are among the actors that “inhabit(ing), experience(ing) and transform(ing) the contours and details of the social landscape” (Long 2001:4). Influenced by development studies, agency of the people has been widely examined as regards the social struggle for resources access in political ecology studies. The notion of ‘resistance’ is a particular focus of debate. In this study, I also attempt to examine agency of the people through investigating migration decisions. In the rest of this section, I first discuss debate on the concept of resistance and then explore how to examine migration through the political ecology perspective.

Gupta argues that any account of development must consider “its shaping by peasant resistance and activism” (1998:13). The notion draws attention to the struggles of marginal peoples in response to the state and market in resource use (Hazareesingh 2013; Kull 2002; Moore 1993, 1998; Peluso 1992). Jame Scott’s (1985) concept ‘everyday resistance’ is an important theoretical source for political ecologists. As Scott reasons, everyday resistance happens more than social upheaval since the costs of the latter are so high. This refers to a daily expression of resistance from the peasants to the local elites and authorities, and paints a picture of rural people that are unduly “quiescent”, albeit “never passive” (Starn 1992:92). The forms of everyday resistance, “the ordinary weapons of the weak”, are intended to “mitigate or deny claims made by superordinate classes or to advance claims vis-à-vis superordinate classes” (Scott 1985:32), but resistance is thought to be limited by the coercive control of the state and occurs on “a small scale, and especially among marginal populations, without access to arms or more formal instruments of struggle” (Robbins 2004:56). The concept of everyday resistance has also been used to advance the theorisation on Chinese peasants’ behaviours towards a developmental state (O’Brien and Li 2006; Wang and Qu 2009).

43 The various forms of behaviours, ‘the ordinary weapons of the weak’, include “foot dragging, dissimulation, desertion, false compliance, pilfering, feigned ignorance, slander, arson, sabotage, and so on” (Scott 1985:xvi). The characteristics of the everyday resistance are “they require little coordination or planning; they make use of implicit understandings and informal networks; they often represent a form of individual self-help; they typically avoid any direct, symbolic confrontation with authority” (ibid.).

44 For example, Wang (2009) uses the metaphor ‘cat and mouse game’ to describe the different strategies that local peasants use to play around with the state’s policy and rules. O’Brien and Li (2006) argue for ‘rightful resistance’ based on observing how Chinese peasants deployed policies, laws and commitments of the state to combat local officials who were ignoring those policies, laws and commitments. Different from Scott’s everyday resistance, “rightful resistance was noisy, public and open”; and instead of “focusing on the relations between subordinates and superordinates, rightful resisters were engaged in a three-party game where divisions within the state and elite allies mattered greatly.” (O’Brien 2013:1051).
However, Scott’s conceptual framework has been questioned because of its exclusion of gender, age and ethnicity in the production of social inequalities (Hart 1991; Ong 1987). More fundamentally, the pre-fixed binaries ‘tradition versus modernism’, ‘state versus peasant’, ‘state space versus non-state space’ and ‘resistance versus hegemony’ have been criticised for not providing sufficient or appropriate analytical frameworks (Herzfeld 2005; Li 2005; Zhu 2008). It is also considered problematic in many studies to read all forms of resistance as signs of the ineffectiveness of systems of power, and it is also problematic to read people’s refusal to be dominated as a sign of the resilience and creativity of the human spirit (Moore 1998). Nevertheless, scholars “do not advocate a common path out of this predicament” (ibid.:349). Moore (1998) takes resistance as a spatial practice related to specific places; Zhu (2008) argues that resistance is not a meaningful concept at the micro-scale but it can be used to define the large scale context; Li (2005) thinks resistance involves not simply rejection but the creation of something new, as people circulate their criticism, find allies, and reposition themselves in relation to the various powers they must confront. Zhu’s (2008) study of Chinese peasants is especially insightful in that it argues that although certain actions look like a form of resistance, they should actually be interpreted as cooperation because resistance in his view is an attempt to defend tradition (Scott 1985) which is nevertheless missing in the actions. Instead, common values, visions and interests are formed between the state and peasants, what he calls commensurability, to pursue modernisation. This means that ‘resistance’ actions may be subordinated to the will of the state but they may be strategic moves for negotiating better conditions. Therefore, the boundary between cooperation and resistance needs careful attendance.

Scholars have interpreted Foucault’s understanding of resistance differently. Williams (2008) thinks that Foucault’s understanding of power leaves no room for resistance; Rutherford (2007) thinks that Foucault asks us to think of resistance as a component of power; and Fletcher (2007) contends that Foucault envisioned a greater realm of freedom beyond power and resistance. The term ‘resistance’ is still often used in governmentality studies to capture tensions and conflicts in transforming processes. As political ecologist Bryant states, resistance is positive in the face of the governor’s overwhelming governmentality to transform the will of the governed (2002:271). The governmentality perspective examines agency through the lens of subject formation. The basic belief is that actors work in their own

45 In his view, the peasants nowadays in China are already different from the traditional peasants in Scott’s (1985) description. Their primary objective is to maximize the acquisition of land, water, food and living space within the frame of the political and economic constraints. This drives the peasants to become even more radical than the modernity-oriented state in pursuing ideas of developmentalism.
interests as part of their role as environmental subjects (Agrawal 2005:211). To analyse the agency of people in environmental subject formation is to find out how people understand the environment and relate themselves to it, how new knowledge of environment shapes such understandings, and how changing subjectivity plays a role in resource management. Moreover, political ecology studies of social movements have shown that communities are able to successfully defend their ecological interests through mobilising an ecological identity of the collective ethnic group (Robbins 2004:200). There are also studies that combine resistance with technologies of the governed to form ‘technologies of resistance’, or ‘counter-moves to the (state’s subject-making) strategies’ (Birkenholtz 2009:209). The subjectivities behind the varieties of technologies of resistance are further analysed by including caste, class and ecological conditions to overcome the old critiques of the concept of resistance.

This study also considers the agency of migrating people through a political ecology perspective. Political ecology has been linked to migration in several ways. In early political ecology studies focused on resource degradation questions, migration was often addressed as one of the consequences (Kinlund 1996). Later migration studies attempted to draw on political ecology to explain how political and power structures, through controlling access to resources, drove rural out-migration (Barney 2012; Sanderson 2009), and how migration can reshape resource use practices in migrants’ former homes (Taylor 2011). While classical migration theories often take migration decisions as rational choices with the objective of utility optimisation (Gidwani and Sivaramakrishnan 2003), political ecology studies have incorporated the sustainable livelihoods approach which suggests that migration is a livelihood strategy (de Haan 1999; de Haas 2010; McDowell and de Haan 1997). A livelihood strategy is defined as “a strategic or deliberate choice of a combination of activities by households and their individual members to maintain, secure, and improve their livelihoods”; and “this particular choice is based on (selective) access to assets, perceptions of opportunities, as well as aspirations of actors” (de Haas 2010:244). The sustainable livelihoods approach has been especially widely applied in the context of developing countries. Political ecology and the sustainable livelihoods approach have a common belief in the importance of local social relations and a combined approach of the two attempt to understand “how migrants apprehend, negotiate, and transform the social structures that impinge on their lives” (Carr 2005:929).

In the context of environmental change, the livelihood perspective suggests that livelihoods shape migration patterns in two ways: an environmental change may negatively impact natural resources that the livelihoods of the people depend on, and migration is a way to seek for alternative livelihoods or a strategy to diversify livelihoods; and remittances sent back from migrants secure livelihoods and increase the capacity to adapt to environ-
mental change (Foresight 2011). Political ecology offers critical tools to examine a wider scope of questions in the debate on the relationship between environmental change and migration. Besides questioning the climate-change-related migration discourses (Adger et al. 2001; Bettini and Anderson 2014; Hammer 2004; Morrissey 2012; Saunders 2000), political ecology is used to advance nuanced theorisation about the role of the environment in migration decisions (Carr 2005). By adopting a Foucauldian conceptualisation of power, Carr (2005) argues that environment, economy and society are linked in migration decision-making through local manifestations of power. These manifestations of power are the condition for and the result of local understandings of environment, economy and society and therefore form the foundation upon which the rationale for migration decisions takes shape. The methodological insights from his study are, first, to shift the focus of study from conditions that drive migration towards the local power/knowledge in which environment, ecology and politics are understood; and second, to examine the perceptions behind people’s actions to negotiate and transform their contexts.

Construction of environmental knowledge

Power and knowledge have been taken as flip sides of the same coin since the second phase of political ecology (Bryant 2002). As I have discussed, post-structural political ecologists challenge discourses with taken-for-granted facts through problematizing the knowledge production behind these facts. Two approaches have been developed. The first is an ecology-centred approach, which examines biophysical processes to expose environmental truths (Forsyth 2003; Zimmerer and Bassett 2003). By combined use of methods such as satellite image analysis and ethnography, scholars have demonstrated that popular narratives such as deforestation and grassland degradation are contradictory to the time-space ecological history of specific places (Bassett and Zuei 2003; Fairhead and Leach 1995, 1996, 1997; Jiang 1999, 2003). New theories have also been developed to challenge the old way of understanding ecology. A good example is new range ecology theory (Behnke and Scoones 1993; Dahlberg 1994; Ellis and Swift 1988). The theory proposes a non-equilibrium model and argues that, ecology in arid and semi-arid areas with high rainfall variability is determined by climatic instead of biotic factors. This implies that “rangeland degradation and desertification are not caused by overgrazing but are part of a natural process of vegetation decline and growth in response to rainfall, which ruminant numbers merely follow” (Ho 2001b). Rangeland management policies which are embedded in an equilibrium model are therefore problematic. The key measures such as stocking rate, fencing and land privatisation are also criticised for being based on problematic scientific grounds. Following the idea
of the new theory, a number of empirical studies have been carried out to re-evaluate and re-think rangeland claims in different areas of the world (Leach and Mearns 1996; Turner 2003; Yundannima 2012). Besides academia, local knowledge and embedded management institutions in local cultures have also become important sources of counter-knowledge construction (Niamir-Full 1999; Humphrey and Sneath 1999; Turner 1998, 1999).

The other is a politics-centred approach. It challenges discourse/knowledge through revealing “what reality is being constructed, by whom, for whom, for what political purpose, and to what political effect” (Biersack 2006:14) (see e.g. Bryant and Bailey 1997; Peet and Watts 1996; Stott and Sullivan 2000). This analytical approach highlights the plurality of perceptions, definitions and positions of environmental problems among different actors and interests. The politics of resource management are focused on the politics between different knowledge systems. Analysis of conflicts has in turn investigated the contradictions and competition between meanings, symbols, aesthetics and knowledge. As Adger et al. (2001) argue, the current reality is that the major discourses of global environmental issues such as deforestation, desertification, biodiversity use and climate change, have been institutionalised by international organisations and they further feed into narratives and political decisions of national states. The major discourses, especially populist discourses, are based on the knowledge of the powerful players while the voices and knowledge of the local residents who historically lived and worked in these environments are often left out. The mission of political ecologists is thus to get the local voices heard because they believe that local knowledge is viable to local sustainability.

In a similar way to post-structuralists, Foucault sees power constituted through accepted forms of knowledge, scientific understanding and “truth”. The difference, according to my observation, is that governmentality locates its concern at the level of population – biopolitics. Knowledge/power is thus made an agent for transforming human life in biopolitics. Analytically, the governmentality perspective pays analytical attention to technologies of knowledge production, “the particular technical devices of writing, listing, numbering and computing that render a realm into discourse as a knowable, calculable and administrable object” (Miller and Rose 1990:5). The governmentality perspective also highlights that certain knowledge/power structures the field of other possible knowledge/power. For example, Williams (2002) sees Chinese grassland science and policy as “tools of social control that impose a rigid order on (their) subject populations” which “makes it difficult (presumably, for their subjects) to imagine alternative scenarios” (Zukovsky 2008:45).
Multi-scalar analysis of environmental issues

Political ecology studies are concerned with complex dynamics between ecological, social and political processes across various temporal and spatial scales. Scale is thus a key conceptual and methodological question that is central to political ecological analysis. As I have demonstrated, this study is structured by the consideration of multiple politics of scale, such as the spatial relations between the local and the centre, and between the periphery and the core. To human geographers, scale has been a highly contested concept and is considered a fundamental and problematic one (Marston 2000; Marston et al. 2005). Political ecologists have thought about and contested the role of scale in defining and explaining environmental problems, by incorporating new ideas of scale theorisation literature in human geography. In this section, through reviewing the various ways in which scale has been conceptualised to explore human-environmental relations, I seek to clarify my methodological sources of scale. Basically, following its definition in ecology and geography, scale is usually defined in terms of spatial and temporal dimension in political ecology. In early political ecology, scale was conceptualised in a hierarchical fashion. Blaikie and Brookfield claim that the complexity of human-environment interactions demands an approach which encompasses “the contribution of different geographical scales and hierarchies of socioeconomic organisations (see e.g. person, household, village, region, state, world)” (1987:17). The analytical framework chain of explanation accordingly employs a nested set of scales. This conceptualisation of scale has been criticised for taking scale as pre-given socio-spatial containers with labels such as rural-urban, local, regional, national and international (Zimmerer and Bassett 2003) with a risk of stripping localities of agency (Turner 1999). Following Henri Lefebvre, human geographers no longer perceive scale as an “out-there” pre-existing physical dimension of observed entities and phenomena, but as being “socially constructed, historically contingent, and politically contested” (Neumann 2009:2). Political ecologists emphasise that scale is not neutral but inherently political (Sheppard and McMaster 2003); and it is social-biophysically mobilised (Zimmerer and Bassett 2003). Nowadays scale is not only conceptualised and analysed in vertical patterns (hierarchical) but also in horizontal (network) patterns. The research value of scale is more seen in epistemology than ontology (Neumann 2009), more as “scalar practices of social actors” than as “an analytical category” (Moore

46 The nested set of scales includes “local and site-specific where individuals and small groups make the relevant decision; the regional scale involving more generalized patterns of physiographic variation, types of land use, and property relations and settlement history; the national scale in which the particular form of class relations give the economic, political and administrative context for land-management decisions; and the international scale, which, in the most general manner, involves almost every element in the world economy, particularly through the commoditisation of land, labour and agricultural production” (Blaikie and Brookfield 1987:68).
2008:212). Scale is seen as being produced from the governmental perspective. It is used to interpret the experience of spatio-temporal difference and change so as to make ecology the object of politics, policy-making and political action (Rangan and Kull 2008:28).

Scale dynamics of natural resource management has been analysed in various ways. To contest mismatches or conflicts of interests between processes and actors at different scales is a major approach. Cumming et al. (2006) hypothesise that many of the problems encountered by societies in managing natural resources arise because of a mismatch between the scale of management and the scale(s) of the ecological processes being managed. The mismatch can also be between the rhetoric of a market triumph at national scale, and the local social realities of declined entitlements and social capital (Muldavin 1996, 1997, 2000). It can also be between the popular narratives of deforestation at the regional, national and international levels and the local ecological reality of vegetation history, which has been discussed in the previous section, so as to demonstrate the “illegibility of the discourses at the local scale” (Adger et al. 2001). Moreover, the mismatch between scales of knowledge is also identified as an important type of scale mismatch, which together with scale politics lead to conflicts in resource management (Ahlborg and Nightingale 2012). Another way is to reveal how scaling of power and the strategic use of scale in political actions can cause problems and pitfalls in the management of nature. Competing values, goals and priorities of bureaucrats at different scales can obstruct pollution enforcement (Keeley and Scoones 2000; Tilt 2007). Environmental policy is also likely to be detached from local causes and concerns of environmental problems due to decentralisation (Batterbury and Fernando 2006; Jiang 2006). Additionally, scaling of power can be manifested in the definition of spatial relations, for example, between the centre and the periphery, to promote a certain type of environmental discourses (Kolás 2014; Williams 2002).

Conclusion

This chapter has discussed the theories that structure my theoretical approach to studying China’s environmentalisation. Scholarship on environmental politics suggests there are at least three types of structural divide within the state to explain the causes of ineffective environmental policies: fragmented authoritarianism, the relationship between the central and local state, and incentive structures set by the central state for encouraging the local state to implement the central policy appropriately. While the current popular approach of ecological modernisation assumes the state’s current environmental strategies and actions will lead to a sustainable future, I concur with Blaikie (2000) in criticising there is “little to say about power relations” (138). I seek to combine the insights from environmental politics with
theories from political ecology to enrich the explanation of the environmental state’s trajectory. Political ecology is a highly dynamic approach composed of shifting views and contested positions. I draw insights from three aspects: the changing ways of understanding power and power relations in governing environment, the construction of environmental knowledge, and the multi-scalar analysis of environmental issues. Theoretical insights structure analysis of my empirical materials in the following ways. Chapter 5 analyses the environmentalisation of the Chinese state in relation to insights on China’s political structure and analytics of government. Chapter 6 examines how the central state’s environmentalisation attempt was translated by local authorities into implementation by relating it to the use of different forms of power. Chapter 7 explores the affected households’ migration strategies through drawing on insights of the agency of rural people, the power/knowledge of political ecology, and also the subject formation dimension of governmentality. Chapter 8 examine how the management of rangeland as part of enforcing ecological resettlement projects has facilitated environmentalisation. It explores the ways in which land privatisation uses the technologies and mechanisms of environmentalisation to reshape the practices of Mongolian pastoralism, and considers the agency and networks related to how and why migrant households have been re-included in practising pastoralism to adapt to environmentalisation.
In previous chapters, I have sought to place the research topic of environmentalisation in both the time-space contexts of ecological resettlement and academic debates on the role of power in human-environment relations. In this chapter, I shift the focus to methodology and the process of undertaking research on ecological resettlement. This chapter is intended to present the methodological approach I adopted, and based on that, it will explain the materials and methods, and how they are constructed and interpreted. The chapter is divided into four parts. I will begin by elaborating on the framing of the methodological strategy. It should be noted that the decisions in my research design were not made in “a linear, pristine, ordered process” (Valentine 2001:43). The general methodological approach seeks to inform in a chronological way how my research questions were formed. Then I outline what secondary data have been collected, their limitations and how I use them. Next, I describe the process of collecting primary data, including why I selected the study area, what primary data I have collected and how I applied ethnographic methods in fieldwork. At the end, I reflect on the mixed methods approach, and describe ethnic and positionality considerations in conducting this research.

The general methodological approach

I took a similar approach to O’Brien’s (2006) strategy which treats research design as an ongoing process and emphasises discovery rather than verification. In other words, my approach was exploratory and flexible in order to be open to unforeseen ideas. My inquiry into ecological resettlement started from empirical observations during the fieldwork for writing the master thesis on Mongolian pastoralism (Zhang 2006). Therefore, fieldwork was taken as the starting point and key method of this research. I stayed for four months in the field site the first time in order to immerse myself in the local environment. Through travelling between the urban and pastoral villages, observing people’s social and economic lives in different places, and talking extensively with people of different by gender, age and class, I tried to get an idea of what ecological resettlement really meant to the pastoral households so as to give logical explanations of its processes and effects. Through par-
participant observations and semi-structured interviews, I realised that the processes of ecological resettlement are associated with a number of decisions and strategies for the pastoral households: to migrate or stay, to accept the resettlement conditions or to bargain or to reject, to sell livestock or to entrust them to others, to find a new job or to find odd jobs in the pastoral villages. Narratives on the decisions and strategies, involving imagined and realistic opportunities and constraints, suggest a series of social linkages between migrant and non-migrant households, and a spatial linkage between the pastoral and urban spaces. Therefore, contrary to the dominant approach in my readings of resettlement studies, which study the origin and destination of resettlement as non-related and separated spaces, my empirical learning developed a strong linkage perspective. This perspective frames both the empirical analysis in Chapters 7 and 8. Due to the engagement with fieldwork, the second research question on migration strategies and the third one on the impact on the pastoral areas were first formulated. Additionally, in order to place ecological resettlement within the broad understanding of pastoral areas in transition in China, other than my own fieldwork, I also joined two other researchers’ short field trips to an agro-pastoral village and to a pastoral township in and near Xilingol League respectively. These areas had not experienced ecological resettlement, but were facing similar issues to the areas with ecological resettlement, such as organisation of pastoral production, rangeland use and policy interventions. Although no data from these side trips was included in the analysis of this study, the experiences helped me to reflect on my interpretations of materials in this study.

In addition to doing fieldwork, I have also engaged in extensive reading of policy documents on environmental governance. While the initial purpose was to collect background materials for contextualising the ground-level analysis, study of the background was developed into the first research question on analysing the environmentalisation of the state. A main question in my mind when I was processing the policy documents was how to understand the state’s rapid advance in generating environmental governance discourses and especially science-based ones. Furthermore, I considered what the relationship was between the processes that I empirically recorded in the field and the processes I read about in papers in the office. It was through such a constant process of relational thinking that I decided to situate my examination of the theme within a larger theme of China becoming an environmental state.

Qualitative and quantitative data have been collected both by desk work and in the field. During this study, I spent in total 26 weeks in China, primarily in the study area, Xilitu Sumu, but also in Beijing and Hohhot, visiting libraries and meeting experts. The fieldwork was conducted in five periods between 2008 and 2011 (April-July 2008; January 2009; June-July 2009; and September 2011). While fieldwork was conducted within limited times, desk work on data collection has continued throughout the entire process of
study. Thanks to the trend of information digitalisation and the Chinese government’s policy of promoting government information discourse, most news, government documents, reports, statistics and research publications have been collected through desk research.

Secondary data collection

Secondary data, or pre-constructed data (Cloke et al. 2004:36), in this study include both official information and non-official information. They are used for two purposes: providing geographical, historical and social economic information to contextualise primary data (Clark 2005:59), and doing analysis. I will present the sources and types of my secondary data, reflect on the limits and explain how I use the collected data for analysis.

The collected data include varied forms of official documents such as news, reports, plans, surveys, statistics, maps, and presentations. They include all the three types of official information according to the classification of Cloke et al. (2004:42): information as part of the bureaucratic process includes politicians’ speeches, meeting decisions, reports, master plan, regional plans, guidelines and fiscal budgets; information as part of the monitoring and controlling process includes population records and socio-economic statistics of its population; and information as part of the communication process for reaching and educating the people. The types overlap each other on many occasions. The data collection focused on the key word ecological resettlement (‘Shengta Yimin’) and more broadly on environmental governance in intersection with three themes: grassland, development of pastoral areas and development of animal husbandry. The primary sources are the websites of different authorities. Thanks to the policy of “making government information open to public” and “e-governance” in China, many documents have become accessible through the websites of authorities. My search for information followed both the territorial structure and the functional units of the state administration (see Figure 4 and Figure 5).47 Due to

the difficulty of interviewing local politicians, I explored the official views through analysing local government documents.\textsuperscript{48} News, announcements, reports and statistics regarding the specific ecological resettlement projects were continuously collected by following information on City Q government’s website and the information board in neighbourhood F. Besides the above, three surveys were collected from local governments: ‘Survey report on the current situation of resettled pastoral households’ included the resettled households’ employment and income statistics in 2009 (City Q Ecology Office 2009a); ‘Survey on resettled households’ income’ consisted of disaggregated income statistics (City Q Ecology Office 2009b); and ‘Xilitu Sumu pastoral household survey 2007’ (Xilitu Sumu government 2008b) was composed of comprehensive statistics on individual household demography, production, property, income and expenditure in 2007.\textsuperscript{49}

Official data in the form of statistics, including population, price index of produces, has also been collected through yearbooks. I have mainly consulted the Chinese Statistical Yearbook, the China Statistical Yearbook on the Environment, the Inner Mongolia Statistics Yearbook, and the Inner Mongolia Social and Economic Survey Yearbook. They have been accessed through both the China’s National Library in Beijing and the China Knowledge Resource Integrated Database (CNKI). However, accessing official data is always more limited to researchers affiliated to foreign institutions even if the data is open to public access from international organisations. This is my experience of collecting meteorological data. After being refused by an officer at the regional meteorological bureau, I turned to the

\textsuperscript{48} In a few limited conversations with local politicians, I had similar impressions to Yundanima (2012) namely that most local officials “tended to talk about issues only according to government lines and avoid mention negative aspects” and “are more cautious about responding to questions from researchers affiliated with foreign organisations”. Therefore, I chose to study policy documents as an alternative way.

\textsuperscript{49} The pastoral household survey is a survey carried out once or twice a year by the township government to collect comprehensive information about each pastoral household’s demography, production, property, income and expenditure. This is a recent initiative promoted by the Inner Mongolia government since 2006 with the aim of basing local policy and decision-making on good knowledge of the population. The survey itself is a manifestation of the state’s new technology of government. ‘Xilitu Sumu pastoral household survey 2007’ (Xilitu Sumu government 2008b) is the main source of register data but missing information in it is supplemented by register data from the ‘Xilitu Sumu pastoral household survey 2009’ (Xilitu Sumu government 2010a) and ‘Detailed payments of rangeland compensation’ (Xilitu Sumu government 2008c). This will be specified in an analysis in Chapter 7.
Global Historical Climatology Network and the Food and Agriculture Organisation’s climate database.

Secondary data have also been collected through other sources including media and research publications. Materials from media sources included interviews with officials, commentaries on environmental events, environmental policy and practices. It should be noted that media sources in this study included both government-related ones such as the People’s Daily (including the People’s Net), Xinhua News Agency (including Xinhua Net) and China Central TV (CCTV, including CCTV Net), Guangming Daily, China Weather Net and Inner Mongolia Daily News, and non-government-related ones such as China Financial News, China’s Green Times, Jinghua Times, Market Newspaper, Oriental Outlook Weekly and Southern Weekly. Research publications provided insights into knowledge construction, unknown policy-making processes and unpublished statistics. This was due to the fact that China has not practiced or even promoted an ideal of separation between scholars and bureaucrats; think tank scholars’ studies have even had a clear purpose of advising policy-making, and they also have great advantages in accessing non-published official data (Hansen 2006:88, Morrison 2002).

The collected data had several limitations. First of all, some data lack of continuity which may be related to the change of policy orientation upon the change of leaders. Secondly, quotations of figures, for example scale of investment or number of resettled population, could have different versions if coming from different sources. My strategy has been to quote the one from the lowest level of authority since it was often the lowest level of authority which collected the data and reported to the higher levels. Thirdly, the data were neither taken for granted as reliable facts nor taken at face value. I am fully aware of the constructed nature of both official data and non-official data. In particular, my use of some data was intended to show how the data help to shape the policy landscape of ecological resettlement in particular ways. Fourthly, to use statistics from the surveys conducted by local governments was a second best choice given that the amount of resources and the workload demanded for conducting such surveys was beyond the capacity of my PhD project. Nevertheless, the accountability of information from government surveys should always be questioned since citizens always tend to provide information to such means that the authority uses to monitor its society according to their interests instead of the real facts. But I think some statistics I used, including the size of rangeland, the population numbers, the

---

50 As Morrison (2002) explains, the Chinese think tanks conduct strategic thought and policy planning for individual state ministries or communist party organs. Researchers often work for high-level Chinese research institutions with close ties to policy-makers such as the Chinese Academy of Social Sciences or they work on research projects entrusted to them by governmental institutions. However, the impact of a think tank on policy-makers is contingent on the access to policy-makers and on drawing attention to the right issues and concepts.
numbers of labourers and of students, have a lower risk of being unreliable compared to figures such as numbers related to livestock, income and expenditure. This is because the former group of statistics has for long been controlled and cross-checked by the local governments through several institutional means, especially through the Hukou system and land rights privatisation.

Secondary data are used in the following ways. In Chapters 1 and 2, they mainly set up the geographical, historical and social economic contexts of ecological resettlement. In Chapters 5 and 6, secondary data, policy documents in particular, are used for analysing the state’s environmental rationalities and technologies. They are taken to illustrate the particular ways of thinking and doing of an environmental state. Three types of materials are focused on to analyse the regime of practices: materials such as maps, charts and tables that visualise the problem of grassland degradation; materials concerned with strategies, knowledge, or the specific ways of thinking about and calculating the presentation of grassland degradation so as to give rise to specific forms of truth; and materials concerning mechanisms, instruments and technical means which are used to achieve environmentalisation. In Chapter 7, statistics from the survey ‘Xilitu Sumu pastoral household survey 2007’ (Xilitu Sumu government 2008b) are used for analysing the factors that affect participation decisions of pastoral households in the second ecological resettlement project. In Chapter 8, statistics from City Q Ecology Office (City Q Ecology Office 2007b, 2009a, 2009b) are used to analyse employment and income patterns among resettled pastoral households and population; statistics from the Inner Mongolia Statistics Yearbook 2003-2011 are used to demonstrate the trends in produce prices; and statistics from City Q Ecology Office (2007a) are used to show the spatial distribution of resettled households at village level.

Primary data collection

In this section, I explain and reflect on my research design, strategies and methods for collecting primary data.

Fieldwork

Primary data have been collected through doing fieldwork. Xilitu Sumu was chosen as the case study area for the following two reasons. First of all, I had planned to study a pastoral area within Xilingol League. It was during the fieldwork in Xilingol League for my master thesis that I developed the initial ideas of studying ecological resettlement in a Mongolian pastoral context. Secondly, I planned to follow an ecological resettlement from its beginning
in order to study the processes. Xilitu Sumu had just started an ecological resettlement project in 2006. My early field experiences made me aware from the beginning that what happens at the local scale is extremely interesting but at the same time very complex. Therefore, I was interested in focusing on a small scale to go deeply into the complexity of local processes. But I did have an idea of choosing two to three areas within the same prefecture to explore from a comparative perspective the local political dynamics involved in shaping the human-environment relations. However, when I went into the field, I realised I would need more time to collect extra data to answer the questions I was interested in. It was not a streamlined process of collecting straight answers to a list of prepared questions. Instead, I had to observe, think and relate the data I had to each other. The decision to study both the first and second ecological resettlement projects was made during this process. Before going into the field for the first time, I only planned to study the second ecological resettlement project. Nevertheless, during the first fieldwork I realised that it was almost impossible to study the second project without attending to the first project due to the first’s impact on people’s perceptions and behaviours when participating in the second project.

I intentionally avoided taking the typical way of approaching the field in China both for Chinese researchers (Hu 2007) and for foreign researchers (Hansen 2006, O’Brien 2006), which is to go through the introduction of a top-down political network. The problem with such an “official” approach is that a fieldworker’s association with the state institutions often limits his/her interactions with the researched and is very likely to undermine the research quality. Therefore, my strategy was to enter the field as a powerless student without any official introduction. The aim was to make the people feel free to talk.

Information from one field trip was often fragmented which meant a return visit was required to complete and even rethink the interpretations of data. Therefore, I decided to focus only on one study area to develop an in-depth analysis. This choice indeed removed the possibility of making any comparison of ecological resettlement between different places and I may be challenged by the question of the ‘representativeness’ of this small case. However, I argue that my research questions are not intended to generate a representative model of ecological resettlement. Instead, my research questions are intended to contribute to the general understanding of the ways of enabling environmentalisation, to the how and why questions of ecological resettlement. I have not reduced my concern with relating the issue to the wider context, more specifically how ecological resettlement constitutes a part of a wider process of transformation. Moreover, the two ecological resettlement projects happened to enable a minor comparative perspective through showing the differences of local policy practices over time.
Participant observation

Ethnographic methods including participant observation and semi-structured interviews were my main methods in the field. Ethnographical approaches serve well the concerns of political ecology to highlight the different and often conflicting perspectives of various actors on the environment and its problems (Moore 1992, 1996; Neumann 2005:6); and they provide means of exploring power relations through ‘thick descriptions’ (Zhu 2008). Participant observation was conducted in City Q, the Resettlement Village S and the pastoral villages. Participant observation stems from a desire to understand the world-views and ways of life of actual people from the inside, from their everyday and lived experiences (Cook 2005; Watson and Till 2010). By immersion in particular settings, participant observation allows multiple viewpoints to be heard and acknowledged (Kearns 2010). My field work started with becoming familiar with the social economic environment in City Q. I started looking for resettled pastoralists from neighbourhood F. My observation started at once upon entering the gate of the neighbourhood. News, announcements, plans and maps on the information board which were intended to demonstrate the transparency of governmental practice to the citizens, not only made me reflect on how the state interacted with its citizens in this specific place and settings, but also provided me with materials about the practice and progress of the second project. Observation was also made in the apartments of the interviewed households when I saw each household’s living conditions and the differences between them. Neighbourhood F was quite empty despite it having nearly two hundred apartments. I soon found that, only thirty households out of the 141 resettled ones in City Q accepted the condition of getting an apartment in neighbourhood F and still more than half of the thirty households actually rented out their apartments.

Acting on information given by an interviewee in neighbourhood F, I found two other neighbourhoods where most resettled households lived. These neighbourhoods were close to the city centre but the living conditions of the single-storey houses were poorer than in neighbourhood F. Neverthe-

---

51 I intentionally stayed for several months the first time in the study area the first time in order to immerse myself into the environment and everyday lives of the studied pastoralists and to develop relationships with them. I rented an apartment and tried to get familiar with the city by going to the food market, the transport centres, the squares, and the business streets to observe what the local everyday social and economic lives were like and how different people were related to the urban spaces. By hiring an assistant from the local labour market, I got another way of learning about the city - from her and her friends.

52 The low residential rate was due to the condition that a lower level of compensation would be given to a household if it chose to take an apartment. Most households did not take apartments but chose to rent a cheap place to live in other neighbourhoods. This situation totally changed after 2009 when the state removed the condition. Most households moved in, which revitalized the neighborhood.
less, the tight residential structure enabled more opportunities for neighbours to interact with each other in the public space. Participant observation was also been conducted in the social and economic spaces relevant to migrant pastoralists. These spaces included the restaurants and shops operated by them and the trade markets where migrant pastoralists are often hired as assistants or interpreters. Participant observation in Resettlement Village S was focused on learning about how the household livelihoods, such as milk cow raising, were organised based on the infrastructure set up by the first ecological resettlement. Observations were conducted in the streets of the settlement, in the milk collection station, in the farming fields, and also at the interviewed households’ homes.

The pastoral villages are another important space for conducting participant observation. I travelled extensively across the pastoral areas so as to observe the landscape and the everyday practices of rangeland use. I used a GPS device to record the geographical distributions of land use such as settlements, wells, puddles, fences, and developmental use of rangeland for petrol extraction, urban housing, mineral mining and stone mining. By following some pastoralists to herd livestock, I learned about local vegetation, topography, and the knowledge of Mongolian pastoralism which aims to herd livestock by adapting to the local environment. The knowledge of practising pastoralism was not presented as a set of fixed rules but rather as the flexible principles embedded in social and cultural relations. However, the challenges of herding caused by the change of land institutions, drought and urban expansion were also brought up during the conservations. This information prepared me for more systematic discussions of part of the interviews.

Interviews

Interviews were conducted with seventy pastoral households and four village leaders. Interviews are the best way to explore the agency of the people, to learn about their experiences and voices. In the Chinese context, O’Brien claims that an interview “enables outsiders to locate research problems for genuine importance (and to prioritise among possible explanations) by discovering what is agitating people in the thick of the system” (2006:33). But at the same time, interviews are preconditioned by the fact that people feel relaxed and are thus more likely to “opt into” (Skelton 2001) participation in the research.

For the analysis in Chapters 7 and Chapter 8 I use the results of my interview study conducted between 2008 and 2011 for which I selected 70 interviewed households with rangeland in the four villages of Xilitu Sumu (see Table 1). Of the 70 interviewed households, 53 were located in pastoral single family settlements; twelve were located in City Q; and five were located
in Resettlement Village S. The interviewed households accounted for between 15 to 22 per cent of each village’s total, and nearly 18 per cent of the total in Xilitu Sumu. The selection of interviewed households was mainly based on the following criteria: having a relatively equal representation of households with rangeland in the four pastoral villages; representation of migrant and stayer households, both at the destinations of City Q and Resettlement Village S, and the origin pastoral villages; representation of both men and women; and I also aimed to get one leader from every village. As shown in Table 1, of the 70 interviewed households, 21 had experience in the first ecological resettlement project and 22 in the second. It should be noted that, despite participating in the projects, the households did not always reside in the resettlement destinations of the projects. Only five of the 22 participant households of the first project still lived in Resettlement Village S while the majority, 15, returned to live in the pastoral villages and one household moved to live in City Q. Twelve of the 22 participant households of the second project lived in City Q, three lived in Resettlement Village S and seven lived in the pastoral villages.

Table 1. Distribution of interviewed households.

<table>
<thead>
<tr>
<th>Place of residence</th>
<th>Participant of project 1</th>
<th>Non-participant of project 1</th>
<th>Participant of project 2</th>
<th>Non-participant of project 2</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pastoral villages</td>
<td>15</td>
<td>38</td>
<td>7</td>
<td>46</td>
<td>53</td>
</tr>
<tr>
<td>Resettlement Village S</td>
<td>5</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>City Q</td>
<td>2</td>
<td>10</td>
<td>12</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>48</td>
<td>22</td>
<td>48</td>
<td>70</td>
</tr>
</tbody>
</table>

In the city, interviewed households were recruited first by knocking on their doors and then through snowballing. Interviewees in the pastoral villages were recruited by visiting single family settlements. There is no map of where these single family settlements are located. Instead the settlements were located by traveling along the main roads and also the smaller roads that traverse the territory of Xilitu Sumu. After the identified settlements had been given geo-coordinates and located on a map, the search for new settlements was focused on areas that were not well represented in the sample. Of the settlements identified and visited I was able to conduct interviews in about two thirds. Recruitment of interviewees in Resettlement Village S was limited by the emptiness of the village. I approached the houses with milk cows in the pens or with open gates. Recruitment of interviewed households was also a back and forth travelling process between the three places. After two months of the first fieldwork, I became widely known among the re-

---

53 The location of the settlements also enabled my return visits to the interviewed households.
searched pastoral households. People were more willing to accept my visit because they had heard about other families’ interview experiences with me. The fieldwork in the pastoral area especially helped me to be accepted by the migrants in the city because I was able to demonstrate my authentic research interest by imparting my knowledge of rangeland and people in their original homes in the pastoral area. The back and forth interviews between the three places also helped me to gradually map the connections and networks between the interviewed families.

It is important to clarify that the household instead of individuals is the main unit of research in this study because the household is the primary unit as regards participation in ecological resettlement projects. This is because it is both the basic unit in policy interventions and also in household migration and livelihood decisions. While many of the interviews were conducted in the presence of more than one family member, there was a key interviewee who answered most of the questions during the interviews and the other members often supplemented this with their ideas or made corrections. Forty-one key interviewees were men and 29 were women. Although 18 of the interviewees were not the head of the household, this made it possible to get more of the women’s perspective, given that only 17 of the 70 interviewed households were female-headed. To protect the interviewees, all the names of places and interviewees have been anonymised. The key interviewees were between 31 to 60 years old, 60 per cent of them were male, and the majority had an educational level between primary school and secondary school. More detailed information about the interviewees and their household characteristics is presented in Appendices 1 and 2. Most of the interviews were conducted in Mandarin and Mongolian at the same time. I asked questions in Mandarin, the assistant translated them into Mongolian,

---

54 Not all interviews were conducted on the first occasion, nor in only one meeting. I have kept notes for all meeting occasions but the conduct of interviews was proposed when I felt the interviewee had built up enough comfort and willingness to talk. In the city, it was difficult to fix an appointment due to the fact that people usually had temporary and informal jobs without fixed working times. In the pastoral villages, it was not always easy to follow up the interviewed households because they were either out of the home for herding or did not have time for a long interview. Therefore, I grasped every possible chance to ask questions and completed an interview over several visits. For most of the interviewed households, I paid more than two visits. The time of interviews was in total nearly two hours with each household.

55 The concepts of headship and female-headed household and their identifications are debated in development studies. Headship is usually identified with the person who has the greatest power in a household to control and make decisions of affairs within the household. However, to measure power is complicated. Income contribution is often taken as the most important measure. Official data, often in a patriarchal view, ascribes the headship position to men even if the women provide for the family. Studies argue that female-headed households are more common among the poor. I define the head of a household by a combined consideration of control of land rights and income contribution. The person vested with land rights is identified as the head as long as the person makes a contribution to income even if it is less compared to the others.
and then the interviewees replied in Mongolian and the assistant translated it back to me. Nearly all the interviewees understood Mandarin but not all could or wanted to speak Mandarin. Therefore, often the assistant did not need to translate the questions and sometimes the interviewees wanted to reply in Mandarin.

I used a questionnaire and two sets of open-ended questions, one for participant households and one for non-participant households in the second resettlement project. The open-ended questions were intended to find out the following: household migration motivations, strategies and experiences in ecological resettlement; perceptions of environmental changes and the role of the environment in migration decision-making on ecological resettlement; and practices of pastoralism before and after the implementation of ecological resettlement. A livelihood perspective was taken in all the questions. However, in conducting the interviews, I did not stick to a standard order of the questions. Migration decisions and actions were not asked about via direct questions at the beginning of interviews. Instead, I had extensive discussions with the interviewees about their families, their past and present livelihoods, their perceptions of local environmental changes and their plans for the future. Incentives, decision-making, conflicts and compromises associated with the resettlement processes gradually emerged out of our conversations, and their narratives were usually constructed around daily and specific events and life stories.

The greatest problem in the interviews was that many answers depended on the interviewees’ ability to recall what happened. Besides ambiguity, there could also be a risk that interviewees who were experiencing problems in life during the time I interviewed them would tend to exaggerate the positive side of their life before resettlement. In the field I try to avoid the tendency to romanticise ordinary villagers and to take everything they say at face value, especially the complaints (Heimer 2006:61). My way to control is to double-check or cross-check the data, for example, by asking the same question again in the next interview, or by asking another interviewee who is socially related to the previous interviewee, for example a neighbour, who might know about the first interviewee’s situation.

56 To comment on policy and its implementation is politically sensitive. It was found at once at the beginning of the fieldwork that to start a conversation by asking about ecological resettlement could immediately cause the interviewee to freeze up and it was difficult to reverse the situation. Instead, I adopted a research strategy of starting with non-sensitive questions, for example rainfall and grassland conditions. I also often used open-ended questions and let the interviewees talk as a way to find out unknown ideas. For example, I did not know that it was a wide practice for migrant families to entrust their livestock to non-migrant families. This came out as a side finding when a migrant interviewee was telling me what a good relationship he had with his old neighbour in the pastoral village. Some sensitive questions, such as the number of animals, were asked last, when trust had been built up between me and the interviewee.
Four interviews were conducted with village (ex-)leaders. Village leaders play an intermediary role between the state and the people. Village leaders have an interest both in serving the state and in living as part of the people. The four interviewees were not only asked questions on their families but also questions that helped me to learn about how policies have been translated into practice at the village level to shape the social economic history of the village regarding land use and production organisation, and also to shape the processes of ecological resettlement.

Methodological reflections

Mixed methods

The above accounts have suggested that this study combined qualitative and quantitative data collection and analytical techniques. The mixed group of methods includes fieldwork, participant observation, interviews, analysis of government document, and statistical analysis. Use of mixed methods and an interdisciplinary approach is a typical way of proceeding for political ecologists (see e.g. Dalberg 2000, Fairhead and Leach 1995, 1996 and 1997, Jiang 1999, 2003). As Rocheleau says, many political ecologists “work in a boundary zone between positivist and critical paradigms, consciously combining critical theory, empirical fieldwork, and quantitative and qualitative analysis” (1995:458). It is also considered as one of the strengths of political ecology studies. Nevertheless, this approach is still contested. Feminist political ecologists especially draw attention to the associated methodological dilemmas (Nightingale 2003; Rocheleau 1995). In the broader discipline, geographers are still debating and reflecting on how different epistemological and methodological approaches might be integrated (Elwood 2010).

Being aware of the challenges of using mixed methods, I would like to present a brief reflection on methodological decisions regarding how to use mixed methods in this study.

Fieldwork and a qualitative approach were taken as being primary. The research approach was bottom-up. Qualitative data collected through participant observation and semi-structured interviews were the base for the formulation of research questions. Quantitative data and an analytical technique were used to complement and deepen the qualitative analysis. For example, in analysing household migration decision-making, I have used qualitative analysis to reveal the household strategies, opportunities and constraints, and have used quantitative analysis to test the relevance of a group of household-level factors conditioned by social, demographic and political structures to the decisions. It is crucial to notice that the identification of the factors was a

---

57 These four interviewed village leaders are included in the 70 key interviewees.
result of interpreting the contents from interviews. In other words, the qualitative methods condition the quantitative ones. Given that knowledge is always partial, knowledge from the two types of methods are complementary to each other. In turn, the results of the statistical analysis also help to triangulate the results from qualitative analysis and enable further reflect on interpretations of the data from interviews.

One major practical challenge associated with adopting mixed methods was the order of collecting different types of data. For example, since the pastoral household survey was collected after conducting all the household interviews, it was impossible to know if the interview sample was a random selection out of the register data sample. Therefore, I had to test the relationship between household-level factors and participation decisions both with the interview sample and the register data sample. Different results from the analysis of the two samples further draw attention to the limitations of the data collection.

**Reflexivity**

Reflexivity is a strategy used by critical geographers, especially feminist geographers, for situating knowledge, or as a means of avoiding the false neutrality and universality of knowledge (Rose 1997). From a feminist perspective, subjectivities are inscribed in any research work. Thus, no research is objective- or value-free. Instead, the interpretation and representation of knowledge is always influenced by the positionality of researchers and the power relations between researchers and informants. In this section, I reflect on three themes that are relevant to my positionality in doing this research. I argue that a researcher’s positionality in doing fieldwork in China has similarities with doing it elsewhere as a number of Western scholars have discussed the influence of gender, race, class and other identities, but there are also some peculiar national contexts that shape a researcher’s positionality in doing fieldwork in the pastoral areas of China.

**Doing research ‘at home’: Being a familiar stranger**

This research was conducted both at home and outside the home. The practical advantages of doing research at home that Unwin (2006) addressed are not all applicable to my case. My experiences especially challenge the insider/outsider binary. I stand with Mullings (1999) and Mohamad (2001) to argue that the boundary between insider and outsider in reality is highly un-

---

58 The five advantages that Unwin (2006) has identified are the researcher’s prior knowledge of their own society and culture, language, the specific benefits and contribution of being an insider, and the practical convenience in terms of scheduling research time.
stable, which reflects the dynamism of positionalities in time and space. The ‘at home’ part, my familiarity with the Chinese social and cultural contexts and the identity of being a Chinese give me an advantage of being able to quickly become familiar with the field. However, I am at the same time a Western-based Chinese scholar. Being trained in Western theories and research methods, I was a ‘familiar stranger’ as Yang (2014) says, which meant I was sometimes perceived as a “foreign expert” but at other times as a distant stranger who could only imagine the life of the locals. This familiar stranger subjectivity was further complicated by the cross-cultural setting in the field when a Han person conducted research in the pastoral areas with Mongolians.

Being a Han, I was perceived as an outsider to the Mongolian communities and the pastoral area. However, despite having the majority identity of ethnic Han at the national level I was in the minority in the case study area. Interactions of the locals with Han were mostly with business people and officials. Therefore, the locals naturally related my visit to one of them. With business people, they were always afraid of being cheated; while with officials, they had a different level of willingness to talk to them. However, another of my identities, as someone from Hohhot, the capital of Inner Mongolia, made me a much more closely ‘related’ person to the locals. During the first encounter with every interviewee, I introduced myself, and described the purpose of visit and my research and my affiliation. Despite that, I was still considered as having different roles; as an official investigator, an official from the central state, a journalist, a student and a researcher.

In particular, although I intentionally disassociated myself from the government, I was still constantly put into the category of official investigator at the first encounter with my interviewees. This was due to the fact that the Chinese state has a long tradition of sending investigators to interview individuals and households about their social and economic lives, especially in the rural areas. The methods and questions I used, which were similar to those of the official investigators in the eyes of the researched, made it natural for them to place me in that category. As Hansen argues, researchers in China “are walking down a track already beaten by investigators or researchers whose goals were more clearly of a political nature” (2006:94). In Hansen’s view, this association has two implications for fieldwork practice. On the one hand, it may limit the free talk of the researched because they are afraid of commenting on government policy. On the other hand, the researched feel obligated to receive visitors from the outside whom they consider to represent official powerful institutions.

My fieldwork experiences are both similar and different to Hansen’s view. It is true that, with the assumption of me being an official investigator, some interviewees were very polite but quiet while I sat in their living rooms for nearly an hour. However, to my surprise, there were also interviewees who were very open with their criticism and they even clearly expressed
their wish for me to take their opinions back to the political system to bring about policy changes. In this last case, I was considered not only to be an official investigator, but also one sent from a higher level of government, since I was a non-local stranger, studying abroad, whose background was associated with the centres of power, Hohhot and Beijing. The obligation they felt to receive official visitors indeed enabled my initial interactions with some families. Actually, my driver and assistant tried to ‘help’ me to enter some hesitant families by vaguely referring to my purpose as “social investigation”. However, the above dynamics of the power relationship between my interviewees and me were only limited to the initial encounters. By spending a relatively long period of time with and making repeated visits to the interviewees, I intentionally worked on equalizing the relationship between us.

Since some locals were quite conservative when talking about sensitive issues to a person affiliated to a foreign institution, I often indicated my connection to the Chinese Academy of Social Sciences since my Chinese co-supervisor worked there. To my surprise, the relation to Beijing in several cases made pastoralists think I was from the centre and could somehow be close to the central government, so they became very willing to talk about problems in the local implementation of ecological resettlement. They believed that officials from the centre were capable of helping them to solve problems, and especially they had power over local cadres.

**Power relations and ethical considerations**

As Skelton (2001) argues, there are several possible ways of empowering the researched. Besides allowing the space and time for people to talk about things they wanted to tell me, I repeatedly let people know how useful what they say had been. I had learnt from my previous fieldwork experiences, that reducing the differences between urban and rural, and reducing the educational difference between a scholar and a herder was an effective approach for creating the sense of equality between me and the researched so that the researched was more willing to interact with me. The difference between rural and urban can be shown by dressing more simply in outdoor clothes which can be worn in the house, on the grassland or going across the mud. “By asking the residents to teach me local skills” (Scheyvens et al. 2006: 151) was another important means of showing my genuine interest and appreciation of their knowledge. To use a translator to conduct interviews was also a way of empowering the interviewees and avoiding misunderstandings. Although most of the locals were bilingual, they felt more comfortable speaking Mongolian despite the fact that young people were more fluent in Mandarin.
However, although debates have tended to focus on situations in which the researcher is in a more powerful position than the researched, much less has been discussed about the situations in which the researcher is not in a more powerful position (Mullings 1999). Acceptance of the first interviews was very often based on the sympathy of the researched for me. The sympathy stemmed from observing my efforts to carry out the research. Car trample in sand and mud, distant travel, sitting in the small car to eat a sandwich for lunch, all made me appear powerless in the eyes of the researched. My identity of being an unmarried woman over 30 who was living and working abroad alone also made the researched feel sympathetic. Being both well over the ordinary marriage age of the early 20s, and living far from my parents in China, these facts surprisingly were favourable to my work progress. This was especially true with old people.

Each interview was a negotiation that depended on complex facets of positionality and power that came into play at different points (Skelton 2001). This was my fieldwork experience. The same household could show very different levels of interest and dynamics in conversations in the different interviews. For example, when my car slowed down to approach a yurt, interviewee Gaowa, a woman in her 50s came out to check who we were. On this first occasion, she was very suspicious about who I was after I briefly told her my aims and who I was. She strongly suspected that I was a journalist with a hidden recorder in my car. Therefore, she was very official and reluctant in replying to my questions. Nevertheless, I was very warmly received on the second and later visits and she became very talkative and shared all her life stories.

This work would have been impossible without the generous sharing of experiences by the interviewed people. Although they could not understand why the aim of research was not to help them directly to solve their daily acute problems which I was serious to note down in the interviews, they “forgave” me because of the friendship between us. The limitations of a researcher and the debt to the research people and area were from time to time felt during the fieldwork. For example, while I was taken as a respectful “export”, I could not give any advice on an important local question, how to improve the drinking water quality, which the researched expected an answer from an expert.

**Use of a research assistant**

My research assistant was a female Mongolian from another pastoral county of Inner Mongolia far from the case study area. With a higher education, being fluently bi-lingual, and with working experience of mediating conflicts in the countryside, she was perfect as a research assistant. Her identity as Mongolian and good skills when approaching pastoral families were very
helpful for getting us invited into the houses of the locals. In general, she played a very positive role in shaping the dynamics of my encounters with the locals. Although being a non-local Mongolian prevented me from having the possibility of using an insider’s view and networks, it also became an advantage because the locals felt more freedom to comment on others in the same community. Our friendship also became a reason for her to continue assisting me in the follow-up field trips. Desai and Potter remind us that “translators are not simple ciphers without political or social views of their own” (2006:176). The assistant did tend to filter out the words she felt were irrelevant to my questions at the beginning of our cooperation but upon my constant reminding and explanation of the importance of the narratives to me, she became very careful. Translation also could be wrong, partly due to the different dialect of Mongolian that the assistant spoke compared to the locals but the bilingual ability of most interviewees helped to reduce this problem.

Conclusion

This chapter has described my methods and how they were used for collecting materials and data in this study. I emphasise that the research design has evolved in the process of carrying out the project. Driven by the interest in knowing what occurs at the ground level, this case study is strongly founded on the analysis of the primary data. However, the aim is also to go beyond making a study of a particular locality, and I seek to take a bottom-up approach to expand the view to consider what takes place in the broader processes that fundamentally structure the processes of a particular locality. In this way, the case study also becomes more meaningful by being situated as a part of an analysis of a wider transformation of environmental governance. During the research process, my view has been shifted between different scales in collecting materials and data and further in relating the materials and data to each other for analysis. While my initial idea was to use the materials and data from the broad scales for setting up the contexts for the analysis of the study area, I gradually realised that these materials and data themselves inform important stories which are lack of analysis. These materials and data thus constitute the base for analysis in the next chapter.
5. Environmentalising grassland degradation

This chapter is intended to examine how environmentalisation of the state is operationalised through ecological resettlement. It focuses on exposing the governmental strategies, the embodied logic, ideas and knowledge, and the technologies and mechanisms that the state employs to represent and intervene in the grassland domain. My investigation will be carried out in three steps. The first step is to analyse how the environment is transformed into a site of action. To make the environment actionable is the first step to carry out on it. This means that I am going to expose the reasonings and rationalities that different levels of the state resort to for justifying environmental actions, including ecological resettlement. Analysis is focused on examining the discourses and narratives across policy documents. The second step is to explore what technologies and interventional approaches have been followed to act on the environment. It seeks to show what means are used and why. The third step is to identify what is special about China’s environmentalisation process. This is a step to reflect upon the findings of the first two steps in relation to China’s political system in order to see how it is enabled by the features or mechanisms of the political structure and how these have reconfigured the political dynamics.

Rationalising a governable environment

Forms of thought, knowledge, expertise, strategies and methods of calculation give rise to specific forms of truth and further render the environment actionable with specific technologies. In this section, I seek to analyse how the environment is rationalised into a governable object through the example of ecological resettlement. Rationalising a governable environment includes using “characteristic ways of perceiving and seeing” and “distinctive ways of thinking and questioning” (Dean 2010:42). I argue that government of the environment in China deploys three groups of discourses: the threat/security scenario, degraded but restorable grassland, and ecological knowledge. These discourses are constructed on different scales and target different scales, and they facilitate the spatialisation of governmentality by reconfiguring the relationship between the periphery and the core.
Curtailing ecological threats and constructing an ecological security shelter

China has entered an era of national hyper ‘ecology’ discourses since the 2000s. Political languages have been “ecologised”. Political texts are full of ecological terms such as ‘ecological construction’ (Shengtai Jianshe in Chinese), ‘ecological restoration’ (Shengtai Xiufu in Chinese), ‘ecological fragility’ (Shengtai Cuiruo in Chinese), ‘ecological security’ (Shengtai Anquan in Chinese) and ‘ecological civilisation’ (Shengtai Wenming in Chinese). These terms are loaded with the state’s specific ways of thinking about the environment. Similar to what Mearns and Leach (1996) call narratives, these terms together compose a storyline: due to the ‘ecological crisis’ (causes/facts), there is the need to carry out “ecological construction” (solutions/approaches) in order to achieve “ecological restoration/rehabilitation” (aims). This storyline is well illustrated by the case of sandstorms. The occurrence of sandstorms is described as the manifestation of a specific kind of ecological crisis - desertification and land degradation. Policy-makers actualised the problem and the crisis by referring to the public’s experiences of sandstorms. The words of the ex-head of the State Forestry Administration (SFA), one of the key policy-makers behind the Beijing-Tianjin Sandstorm Source Control Programme, well illustrate this approach:

“(What impressed me most) was the sandstorm on April 5th, 2000. It affected Beijing greatly. You could not see anything beyond a few tens of meters. I was the head of the National Forestry Bureau at that time. That day I was studying at the party school. One comrade asked me, ‘What do you think about the large sandstorm as the leader of the institution in charge? What do you think?’ I told them, ‘If there was no such large sandstorm, it could not attract the attention of the entire society. The time for large scale treatment has arrived.’” (Jinghua Times 2005)

Different estimates and figures that circulated in media reports added to official discourses to suggest the presence of ecological threats. These ecological discourses had a very clear spatial dimension. The territory of western China was described as the source of the ecological crisis. Policy-makers marked the severe climatic events including intensified sandstorms in the late 1990s and the major flooding of the Yangtze River in 1998 as manifesta-

59 A typical news article on a sandstorm is like the following: “Sandstorms, the greatest environmental problem the Chinese encounter in the new century…More than half of China is under the threat of sandstorm…Sandstorms in China sharply increased in the second half of the 20th century. The frequency was 5 times in the 1950s, 8 times in the 1960s, 13 times in the 1970s, 14 times in the 1980s, 23 times in the 1990s, and 12 times in the year 2000… Behind the occurrence of sandstorms is the increasing severity of land sandification. The problem expands at an escalating annual rate: 1,560km2 in 1950-1960, 2,100km2 in 1970-1980, and 2,460km2 in the 1990s – which is equal to the land area of a middle-sized county…Experts estimate that the annual economic losses directly caused by sandstorms are nearly 54 billion Renminbi…”. (Southern Weekly 2001)
tions of a serious ecological crisis in western China. Environmental problems in that region such as soil erosion, desertification, deforestation, water scarcity and land degradation were all suggested as potential triggers of the next ecological crisis (Xinjiletu 2005b; Yeh 2009). Similarly, in the Inner Mongolian Plan of the Beijing-Tianjin Sandstorm Source Control Programme, the reason for the programme was given as “the increasing deterioration of the ecological environment has not only seriously threatened the production and living of the local people, but has also directly affected the ecological security of the Beijing area” (IMDRC 2005). Like-minded researchers reinforce policy-makers’ discourses by claiming that the crisis not only threatens the ecological security of the region itself but also the entire country and even beyond (Liu and Diamond 2005; Shen 2004). While concerns with environmental problems used to stem from their impact on local production and economy, the discourses about the ecological threat have shifted concern to the impact on non-local areas – the large cities, the eastern areas and even other countries. This shift has in turn driven reconfiguration of the relationship between western China and smaller scale areas within it, and other areas.

Environmental discourses proved to be effective in stirring up fears among the public. Fears, not only of Chinese citizens, but also of citizens in the neighbouring countries, in turn led to the formation of a pressure group, with input on political decisions, to support the Chinese government to take action to prevent the occurrence of sandstorms. In other words, the state’s interventions in governing the environment subsequently gained legitimacy with the public. Official discourses use the notion “ecological construction” as an umbrella term for all state-directed initiatives and programmes to improve the rural environment. In the ecologised language, the objective of carrying out ecological construction is “to recover and reconstruct the degraded ecological system and their service functions” (Du 2008:42). According to Jiang (2005), the term ‘construction’ (Jianshe in Chinese) has been linked to a socialist ideology emphasizing ‘construction’ in various arenas since the 1950s. Especially, ‘grassland construction’ (Caoyuan Jianshe in Chinese) in the late 1950s initiated widespread efforts to convert desert regions into productive pasturelands. The old use of the word ‘construction’ takes the meaning of building something new from nothing. While the current use of word in the term ‘ecological construction’ may inherit some mentality of its old meaning, I argue that its use nowadays is more focused on the meaning of fixing and restoring something destroyed. This is in response to the image of a destroyed and exploited environment. The word ‘ecology’ reflects the state’s emphasis on science and ecological principles to manage land re-

News reports at that time mostly implied the exacerbation of environmental deterioration and highlighted the expanding impact of China’s sandstorms on the rest part of the world. An example is Royston’s (2001) ‘China’s dust storms raise fears of impending catastrophe’.

---

60 News reports at that time mostly implied the exacerbation of environmental deterioration and highlighted the expanding impact of China’s sandstorms on the rest part of the world. An example is Royston’s (2001) ‘China’s dust storms raise fears of impending catastrophe’.
sources. The term ‘grassland construction’, still widely used nowadays, accordingly has shifted the focus from movement style production to rationalised management based on scientific understanding.

Following the logic of ecological construction, the state council is seeking to make Inner Mongolia into “an important ecological security shelter in northern China” through:

“implementing key ecological protection and construction planning; strongly promote(ing) large ecological project construction; strengthening ecological construction and environmental protection of key areas and rivers; constructing a national ecological security shelter mainly composed of grassland and forest, with healthy circulation of ecosystems and a harmonious relationship between man and nature.” (State Council 2011)

As I have argued, the discourses of ecological threat have driven the re-configuration of the relationship between western China and smaller scale areas within it, and other areas. The function of Inner Mongolia to the national interests has been redefined as ‘an ecological security shelter’. This new value re-coordinates the core-periphery relationship (Fan 1995) and the frontier concept which is used to study the western borderland and marginal territories. While the Great Wall used to draw a symbolic and ideological line between civilised and agricultural China and the barbarian and pastoral peoples (Lattimore 1937; Williams 2002), the periphery and frontier have been lifted to a core position in relation to the need of ensuring ecological security. This relational function adds a new type of dynamic to the relationship between this region and the centre.

The provincial and lower levels of government actively adapt their discourses to the national discourses so as to fit into the state’s views and interests regarding the region. This mechanism in turn enables unified articulations of the new value across scales. For example, the Inner Mongolia government states in the regional Outline of Implementing Western Development Strategy that the main role of Inner Mongolia in the national Western Development Strategy is to act as “the most important ecological security shelter to China’s north”, and the Outline further elaborates:

“This shelter is the guarantee of Inner Mongolia’s socio-economic sustainable development; it is the security line preventing the capital Beijing and three northern areas from being attacked by sandstorms; and it is the lifeline that will end the drying up of the Yellow River and flooding hazards of the Songliao rivers. Without the improvement of Inner Mongolia’s eco-environment, there is no ecological security for the capital Beijing and the three northern areas. Without Inner Mongolia’s beautiful landscape, people in the northern frontiers cannot live in peace and contentment. Ecological construction is Inner Mongolia’s largest infrastructure construction and it is also the fundamental entry point for implementing the Western Development Strategy in Inner Mongolia”. (IMDRC 2001b)
Vandergeest and Peluso argue that “all modern states divide their territories into complex and overlapping political and economic zones, rearrange people and resources within these units, and create regulations, delineating how and by whom these areas can be used” (1995: 387). I found in my study that, by constructing the view of ecological threat and proposing to construct an ecological security shelter, different levels of the state have sought to redefine the function of western China, manifesting a territorialisation process. This function has also been more and more articulated in terms of ecological function or ecosystem service (Du 2008, 2011). The latter refers to “the service value of natural ecological system that supports human society and economic development” (Du 2008:442). Accordingly, the territory of western China is positioned as a provider of ecological services to the east.

Reasoning about the causes of the ecological threat

In this section, I further analyse the discourses in reasoning about the causes of the ecological threat imposed by sandstorms and grassland degradation, and discuss how the reasoning is related to ecological resettlement. In one of the most significant policy responses after the disastrous phenomena, the National Compendium of the Conservation of Ecological Environment (State Council of China 2000, Guofa 2000 No. 38), determined that natural disasters were driven more by human actions than by natural forces, and irrational management and misuse of natural resources were the key human factors causing adverse environmental effects. In the language of ecosystem service, environmental problems are described as the result of “the destruction and deterioration of ecological service functions” (Du 2008:42). The speech given by the Prime Minister Zhu Rongji during his field visit to Inner Mongolia right after the sandstorms in April 2000 delivered the state’s perceptions of the causes of sandstorms in the following way:

“The direct cause of the frequent sandstorms this year is the normal climate but the more important reasons are deforestation and destruction of grassland for land reclamation, unauthorised mining, excessive digging and overgrazing. Vegetation cover is destroyed, ecological environment deteriorates, and land sandification expands. Although since the establishment of the New China, particularly in the last 20 years, the Party and the government have paid great attention to preventing and curbing desertification and a lot of work has been done, the efforts seem to be far from enough. The speed of preventing and curbing desertification cannot catch up with the speed of land sandification expansion. In some places, destruction occurs at the same time as remedial work and the trend of the general deterioration of the ecological environment is intensified”. (Xinhua News Agency 2000)

Despite acknowledging the role of climatic factors, the speech identified the most important cause of sandstorms as the destruction of land vegetation cover and also mentioned inappropriate production practices such as overstocking, overgrazing and unsustainable farming practices. A widely cited
narrative justifies policy intervention specifically towards grassland in Xilingol League like this:

“On the Xilingol grassland, for a long time, due to the simple industrial structure, the increasing pastoral population put increasing demands on livestock (consumption). To pursue the ‘Number of Livestock Husbandry Industry’ (Toushu Xumuye in Chinese) became the only option. In 1949, the total number of animal in Xilingol league was 1,669,800, but in 1999, the number had reached 18,234,400. The pastoral population increased three times while the number of animals increased more than 10 times between 1949 and 1999. The size of grassland per animal dropped from 170 mu to 14.6 mu. In a normal year, the vegetation was basically all eaten up. The nutrition of the grassland is constantly transformed in large amounts into produce but the grass cannot be restored by the humus that decaying grass could generate. The continued exploitative use of grassland has sown the seeds for an ecological crisis.” (Quoted both in Market Newspaper 2006 and SFA 2006)

This quote further identifies the driver of overstocking as population growth. Although policy is suggested to constitute part of the historical mistakes, it is also said to be “the only option”.

Criticizing the destructive role of human activities is not new but the same as the state’s traditional approach of reasoning desertification and land degradation problems. For example, similar discourses are presented in the national implementation of the United Nation’s Convention to Combat Desertification (CCICCD 2006). Two old groups of discourses are still popular across policy texts nowadays. One group of discourses reasons that overpopulation is the major cause of desertification and land degradation (Hou 2002; Li and Sun 1994; Liu 2002; Ni 2007; Shen 2004; Zhang 2006) and more generally of environmental degradation (Sun 2006; Ya and Ma 2009). The other group ascribes the cause to the accumulation of historical debts. Moreover, Smil notes that Chinese publications often use economic burdens imposed by uncontrolled population growth to measure the country’s environmental crisis (1993:196). In the context of motivating ecological resettlement, a dominant narrative portrays overpopulation as a key mechanism to link environmental degradation and poverty in a downward spiral and in a mutually enforcing cycle (Liu 2002; Zhang, J. M. 2006). Such a narrative is nothing new in development studies. The view of putting humans in opposition to the environment is exactly in line with several entrenched views in

61 An example of such a narrative is like this: “The subsistence conditions are harsh (in the south of Ningxia); the natural resources are deficient; the population is above the carrying capacity of the resources; more than half of the peasants’ income is from agriculture; farming lack of competitive advantage has existed for a long time. The long-term population pressure and economic poverty result in exploitative ways of development of resources based on poor means of production. Over-cultivation, overgrazing and over-gathering of firewood have led to further ecological deterioration. Additionally, frequent natural disasters and low agricultural production efficiency all lead to the area being unable to support its population”. (Zhang, J.M. 2006:138)
the international development debate, including the ‘neo-Malthusian trap’ argument (Shen 2004:641), the ‘orthodoxy view’ (Forsyth 2003; Leach and Scoones 1998), and ‘prevailing wisdoms’ (Gray and Moseley 2005). Although empirical studies suggest the spatial correlation between environmental degradation and poverty is dependent on the scale of analysis (Li and Sun 1994; Zhao and Liu 1996), policy-makers often take the relationship as a scale-irrelevant truth.

The above belief in the negative impact of human activities on environment thus set up the basis for adopting restrictive measures to limit human impact and to let nature restore itself. The resettlement measure in ecological resettlement is a good illustration of this way of thinking. The belief fuels the argument for the positive effect of depopulation in the pastoral areas. What the vice governor of Xilingol League Adiya said when she commented on ecological resettlement is a good illustration. She said:

“Xilingol league is sparsely populated with less than 20 pastoralists distributed over the 18 square kilometres of grassland. To move out one pastoralist means to relieve the ecological pressure on one square kilometre of grassland. This involves less investment and it takes a short time to see the (positive) effect. It is the best and fundamental way to solve the problem.” (Inner Mongolia Daily News 2006)

The seemingly logical solution however ignores a basic fact about the region, namely that the distribution of pastoralists is very uneven on the grassland due to demographics and the varied types of grassland and physical conditions across the league (Zhang 2006).

On top of overpopulation discourses, a historical dimension can often be identified. Official documents and media reports suggest that hazards including sandstorms are the ‘revenge of the nature’ (Beijing Times 2002; Guangming Daily 2002; Southern Weekly 2001) due to accumulated exploitation and misuse (Smil 1993; Shen 2004; Xinjiletu 2005b). Ironically, most instances of large-scale exploitation were the consequences of previous state policies. Underlying the state policy is the way of thinking about human-nature relations. The ways in which nature is understood determine the ways in which it is used. The Maoist ideology of ‘humans conquer the nature’ neglected environmental conditions and led to aggressive use of land after 1949 until the economic reform started (Shapiro 2001). In the context of grassland, three rounds of large-scale farming reclamation are widely blamed for desertification and grassland degradation: the first round was a

---

62 Li and Sun (1994) argue for a high spatial correlation between the distribution of environmental sensitive areas and poverty-stricken areas at the county-level across China; while Zhao and Liu (1996) argue that the correlation between the distribution of environmental fragile areas and poverty stricken areas at the county-level is more true for the middle and western regions of China than the eastern region due to factors including undeveloped transportation, complicated topography and disadvantaged economic geographical locations.
result of free immigration of Han to the steppe; the second was a result of the state’s movement style of production during the commune and the Cultural Revolution period; and the third was a result of the pursuit of market-oriented production (Liu 2002). Williams (2000) raises a cautionary note, suggesting that there has been an official tendency to use a spatial strategy which points the blame at local users - one source stating that “environmental restoration can only begin once primitive traditional practices have been replaced” - as well as a temporal strategy which seeks to lay responsibility at the feet of previous government regimes.

Constructing ecological knowledge

Desertification and grassland degradation are not undisputed facts but it is the knowledge of policy-makers and experts which identify where degradation takes place, how the land should be restored, how long the people should leave, and whether the land has been restored. In this section, I move on to discuss the construction of knowledge backing up the statements on problems and solutions to desertification and grassland degradation. In my study I found that, despite the claim of consulting expert scientists and despite official field visits, the quick decision to launch Beijing-Tianjin Sandstorm Source Control Programme was hardly based on the collection and analysis of long-term data within the area of the programme. The problem is that the policy did not take into account the complexity of the extent and causes of the problems and the programme territory does not spatially match the areas with real problems. Terms such as desertification, land degradation and sandification are often interchangeably used and are vague in their meaning in the official discourses. This is similar to what happened in other parts of the world.

Moreover, although grassland degradation and desertification were always stated to be facts, they were mostly a rough idea lacking precise reference to spatial distributions and temporal scales. In scientific communities, the solutions to, as well as the extent, causes, processes, and mechanisms of sandstorms, desertification and land degradation are all contested.

---

63 Desertification was added to the Chinese state’s action agenda earlier than grassland degradation. It was in close relation to China becoming a part of the international initiatives which started with the United Nations’ Conference on Desertification in 1977. The control of desertification has been managed by the Desertification Prevention and Control Office (Fangsha Zhisha Ban in Chinese) under the National Forestry Administration. By signing the UNCCD in 1994, the state’s policies and actions are strongly influenced by the narratives and approaches of global environmental governance (Adger et al. 2001). The national concern for grassland degradation came later than desertification. Data on grassland was less abundant. The last major grassland census was completed in 1983 (Brown et al. 2008:40). Unlike desertification, the issue has been managed by the Animal Husbandry Bureau of the Ministry of Agriculture.
ical process of producing a sandstorm is complicated, and scientific understanding of it is currently very limited. Sandstorms often originate from the arid and semi-arid areas. They occur when low precipitation is combined with intensive evaporation and strong winds in the spring and autumn seasons. Although Chinese research on sandstorms, mostly concerned with meteorology and physical geography, had already started in the 1970s, it was mostly focused on small regions at the local scale. Studies focusing on the national scale or the larger northern China scale mostly came after 2000 after the environmental initiatives were launched (Ci 2001; Du et al. 2005; Kang et al. 2010; Lv et al. 2004; Quan et al. 2001; Qiu et al. 2001; Ye et al. 2000; Yang et al. 2001; Zhang et al. 2002). These studies are still debating the casual factors, mechanisms and temporal and spatial characteristics of sandstorms, desertification and land degradation. Reviews of sandstorms in meteorological records have different conclusions regarding the frequency and severity of sandstorms between 1950 and 2000 based on different accounts of scales and classifications: while some argue for a general increase in sandstorms, others argue for the opposite. Furthermore, the assumed causal relationship between sandstorms and land degradation is argued to be conditional rather than certain. Scholars agree that land conditions and meteorological conditions are two categories of deterministic factors related to the occurrence of sandstorms but they have divided views regarding the mechanisms through which the factors contribute to the occurrence of sandstorms and more studies are yet to be done on a large scale. It is generally accepted that land conditions, although significant, do not produce sandstorms by themselves and sandstorms do not mean the degradation of land conditions either, and even if they do, the scale and place of land degradation can vary each time.

Views on desertification and grassland degradation have for long been quite divided and the debate is still going on. While one group of views

---

64 In the Chinese meteorology system, dust and sand weather are classified into three types according to the level of severity. The main indicators are visibility and wind scale. Weather types are floating dust weather (1km < visibility < 10km and wind scale < 5), sand weather (1km < visibility < 10km and wind scale ≥ 5) and dust storm weather (visibility < 1km and wind scale ≥ 6). Dust storm weather can be further classified into three types. They are dust storm (0.5km < visibility < 1km), strong dust storm (0.05km < visibility < 0.5km) and extreme strong dust storm (visibility < 0.05km).

65 Their opinions diverge regarding the relevance and significance of specific driving factors such as wind (Chen and Tang 2005), temperature (Chen and Tang 2005; Lin et al. 2001), precipitation (Chen and Tang 2005; Zhang et al. 2002), soil quality, soil erosion and, land use and cover (Lv et. al. 2004), and how they are combined. Geographers believe meteorological factors not only work as direct drivers of dust storms but also work indirectly through affecting the land conditions. However, investigations on the mechanisms of interactions are still preliminary and are limited to specific places; cross-scale studies are yet to be done (Du et al. 2005).

66 According to Li (2009), Chinese scientists noted the visible form of dryland environmental change long time ago, but it did not cause broad concerns until the 1980s. Natural scientists
takes desertification and grassland degradation as a serious and realistic problem, which was largely overlooked by the state (Brown et al. 2008), the other group is more careful to generalise the situation but rather seeks to scrutinise the real extent and processes of land change in specific areas. Contrary to the general statement of land degradation, the findings of the latter group suggest that grasslands have not been degraded in certain areas but were degraded in other areas within a certain period of time (Brogaard et al. 2005; Jiang 1999, 2003; Runnström 2000). Regarding the causes of grassland degradation, the mainstream view is like that of Zhu (1998) who claims that anthropogenic factors account for 94.5 per cent of grassland degradation. Nevertheless, more voices argue that climate instead of humans might be the key factor triggering desertification and grassland degradation (Harris 2010; Ho 2001b; Li and Zhang 2009; Julia 2004, 2007; Yang et al. 2007). Grassland degradation in Inner Mongolia is ascribed not only to the same causes noted in official discourses, i.e. historical immigration of Han Chinese and reclamation of grassland (Humphery and Sneath 1996; Sheedy 1992; Zhang 2006), and land misuse (Brown et al. 2008; Sheedy 1992), but also to other causes such as natural resource endowment (Dickinson and Webber 2007) and climatic conditions (Dai et al. 2008; Ho 2001b; Li and Zhang 2009; Williams 2000).

Williams (1996a, 1996b) argue that the Chinese knowledge of land degradation is so objectively constructed that the subjectivity inherent to the topic of land degradation is seldom problematised. Social and political studies of desertification and land degradation are comparatively few but are on the rise. Most studies suggest that land privatisation under the HRS was the major cause of rapid rangeland degradation in the 1980s and 1990s due to the ambiguity and insecurity of land tenure (Banks 1997, 2001, 2003, 2005; Ho 2000; Longworth and Williamson 1993; Williams 1996a), and uneven enforcement of Chinese grassland policy is one of the reasons for continued rangeland degradation (Ho 2000). Another group of scholars ascribe degradation to land privatisation because it results in reduced mobility of livestock and increased grazing pressure within the household rangeland (Li et al. 2007; Zhang and Li 2008).

Unfortunately, the above views from research do not feed into a more complex way of thinking about desertification and land degradation problems among policy-makers. Although grand perceptions and discourses remain dominant in political texts, the state has also been devoted to develop-

---

67 These studies are inspired by the non-equilibrium model at the core of the new range ecology (Behnke and Scoones 1993; Ellis and Swift 1988).
ing legal, institutional and technical frameworks for directing ecological-knowledge-based interventions since the 2000s. The Grassland Law in 2002 provided the legal base for enforcing the Grass-Livestock Balance Management Method and the Standards for Appraising Grassland Carrying Capacity. More functional administrative units have been established within the political system for monitoring and assessing grassland (see Figure 5). Academic institutions are also closely involved in providing technical and knowledge input. The knowledge-based approach was in the wide context driven by the Chinese Communist Party's call for a ‘scientific outlook on development’ (Kexue Fazhan Guan in Chinese) to take a comprehensive, integrated and holistic approach to development (Du 2011:43); and the link between environmental protection and scientific outlook was explicitly institutionalised by the State Council’s decision (State Council of China 2005, Guofa 2005 No. 39) which emphasises “scientific planning”. I identify three trends of on-going change. First of all, the establishment and development of monitoring and warning systems to collect and provide more data regarding the processes of sandstorms, desertification and grassland degradation. The monitoring and warning system on sandstorms was established through combining data from remote sensing, ground stations and informants according to the simultaneously published Sandstorm Ground Monitoring Technical Specifications (CPGPRC 2009). State-level monitoring of desertification started from 1994 when China signed the United Nations Convention on Combating Desertification (UNCCD), and a nationwide inventory on desertified land was set up to provide data for regular publications (Report on the Status Quo of Desertification and Sandification in China) to report the status of desertification and sandification. A grassland monitoring and assessment system was established later through the setting up of the Grasslands Monitoring and Supervision Centre under the Ministry of Agriculture, and regular reports (National Grassland Monitoring Report) have been published every year since 2005. These reports provide regular and systematic articulations of the state’s perceptions of and ways of dealing with grassland degradation and desertification.

The second trend is the standardisation of the ways of measuring and presenting the perceived desertification and grassland degradation. The guide-
Parameters of Degradation, Sandification and Salification of Rangelands (SGAQSIQ 2004) was released by the state to guide the assessment of rangeland conditions. Reports such as the Report on the Status Quo of Desertification and Sandification in China and the National Grassland Monitoring Report are the major channels to promote standardisation. They attempt to standardise definitions. The Report on the Status Quo of Desertification and Sandification adopts the same definition of desertification as the one used by UNCCD, “land degradation in the arid, semi-arid and dry sub-humid areas resulting from various factors including climatic variation and human activities. The degraded lands in these areas are desertified lands” (SFA 2011b). Nevertheless, this definition is still quite vague as regards the middle ground. Reports also attempt to standardise measures. For example, the grassland monitoring reports highlight three measures to evaluate the improvement of grassland conditions - height, coverage and productivity of vegetation (MA 2009).

The third trend is the extensive use of statistics in official discourses. Statistics are used in several ways: to address the severity of conditions, to demonstrate improvements, and to project scenarios. For example, the Report on the State of the Environment in China 2000 (SEPA 2001) addressed the situation of grassland degradation in this way:

“The degradation, desertification and salinisation of grassland is constantly expanding. Currently 90 per cent of the (national) grasslands are degraded to varying levels. The area of the grassland with a middle level of degradation accounts for more than half of the total. The area of degraded, desertified and salinised grassland has reached 135 million hectares, and is still increasing at an annual rate of two million hectares. Therefore, the ecological situation of grassland is very serious.”

The figure that 90 per cent of the grasslands are degraded is especially widely circulated and cited in official discourses, media and academic works. To illustrate the cause of grassland degradation, the Report on the State of the Environment in China 2000 states that, “the grasslands in northern China were overstocked by 30 to 50 per cent” (SEPA 2001). Statistics also percolate through the political structure to fashion the language used to talk about grassland degradation at the lower levels. As I have mentioned in the section on the local physical environment in Chapter 2, the severity of grassland degradation has been addressed with accurate statistics from ecological assessments.

Through the above institutional efforts, knowledge-based discourses constitute a new form of power to reach out and transform the public’s perception of the issue. The state presents the fact that grassland has been greatly

---

71 This figured was stated for the first time in the Report on the Population, Resources and Environment of China (SDPC 1996) and then the national Ecological and Environmental Situation Report 1998 (SEPA 1998).
degraded and states that anthropogenic factors are the main cause. The state at the same time builds up the belief that these environmental problems are solvable but only through the proposed technocratic interventions. These discourses are thus powerful in abstracting the reality and decontextualizing the localities. As I have discussed, the complexity and debate on knowledge related to desertification and grassland degradation is rarely reflected in the official discourse. Instead, selectivity and simplicity are the greatest problem with knowledge-based environmental governance. Questions have been raised regarding methods of official data collection (Harris 2010; Yeh 2010). Harris makes the criticism that “many analyses of this question (the causes of rangeland degradation) rely on logical shortcuts, selective inclusion of existing data, and/or underlying prejudices” (2010:3). Yu (2009) criticises the lack of an independent evaluation system for the effects of environmental programmes, pointing out that evaluation is conducted by the management institutions themselves; therefore, published assessment results may be flawed. Moreover, the state’s incorporation of scientific knowledge is only dependent on the ‘export knowledge system’ (Xun 2011), which is strongly embedded in an equilibrium model, assuming stability, predictability, measurability and zero-sum physical system, and social sciences are totally excluded from its knowledge construction.

Acting on the environment: technologies of ecological resettlement

As well as analysing how the environment is rationalised to be governable in the previous section, I continue to analyse what technologies are used to act on the objectified environment. The technologies related to ecological resettlement are subordinated to two contexts, the Western Development Strategy and the new way of managing the national environmental territory.

Developing western China: Modernisation, industrialisation and urbanisation

A popular image of western China as the backdrop of the environmental policies towards the region is that it is a region with low living standards, backward ways of living, and harsh natural conditions. The basic belief behind the Western Development Strategy is therefore to copy successful reform experiences in eastern China to the western region. These experiences can be summarised as modernisation, industrialisation and urbanisation. The state also makes the public believe that the east is the good future of development and now the state is giving support to the west so it can catch up. Such a belief frames the orientation of environmental governance as well.
The Xilingol League government proposed its regional strategy the ‘Weifeng Zhuanyi Strategy’ for controlling sandstorms right after the Prime minister visited the sand sources of Inner Mongolia (XLPC 2001, Xidangfa 2001 No. 2). The title of the strategy vividly represents the local government’s policy approaches, ‘Weifeng’ means to enclose (grasslands), and ‘Zhuanyi’ means to move (people). The strategy claims a comprehensive regional approach: systematic land use restriction, change of production modes and economic restructuring. Industrialisation and urbanisation are proposed as effective ways to relieve pressure on grassland and to change the traditional ways of herding that are dependent on climate. This strategy was upgraded to ‘Liangzhuan Shuangying’ in 2006, literally meaning ‘Two changes and double wins’. ‘Two changes’ refers to the change of production mode from traditional to modern and the transfer of the population from rural areas to cities and towns; ‘double wins’ means the win-win situation between ecological restoration and the wealth of pastoralists. ‘Two changes’ are believed by the policy-makers to be a fundamental way to achieve “double wins”. Four basic measures were at the same time proposed in the slogan “Reducing livestock, increasing green, moving people and increasing income” (Jianxu, Zenglv, Zhuanren, and Zengshou in Chinese). Accordingly, the indicators of achievement are focused on the reduced number of livestock and the increase of non-pastoral incomes.

A more specific demonstration of modernisation and industrialisation is the common model ‘ecological resettlement Village’ (Shengtai Yimin Cun in Chinese) which has been developed in Xilingol league since 2001. Following almost the same physical structure, these villages were built on new settlements near towns. ‘Five accesses’, namely access to electricity, tap-water, highways, telephones and a postal service, were required as the basic standards of these villages. The idea of the government is to locate the settlements in places with good access to markets, given the market-oriented production of the settlements. Policy-makers in Xilingol League government predicted several benefits of this model: constructing these new settlements would drive infrastructure constructions; introducing new types of agricultural production in these villages would support regional industrial restructuring; and these settlements would facilitate the local development of small towns and markets.

---

72 This is according to the tradition of updating development plan every five years.
73 There is no statistics on how many such villages were established. If there was one milk cow station in each village, there would be 79 villages.
Figure 8. Demonstration sign in an ecological resettlement village in Xilingol League. A name sign is often displayed at the entrance to villages, which indicates the affiliation to a specific government project.

Figure 7. Propaganda on an ecological resettlement village in Xilingol League. The slogan written in both Mongolian and Chinese on the wall states “Fully implement the ‘Weifeng Zhuanyi’ strategy!”

Figure 8. Demonstration sign in an ecological resettlement village in Xilingol League. A name sign is often displayed at the entrance to villages, which indicates the affiliation to a specific government project.
After some village-based experiments in developing the breeding business, Xilingol League promoted dairy farming across all the villages. Dairy farming was said to be a more advanced mode of intensive agriculture: resettled households were subsidised to purchase and raise milk cows, and then sold milk to the milk collection station in the village every day. This milk was then be collectively transported by dairy companies’ trucks to the closest cities with processing factories. Optimistic policy-makers claimed that this business was a good operationalisation of the national emerging ‘enterprise + peasant households’ development model. This model claims that, by incorporating peasant households into the production chain of large enterprises, they face fewer risks and gain better positions in the market. In this case, the local policy-makers claimed that, by incorporating the small-scale dairy farmers into the production chains of the large dairy processing companies through contracts, the resettled households would benefit from a guaranteed channel of supply and constant cash income. Additionally, barn feeding of milk cows was thought to have the lowest negative impact on the surrounding environment.

According to the Weifeng Zhuanyi reports (XLEO 2002, 2003, 2004, 2005, 2006), in the ecological resettlement villages, 79 milk collection stations were built up; milk cows were purchased both domestically and from abroad through the local governments’ arrangements, and numbers reached 22,278 in 2003 and jumped to 51,734 in 2004. Moreover, 6041 households and 26,368 persons were registered for raising milk cows in 2006, which was 47 per cent of the total resettled population. The boom in dairy farming in Xilingol League was part of a similar process in Inner Mongolia where the number of milk cows sharply increased from 500,000 to three million, and more than 100 thousand people became milk cow farmers between 2001 and 2008 (Oriental Outlook Weekly 2009). Oversupply and other problems with the model of ‘company + peasant household’ (Lin 1994; Zhang 2009) caused this business to crash in most resettlement villages. As part of the ecological resettlement processes in the case study area, I will conduct a deeper analysis of the dairy farming business in Resettlement Village S in Chapter 6.

China’s modernisation programme is also characterised by its preference for urban and industrial forms of development over rural and agricultural forms (Peet and Hartwick 2009; Wilsem et al. 2011). Urbanisation has been taking place in China at a rapid pace, even though, historically, it has taken developed countries much longer. The size of the urban population has more than doubled in the last thirty years and exceeded that of the rural population for the first time in history in 2011. Rural-urban migration has been an important contributor to China’s urbanisation. It has not only generated positive effects on China’s economic growth through supplying a large pool of rural migrant workers to the manufacturing sector in cities, it has also increased rural households’ incomes through remittances (Cindy 2003, 2008; Murphy 2009). China’s urbanisation has been driven by socio-economic development
and also at the same time has fed into further socio-economic development (Xu and Liu 2011). While urbanisation was more the result of economic growth in the early years, policy-makers have become interested in pushing urbanisation as an engine of economic growth. Urbanisation was made an explicit development strategy in the 10th Five-Year Plan (2001-2005) and repeated in the 11th Five-Year Plan (2006–2010). The urbanisation rate is used as an indicator of development level and as a measure of regional politicians’ performance. The state plans to further urbanise 250 million rural residents by 2025 (Johnson 2013), or to make 60 per cent of the country’s population urban residents by 2020 according to the National New-type Urbanisation Plan (2014-2010) (Xinhua News Agency 2014). Development through promoting the urbanisation approach is not yet very common internationally. However, the relationship between urbanisation and economic growth is more contested in international research (Bertinelli and Black 2004; Fay and Opal 2000; Lewis 1954; Polèse 2005), and developing countries are seen to be more focused on controlling rural-urban migration instead of promoting it (Cohen 2006).

However, the urbanisation level is argued to be spatially uneven, with eastern coastal areas over-urbanised while the western are is under-urbanised (Chen et al. 2010). In western China, a top-down and policy-driven approach to urbanisation is more apparent. Urbanisation of western China is also intended to relieve the pressures of migration to the eastern coastal areas. Labourer export strategies have been deployed by local governments in many peripheral places in western China for a long time, aiming to send labourers to urban areas through formal arrangements with urban units so that a shift towards a non-agricultural work regime may take place to alleviate household poverty and stimulate local economic development (Guang 2005; Harwood 2009). Since the launch of the Western Development Strategy, ecological resettlement has been one of the forms of engineering a movement of the rural population to urban areas. Ecological resettlement is also advocated as a way of promoting urbanisation in western China (Cui et al. 2004; Sang 2005). This policy orientation was further upgraded when the second phase (2011-2020) of the Western Development Strategy claimed that the state would give more support to industrialisation and urbanisation in the west. In Inner Mongolia, a specific policy for promoting rural population flow to cities, ‘transferring population’ (Zhuanyi Renkou in Chinese), was launched in the 2000s.\(^{74}\) Population transfer includes both ‘project-based resettlement’ (Xiangmu Yimin in Chinese) and ‘non-project-based resettlement’ (Zizhu Yimin in Chinese). Policy-makers in Xilingol League has sought to use ‘four changes’ to further promote population transfer since 2006: changing from

---

\(^{74}\) Transferred population refers to the population who are registered in the rural areas but who migrate to reside in the urban areas for more than one year. Additionally, their main sources of income are expected to be from non-agricultural activities.
transferring pastoralists within the agricultural industry to helping pastoralists to work in the second and tertiary sectors in urban areas; changing from only depending on ecological programmes to moving rural people to depending on a comprehensive policy and multiple channels; changing from government-led resettlement to market-driven voluntary rural-urban migration; and changing from transferring within banners (counties) to transferring to central cities and industrial areas (XLPC 2006). The League government has also promoted an age-group-focused transfer strategy, proposing that “old people enjoy retired life in the city, children go to schools in the city, youth go to start entrepreneurship in the city, and rich households purchase property in the city” (ibid.). Therefore, ecological resettlement is subordinated to industrialisation and urbanisation technologies that the regional and local governments adopt in pursuit of modernisation. Besides direct engineering of population movements, social policies towards rural areas are also contributors to rural-urban migration, especially in peripheral and marginalised rural areas. They indirectly impact migration decisions through modifying the social infrastructure in rural areas. The most significant change has been the removal of primary schools from the village level. Nearly 50 per cent of township level administrations disappeared upon the merging or removal of these schools between 1999 and 2007 in the whole country. In Inner Mongolia 80 to 90 per cent of primary school students and all secondary school students are expected to board at schools located in towns and county capitals (Chang 2007).

Zoning and re-organisation of technocratic fixes

After discussing the technologies subordinated to the context of the Western Development Strategy in structuring ecological resettlement, I shift to discussing the other context, the new way of managing the national environmental territory. I argue that the general approach, “ecological construction”, is operationalised through a new type of technology - zoning. The term ‘zoning’ (Quhua in Chinese) suggests a specific technique deployed to divide the territory, assign new values and further direct different policies towards an area. In relation to the environment, the Chinese state has used zoning to construct and manage the national territory according to a set of environmental values. On top of that, old technocratic fixes together with new ones are re-organised into different zones. In this section, I focus on discussing three kinds of zoning that structure ecological resettlement - ecological function zoning, zoning in the Beijing-Tianjin Sandstorm Source Control Programme, and zoning in Xilingol League’s Weifeng Zhuanyi Strategy.

The National Outline of Ecological Environment Conservation (State Council of China 2000, Guofa 2000 No. 38) claims that ‘ecological function zoning’ (also translated as ecosystem service zoning, Shengtai Gongneng
Quhua in Chinese), is a new instrument “to address sustainable land use, natural resource utilisation and industrial processing, and the objective is provide a scientific baseline to economic growth and safeguard the sustainability of the environment” (Du 2008:441). It also defines ecological functions as “the service value of a natural ecological system that supports human-society and economic development” (Du 2011:57). This new instrument has been gradually put into place after assessing the ecological environment status, ecological sensitivity and the importance of ecological functions, and finally, based on these assessments, has divided the national territory into zones. The zones are constituted of four levels, which include three large ecological zones, 50 ecological zones, 206 sub-zones, and 1465 ecological function areas. Among these, western China includes 30 ecological zones, 104 ecological sub-zones, and 686 ecological function areas (Liu 2005). The smallest zone unit, the ecological function area, is composed of five types of areas, including wind prevention and sand fixation, water source conservation, biodiversity protection, soil conservation and flood water storage. Figure 9 below illustrates that the case study area is classified in a wind protection and sand fixation ecological function area.

A complex group of knowledge sources and technologies were adopted to assess, map and quantify the “benefits humans receive from ecosystems” in the zoning process, with the assistance of environmental scientists, ecologists and physical geographers (Ouyang et al. 2009). However, the methods and indicators for assessing ecosystem services and classifying the zones are debated and are not straightforward. Although natural scientists were widely consulted, social scientists were rarely included. The Chinese approach goes along with the approach of global environmental governance in the Millennium Ecosystem Assessment. Western China was the site of China’s Millennium Ecosystem Assessment project (Liu 2005). Although it is rarely questioned in the Chinese context, ecosystem service is a highly debated concept, both as part of the debate between ecological economics and

75 The first level “ecological large zone” is classified by its climatic and geographic characteristics; the second level “ecological zone” is classified by ecological system types and geomorphologic characteristic; the third level “ecological sub-zone” is classified by structural characteristics and ecological systems; and the fourth level “ecological function area” is classified by the importance of ecological functions and environmental sensitivity. A database (http://www.ecosystem.csdb.cn/) has been established to provide data and maps on ecosystems and ecosystem services zoning.

76 This zoning system was primarily developed through the research project ‘Countermeasures to Key Environmental Problems and Key Supporting Technologies’ in 2003, and involved more than 20 of the most important research institutions in the field of the environment in China.

77 Think tank scholars Ouyang et al. (2009) list indicators such as Ecological Carrying Capacity, Ecological Footprint, Ecological Risk, Ecological Security, Ecosystem Health, Ecological Sensitivity and Ecosystem Integrity as alternative ways of making assessments and they also suggest there are different challenges in quantifying the indicators.
environmental economics, and in criticism of neo-liberalism (Dempsey and Robertson 2012). Critics argue that the same language across governments, NGOs, scientists, international institutions, donors and resource managers on ecosystem services tends to result in the environment being considered as a set of economic calculations; and to commodify nature (Bakker 2010). Nature has been seen in numerous ways “as a commodity, as a resource, as an ecosystem service, or as a socio-natural assemblage” (ibid.:716). The emergence of ecosystem service is strongly related to the rise of neo-liberalism internationally. It depends on markets as the core mechanism. This logic fits quite well with the market-oriented reform in China.

The choice of places to implement ecological resettlement projects is structured in policy by the value of ecological function. As I have mentioned before, ecological resettlement is defined as a restrictive measure to target “people living in ecologically significant areas, ecologically fragile areas and areas losing basic subsistence conditions” (State Council of China 2002, Guofa 2002 No. 10). The notions of ‘ecologically significant area’ and ‘ecologically fragile areas’ are further mapped in two policies, National Ecologi-
cal Function Zoning (Huanfa 2008 No. 35) and the National Ecological Fragile Area Protection Plan Outline (Huanfa 2008 No. 92). Nevertheless, many ecological resettlement projects were already carried out before the introduction of the ecological function policies. To what extent the prior practice and later policy spatially match each other is under-researched.

Zoning and mapping technologies have also been adopted in the Beijing-Tianjin Sandstorm Source Control Programme. The programme area is classified into four zones based on the geographic and agricultural characteristics: zone I, arid grassland sandification control area; zone II, Hushandake sand land control area; Zone III, agro-pastoral border sandification land control area; and Zone IV, Yanshan hill and mountain water source protection area (see Figure 10). The first phase of the master plan of the Weifeng Zhuanyi strategy (2001-2004) divided its administrative territory into four zones, four belts and twelve basic points, aiming to build up an urban ecological protection system (see Figure 11). The four zones are: the Enclosure and Grazing Prohibition Zone, the Sand Land Control Zone, the Seasonal Grazing Prohibition and Rotational Grazing Zone, and the Returning Farmland to Forest and Grass Zone. The case study area falls into the Enclosure and Grazing Prohibition Zone.

The zonings facilitate the continued use of technocratic fixes but these fixes are organised according to the zones. The Chinese state’s handling of environmental problems has a strong tradition of relying on technical solutions. Before the large scale interventions, various technocratic fixes were enforced by local governments with the objective of addressing the grassland degradation problem by enhancing the productivity of the land (Jiang 2006). Typical practices included fencing grassland, planting trees, shrubs, and grass, and irrigating cropland. The fixes used to be directed as top-down political orders to local places to enforce without any detailed reasons. What was new after the 2000s was the introduction of new technocratic fixes and re-organisation of technocratic fixes according to zonings. From a governmentality perspective, technical means are a condition of governing: they are the means for the authority to achieve its ends, and they often impose limits on what it is possible to do (Dean 2010:42). The Beijing-Tianjin Sandstorm Source Control Programme adopted varied technocratic fixes according to the geographical and production features of the four zones which included vegetation protection, tree and grass planting, conversion of farmland to forest, grassland management, water-saving irrigation infrastructure construction, small watershed treatment and also ecological resettlement. The Weifeng Zhuanyi Strategy has adopted more grassland-focused technocratic

78 The second phase of the plan (2005-2007) upgraded the zoning to four zones, six belts and forty basic points.
79 A main approach to control desertification in China was for a long time to carry out massive plantation of trees, the greatest project being the Three North Shelterbelt Forest Programme.
Figure 10. Illustrative map of zoning in the Beijing-Tianjin Sandstorm Source Control Programme.
Legend: Zone I. Green: Arid grassland sandification control area; Zone II. Yellow: Hushan-dake sand land control area; Zone III. Sand: Agro-pastoral border sandification land control area; Zone IV. Pink: Yanshan hill and mountain water source protection area.

Figure 11. Zoning in the Weifeng Zhuanyi Strategy.
Legend: Pink area: Returning Farmland to Forest and Grass Zone; Sand area: Sand Land Control Zone; Light blue area: Enclosure and Grazing Prohibition Zone; Yellow green area: Seasonal Grazing Prohibition and Rotational Grazing Zone.
Source: Xilingol League Government.
fixes, which include fencing, applying a stocking rate, grassland seeding and improvement. The strategy also advocates developing efficient and intensive livestock systems with improvement of value-enhancing infrastructures in the ecologically better zones, meanwhile banning any grazing activities and moving people out of the worst zones.

The application of ecological resettlement is not limited to a specific zone in the Beijing-Tianjin Sandstorm Source Control Programme, but it is limited to the Enclosure and Grazing Prohibition Zone and Sand Land Control Zone in the Weifeng Zhuanyi Strategy. Compared to the old single approach of enhancing land productivity, the emergence of a grazing ban and ecological resettlement suggest an alternative passive intervention approach to ecological construction. At the same time it reflects that a seemingly contradictory attitude towards nature is coming into being. While construction continues to be the central discourse and belief, another discourse and a belief in nature’s self-restoring capacity have also been advanced. The latter, together with the belief in overpopulation, justify the measure of moving people out of the problematic areas, whereas the measure also perfectly fits into the broad development approach of industrialisation and urbanisation.

The above zonings subordinated to different plans, programmes and strategies proposed at different levels are all manifestations of the state’s reterritorialisation technology. Although individually they have clear rationales, it is unclear how the different zonings coordinate with each other since they suggest different classifications of the same space. Moreover, all of them go across some previous and fundamental zonings such as the administrative zoning (e.g. a territory of a province or county) and the agriculture zoning (e.g. animal husbandry and fishery). This raises challenges to the divisions between jurisdictional authorities in administrative units and the sector-based structure of natural resource management. These new technologies further complicate the deployment of different forms of power. Du (2008) argues that, it is extremely difficult to get every authority committed to this new approach and its new terms of reference due to the need for cross-sectoral cooperation and coordination. I will come to a similar point in the next section when I will discuss the conflict of interests within the political structure.

Governing grassland in the Chinese way

In this section, I reflect on the special dynamics of China’s environmentalisation by discussing how the government of the environment is enabled by the features or mechanisms of the political structure and how it has reconfigured the political dynamics.
Central supervision and decentralised decision-making

Many studies and media reports claim ecological resettlement to be a national policy but without indicating a specific policy. According to Bao and Xun (2007), there actually exists no specific or exclusive policy on ecological resettlement at the national level. I conclude the same having examined policy documents. Instead, ecological resettlement is considered a facilitating measure in different types of documents, mostly related to environment and development. The earliest and clearest articulation of ecological resettlement at the national level is in the State Council’s Several Opinions on Improving the Measures of the Returning Farmland to Forestry Policy (State Council 2002, Guofa 2002 No. 10).\footnote{Item 22 states that, “for strengthening ecological protection and construction, it is necessary to make ecological resettlement and mountain enclosures in the Returning Farmland to Forestry programme, and to implement ecological resettlement for people living in ecologically significant areas, ecologically vulnerable areas and areas without basic subsistence conditions. Within the moving out zone, farmlands are entirely left without cultivation, grasslands are entirely enclosed for growing and restoring vegetation, and mountains are entirely enclosed for growing and restoring forestry and vegetation. The state offers subsidies to ecological migrants for constructing production and living infrastructures. Local governments must be effective in carrying out production and living infrastructure construction in the resettlement destinations, making appropriate arrangements for rural households as regards ecological resettlement and solving their livelihood problems. In suitable places, ecological resettlement should be combined with small town construction.”}

The clearest national rule regarding ecological resettlement is that, in the 11th Five-Year Plan for Anti-poverty Resettlement, the compensation level is set at a maximum of five thousand yuan per person. In the Outline of the 11th five-year plan (2006-2010) of Social and Economic Development (State Council of China 2006), ecological resettlement is clearly stated in Box 18 on ‘The Key Fields the Central Government would Invest to Support under Public Service’ and Box 8 on ‘The Function Position and Development Direction of some Restricted Development Areas’. These suggest that the central state only gives direction rather than specifications.

I argue that this reflects the state’s new way of governing: distant governance. As Sigley (2006b) noticed, a very subtle but important conceptual shift took place in Chinese governmental discourse in 2005 when the official statement of the 11th Five-Year Planning substituted the Chinese term ‘Jihua’ with ‘Guihua’ to refer to ‘planning’. ‘Jihua’ had been the official term for the socialist plan in China since the inauguration of five-year plans in the 1950s and it “implies detailed planning and intervention associated with orthodox socialist planning” while ‘Guihua’ connotes a more managerial and supervisory role of the CPC and the government (ibid.). The change of the term was an important sign of the wide shift in the ways of governing, from detailed state planning to more macro-level supervision or ‘distant govern-
ance’. The state’s shift to a supervisory role was well manifested in the series of environment-related plans in the last decade (see Table 2).

*Table 2. China’s key supervisory plans of governing the environment since the 2000s.*

<table>
<thead>
<tr>
<th>Issuing institution</th>
<th>Time</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2000</td>
<td>National Outline of Ecological Environment Conservation (Guofa 2000 No. 38)</td>
</tr>
<tr>
<td></td>
<td>2005</td>
<td>Decision regarding Implementing a Scientific Outlook to Strengthen Environmental Protection (Guofa 2005 No. 39)</td>
</tr>
<tr>
<td></td>
<td>2007</td>
<td>National Environmental 11th Five-Year Plan (Guofa 2007 No. 37)</td>
</tr>
<tr>
<td></td>
<td>2010</td>
<td>National Main Function Zone Plan (Guofa 2010 No. 46)</td>
</tr>
<tr>
<td>Ministry of Environmental Protection (State Environmental Protection Administration)</td>
<td>1995</td>
<td>National Ecological Demonstration Area Construction Plan Outline (Huanran 1995 No. 444)</td>
</tr>
<tr>
<td></td>
<td>2002</td>
<td>National Environmental Protection Tenth Five-Year Plan (Huanfa 2002 No. 56)</td>
</tr>
<tr>
<td></td>
<td>2006</td>
<td>National Ecological Protection 11th Five-Year Plan (Huanfa 2006 No. 158)</td>
</tr>
<tr>
<td></td>
<td>2007</td>
<td>National Key Ecological Function Protection Zone Plan Outline (Huanfa 2007 No. 165)</td>
</tr>
<tr>
<td></td>
<td>2008</td>
<td>National Ecological Function Zoning (Huanfa 2008 No. 35)</td>
</tr>
<tr>
<td></td>
<td>2008</td>
<td>National Ecological Fragile Area Protection Plan Outline (Huanfa 2008 No. 92)</td>
</tr>
<tr>
<td></td>
<td>2009</td>
<td>National Key Ecological Function Zone Protection and Construction Plan Technical Guidelines (Huanban 2009 No. 89)</td>
</tr>
</tbody>
</table>

The plans attempted to provide a legal basis for ecosystem conservation and governance, and the plans also reflected the state’s evolutionary attempts to take a knowledge-based ecological path, from the general call for ecological construction, to building an Ecological Demonstration Area, and to the classification based management of ecologically fragile areas and ecosystem services zones. Meanwhile, the guiding role has gradually shifted to the Ministry of Environmental Protection.

Local levels of state do not provide any generic policy to guide the plans of ecological resettlement projects either. Instead, the rules are always specified in each project case. In organizing ecological resettlement in my case study, the Inner Mongolia government is responsible for carrying out strate-
gic planning, distributing tasks and allocating funding. The prefectural level of government is responsible for making more specific strategic plans and for proposing implementation plans to the provincial government for approval. The county level of government is responsible for detailed planning and implementation of specific projects.

Restructuring and conflicts of interest

The management of ecological resettlement is dependent on the cross-sector cooperation of the administrative units in charge of land, people and livestock (see Table 3). It meets constant challenges from the fragmented political structure. In this section, I focus on discussing the changes and challenges on managing grasslands.

The increase of the central state’s environmental interests has a significant implication for the redistribution of power and is likely to cause conflicts of interest between the administrative institutions within the political system. Due to the multi-faceted nature of grassland issues, several institutions get involved at the horizontal scale with overlapped jurisdiction and replicated roles. In the Chinese administrative structure, environmental problems related to rural land used to be managed only by the economic branches, and governmental departments responsible for grassland management including animal husbandry, forestry and hydrology. Their primary mandate was to enhance economic productivity because the natural environment was viewed first of all as an economic resource. The rising concern with the ecological function of grassland areas has tended to shift more power to the environment-related authorities but it is a challenging process. However, as I have shown previously, the Ministry of Environmental Protection has more to say about grasslands through giving strategic plans and guidelines, but this is still limited to the national level.81

At the regional and local levels, there is a significant overlap of jurisdiction between the bodies of the Ministry of Agriculture and the Ministry of Environmental Protection, and officials in Environment Protection Bureaus across the pastoral regions have indicated their desire to expand their authority over a much broader range of grassland issues (Brown et al. 2008). Despite that, the centrality of the Ministry of Agriculture in governing the grassland areas is entrenched. This is because the bureaucratic system of Animal Husbandry and the associated services has long been established, especially the ground level of the society, while the Environmental Protec-

81 The position and power of the Environmental Protection Agency was for long marginalized in the system. The national level of the institution, the State Environmental Protection Administration was not upgraded to the ministry level until 2008. The implication of the lower position is that, in the Tiao-Kuai system, its practice was subordinated to other institutions’ decisions and actions.
tion Administration is not present in terms of offices, staff and other resources at local levels. Therefore, the latter have to depend on the former to conduct activities such as grassland inspections. Moreover, the planning of the Ministry of Environmental Protection is also very dependent on the supply of monitoring information from the Grassland Monitoring Centre and the Grasslands Resource Inspection and Management Station, which are part of the Ministry of Agriculture.

Table 3. Ecological resettlement structured by the political system.

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Role</th>
<th>Institution (county level)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grassland</td>
<td>Grassland monitoring</td>
<td>• Grassland Division</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Grasslands Resource Inspection and Management Station</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Grasslands Monitoring and Supervision Centre</td>
</tr>
<tr>
<td>Grassland measurement</td>
<td></td>
<td>• Grasslands Resource Inspection and Management Station</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Grasslands Monitoring and Supervision Centre</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Academy of Agricultural Science (Provincial)</td>
</tr>
<tr>
<td>Grassland improvement and</td>
<td></td>
<td>• Grasslands Division in Animal Husbandry Bureau</td>
</tr>
<tr>
<td>construction</td>
<td></td>
<td>• Forestry Bureau</td>
</tr>
<tr>
<td>Livestock</td>
<td>Livestock policy</td>
<td>• Livestock Division in Animal Husbandry Bureau</td>
</tr>
<tr>
<td>People</td>
<td>Training and employment</td>
<td>• Labour and Social Security Bureau</td>
</tr>
<tr>
<td></td>
<td>Settlement and disaster relief</td>
<td>• Civil Affairs Bureau</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Ecological office</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Population Transfer Centre</td>
</tr>
</tbody>
</table>

The largest competing authority to the Ministry of Agriculture is the Forestry Administration, which is in charge of carrying out many large-scale environmental programmes because planting trees is the main approach to improving vegetation coverage. The Forestry Administration also has jurisdiction for monitoring and measuring the status of desertification and sandification in China, which in practice intersects with the monitoring and measuring of grasslands. However, due to the strength of the Animal Husbandry bureau at the local level, the Forestry administration actually has to work with the former at the local level to implement the projects. Nevertheless, the Forestry Administration sought to develop new institutions, such as the Office of Special Inspectors (Zhuanyuan Ban in Chinese) to directly inspect the
local areas running environmental programmes, and to connect more closely with the ground level.

Besides redistributing power between different sectors, the state has also sought to set up a more independent system for knowledge-based monitoring and supervision of grasslands. Administrative, service and academic units within the Ministry of Agriculture used to be involved in different ways in monitoring and measuring grasslands, creating overlapping and repetitive roles in monitoring and measuring grasslands.82 Through reform, at least three bodies under the Ministry of Agriculture still share the responsibility for grassland management: the Grassland Division as the administrative unit, the Grassland Resource Inspection and Management Station as the service unit under the Animal Husbandry Bureau, and the Grasslands Monitoring and Supervision Centre as an independent service unit working in parallel with the Animal Husbandry Bureau. The Grassland Monitoring and Supervision Centre was set up as a specific institutional response to be responsible for assessing and reporting the status of grasslands. Brown et al. see its establishment as a symbol of more independent management of grasslands from the production-oriented Animal Husbandry Bureau, and they argue that this could make the centre at the higher levels less influenced by local level interests and it could be seen as a move towards re-centralising grassland inspection (2008:69). Nevertheless, the activities of the Grassland Monitoring and Supervision Centre at the regional and local levels are in fact still very dependent on the older Grasslands Division and the Grasslands Resource Inspection and Management Station. This risks the former’s independence in practice.

New bodies have also been established for coordinating cross-sector cooperation which otherwise is hindered by the fragmented political structure. A leading team, the Weizhuan Office or Ecology Office, was set up by the Xilingol league government to coordinate ecological construction-related issues. The heads of the government are usually the heads of this team and through organizing joint meetings involving related functional units, the team assigns tasks to the different units and also decides the distributions of funding from the central state for ecological construction. The same system was replicated at the banner level.

Offering fiscal transfers

The previous sections have demonstrated that the current environmental management is basically top-down but the lower levels of the state also wel-

---

82 Due to the downsizing of the administrative bureaucracy, a large number of service units exist under the Ministry of Agriculture which are completely or partly funded from other sources other than administrative units. Their relations to the administrative units are “professional” rather than “leadership” (Brown et al. 2008:62)
come the policies. In this section, I intend to discuss how, in such a system, the central state ensures the enforcement of its will upon the ground level of society. What are the incentives for the local state to continuously adapt to, or even proactively adapt to the state’s changing will and approaches to managing the environment? In other words, why is the local state so active in adapting to the central state’s discourse on environment and development of the region? I argue that a key mechanism that enables the process is the offer of fiscal transfer. Figures of large financial budgets have always been cited in official reports to highlight the commitment of the state to taking actions, and they are further circulated through academic publications: Chu and Meng (2005) claim that ecological resettlement in Inner Mongolia involved a budget of more than 100 million yuan; Wang et al. (2010) state that, in the Three-River Headwater region, ecological resettlement projects were allocated 1,500 million yuan; in Ningxia, 2,842 million yuan were allocated to resettle rural dwellers in the central arid areas between 2007 and 2011 (Xinhua News Agency 2008).

In the broad context, fiscal transfer is a key mechanism by which the central state gives its support to the western region. Subsidies and compensation are allocated both in the forms of projects and as direct payments to rural households in the Western Development Strategy. It is estimated that the central state’s total fiscal transfers (tax return plus transfer payments) to the western region increased from 11.4 per cent in 1994 to 36.7 per cent in 2007 in the fiscal expenditures of local states; and the western region’s share of the national transfer payments increased from 69.6 per cent to 87 per cent (Li 2008). Transfer payments only constituted about 25 per cent in 1994 but in 2007 Special Transfer Payments as part of transfer payments which were intended to serve the specific policy objectives of the state including environmental ones took nearly 38 per cent of the total fiscal transfers (Li 2008). Although there are no specific statistics regarding the share of financial support to environmental programmes in the Special Transfer Payments, investments in specific programmes are reported in news and research articles. Yu (2009) listed the large amount of investment in the most important environmental programmes in Western China (see Table 4). According to him, the state invested at least 60 billion each year in the last decade for carrying out ecological construction activities in Western China, which accounts about 3.6 per cent of the regional GDP.

Grasslands and grassland areas in particular have been the focus of investment. While the central state only invested 20 million yuan between 1979 and 1994 (H. Zhou 2006), the investment in grasslands and grassland

83 Such as sand control, livestock shelter construction, house construction and digging wells.
84 Such as grain subsidies, low-income subsidies and seasoning grazing ban subsidies. Although some subsidies are directed at households, their allocations are decided by local government.
areas suddenly jumped to 3.8 billion yuan, accounting for one third of the state’s expenditures on agriculture in 1998 (Brown et al. 2008:108). Most of the investment was for supporting grassland improvement programmes. China’s Grassland Development Report 2013 claimed that the state had invested 35.19 billion yuan in grassland related ecological protection and construction between 2006 and 2011 (People’s Daily 2013). A new system called ‘Grassland Ecoligical Protection Subsidy and Award System’ (Caoyuan Shengtai Baohu Butie Jiangli Jizhi in Chinese) was established after 2011 to upgrade fiscal transfer payments to pastoral areas. This is a result of the extension of the economic rationale of ecosystem services, or ‘Ecological compensation mechanism’ (Shengtai Buchang Jizhi in Chinese) in China, from forestry and water conservation to grassland conservation (Du 2011).

Table 4. Large-scale environmental programmes in Western China.

<table>
<thead>
<tr>
<th>Name of Programme</th>
<th>Time</th>
<th>Total investment (billion yuan)</th>
<th>Institution in Charge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panda Protection Programme</td>
<td>1992-2000</td>
<td>0.3</td>
<td>Forestry</td>
</tr>
<tr>
<td>Three North Protection Forestry Programme</td>
<td>1978-2050</td>
<td>57.7</td>
<td>Forestry</td>
</tr>
<tr>
<td>Natural Forest Protection</td>
<td>2000-2010</td>
<td>96.8</td>
<td>Forestry</td>
</tr>
<tr>
<td>Turning Farming to Forestry Programme</td>
<td>2000-2010</td>
<td>300.0</td>
<td>Forestry</td>
</tr>
<tr>
<td>Beijing-Tianjin Sandstorm Source Control Programme</td>
<td>2001-2010</td>
<td>55.9</td>
<td>Forestry</td>
</tr>
<tr>
<td>Wildlife Protection and Natural Reserve Management and Construction Programme</td>
<td>2001-2010</td>
<td>75.3</td>
<td>Forestry</td>
</tr>
<tr>
<td>Returning Rangeland to Grassland Programme</td>
<td>2003-2007</td>
<td>14.3</td>
<td>Agriculture</td>
</tr>
</tbody>
</table>

Source: Data from Yu (2009).

Inner Mongolia received total investment of 37.1 billion yuan between 1998 and 2008 through nine environmental programmes from the central state, of which 6.9 billion yuan was used for four grassland-related ecological construction programmes (China Central TV 2009). Xilingol League

---

85 According to the report of the State of Environment in China (2011), the central government was going to allocate 13.6 billion yuan financial fund for the implementation of the incentive and subsidy policy, which is similar to the Ecosystem Services Payments, which also aimed to benefit more than 10 million pastoral households. The Ministry of Finance stated in 2013 that this system had been applied to all the pastoral and semi-pastoral counties or to 80 per cent of the total grassland area (China News Net 2013).

86 The four grassland-related ecological construction programmes are Natural Grassland Vegetation Recovery, Grassland Fencing, Beijing-Tianjin Sandstorm Source Control and, Returning Rangeland to Grassland.
received funding for ecological construction both from the central and the provincial levels of government. The Weifeng Zhuanyi Strategy initatively received finance amounting to 430 million yuan (People’s Daily 2002). Table 5 lists the investments to Xilingol League in the key environmental programmes between 2001 and 2006. Additionally, ecological resettlement projects have also been financed by other social programmes such as Anti-Poverty Resettlement (People’s Daily 2002).

The effectiveness of the fiscal transfer mechanism is closely related to the change of fiscal rights arrangements between the central and local state. While decentralised fiscal rights assigned to the local state stimulated rapid rural industrial growth in the 1980s (Oi 1992), the fiscal reform in 1994 re-centralised most of the fiscal rights to the central state. Therefore, the expenditure of local states has become dependent on transfer payments from the central state, especially in poor regions. Since the removal of all agricultural taxes and fees to reduce the burden on rural people in 2005, the operations of local states have become even more dependent on fiscal transfer payments from above. In practice, state funding for each level of government has to come via the level immediately above it within China’s fiscal hierarchy.

Table 5. Investments in the key environmental and social programmes in Xilingol League.

<table>
<thead>
<tr>
<th>Programme</th>
<th>2001-2006 (Million yuan)</th>
<th>Financing ecological resettlement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beijing-Tianjin Sandstorm Source Control</td>
<td>1,593</td>
<td>Yes</td>
</tr>
<tr>
<td>Pen-raising and Grazing Ban</td>
<td>666</td>
<td>Yes</td>
</tr>
<tr>
<td>Agricultural Comprehensive Development Grassland Construction</td>
<td>204</td>
<td>No</td>
</tr>
<tr>
<td>Anti-poverty Resettlement</td>
<td>110</td>
<td>Yes</td>
</tr>
<tr>
<td>Key Ecological County Comprehensive Treatment</td>
<td>12</td>
<td>No</td>
</tr>
<tr>
<td>Total</td>
<td>2,585</td>
<td></td>
</tr>
</tbody>
</table>


Zhou (2006) argues that the current fiscal structure enables the central state to enforce its will on local places, and the central state can also intervene to reduce gap of incomes between local governments. Brown et al. (2008) calls this structure the “carrot” approach, or incentive-based approach: the central state uses a range of carrot approaches to deliver public goods in the form of public investment and programmes with attached funding so as to change resource management practices at local level. Both Zhou and Brown et al. suggest that this ‘carrot’ approach is even more effective than the ‘stick’ approach, such as legal and institutional systems, because the
stick approach encounters great difficulties in enforcement due to weak institutional capacity and conflicts of interest. Receiving financial assistance is clearly addressed in the regional government’s documents both as a strong motivation for adapting to the central state’s environmental agenda and as a political achievement. For example, in the report called Inner Mongolia’s Progress in Implementing Western Development Strategy in 2001 and the Work Focus in 2002 (IMGO 2002), the regional government stated the focal points of work in terms of “study policy well and use policy well” and “actively apply for policy supports”. This emphasised that receiving the highest amount of payments for ecological construction nationally was a great achievement, and a top working strategy was stated as “focusing on ecology and infrastructure construction and playing the project cards well”.

However, a negative consequence of this hierarchical fiscal system is that each level of government and officials tends to be more accountable to the higher level of government and officials than to the local society. Zhou (2006) calls this phenomenon the ‘floating government’. Moreover, the fiscal relations are more complicated below the provincial level, which gives room for misuse of the finance rather than providing public goods. Competition between local governments for their areas to be chosen as sites of carrying out specific projects is fierce. Fiscal transfer payments not only increase budget sources but more importantly bring about opportunities for economic activities, for example through demand for fences, milk cows, construction houses and infrastructure. While economic activities should be the by-products of ecological construction projects, in practice they become the purpose of carrying out environmental protection activities (Yu 2009). Zheng (2011) uses the term ‘project economy’ to refer to this phenomenon, which he argues is a manifestation of the alienation of the state’s function while enforcing public policy. There are also a number of criticisms of the management and use of transfer payments, which include overlapping of subsidised programmes, lack of allocation rules and standards, lack of a supervision system, and corruption. An official of the State Auditing Administration comments that: “A regional government does not care if the project is finally completed. It only focuses on getting the money from the state but does not consider the local real conditions very much.” (Xinhua News Agency 2007).

Quantifying environmental governance

Numbers, or more broadly quantification and measures, are widely found across all governmental documents, especially in relation to addressing environmental issues. The means of statistics of numbers are associated with the state’s claim to take a ‘scientific outlook’ and to use scientific, knowledge-based management. In the above sections, I have shown that environmental
problems are first of all quantified with different measures to highlight the speed, severity and impact of environmental problems; numbers are used in setting up the threat scenarios of sandstorms and in addressing the pressure of population growth on grassland. The public are invited to calculate the speed that the desert is approaching the capital. All these numbers were used to stress the urgency of the issue and suggest the need for the state to act. The objectives and commitments of the actions are also numberised in terms of funding, number of people to move, and size of grassland to enclose. The achievements are also presented with numbers in terms of how many people have been resettled, how much grassland has been enclosed, how many fences have been built so as to demonstrate the progress of the work.

Numbers and quantifications are not neutral. Through the lens of governmentality, statistics are no longer taken merely as a means of benefiting the administrative functioning of the sovereign state. They are used as a basis for measuring and regulating population. I agree with Hoffman’s view that the use of statistics and comparisons make the environment knowable and actionable. In his words, “environment has been actualised as a target of governmental action - by global environmental discourse, academics, and Chinese governmental organisations and officials - through devices that quantify in order to show progress and rank places relative to others” (2009:114). Greenhalgh (2005) delivers a similar view based on his study of China’s population policy and he argues that numbers and quantification help to establish goals and targets that the state apparatuses mobilise to meet. Calculation and comparison create particular modes of thinking which invite the public to participate in calculating costs and benefits of environmental problems, thus gaining their support for governmental actions. From a broad perspective, Hoffman (2009) continues to argue that the wide acceptance of the logic of quantification is rooted in the taken-for-granted values established in China’s current pursuit of transiting to a market economy.

While the above debate on the discourses of numbers implicitly addresses the public as the audience, I think another important dimension of the discourses is related to the internal structure of the Chinese political system. I argue that numbers have also been instrumentalised within the state structure. In a decentralised system, the central government has limited means to ensure the enforcement of its will at the local level even though the institutional structure remains the fundamental means. The cadre performance evaluation and offer of fiscal transfers have provided the hard and soft means. The common characteristic of both is that they are expressed in quantified measures and numbers. The central state decides how well the local politicians are doing, based on evaluating the measures, and also decides how much more financial assistance to distribute to the locals. From a lower level of government’s perspective, to use numbers while reporting to the upper levels of government is a strategy to prove its good political performance as well as to argue for further input.
Conclusion

In this chapter, I have used ecological resettlement to analyse the environmentalisation of the Chinese state. I have sought to expose the governmental strategies by exploring how grassland degradation has been constructed as the very object of environmental government, how the rationalities have been operationalised, what knowledge has been deployed and how different forms of power work in varied ways to drive the environmentalisation of the Chinese state. Particular forms of truth have been employed by authorities to construct grasslands as a site in need of governing actions and interventions. The particular forms of truth are constructed in three groups of discourses: the threat/security scenario, degraded but restorable grassland, and ecological knowledge. First of all, official discourses facilitated by populist discourses state that severe climate events in the late 1990s were manifestations of an ecological crisis taking place in western China, and they claim the crisis presents a threat to the ecological security of the capital, the eastern region and even beyond the country. The discourses have subsequently driven reconfiguration of the relationship between western China and other areas, and reterritorialisation. Accordingly, the priority function of Inner Mongolia to the national interests has been redefined as ‘an ecological security shelter’. Moreover, while grassland degradation was for long perceived as a serious environmental problem, the concern was confined to the negative impact on local production and economy, but its link to sandstorms substantially redefines the issue as a national environmental one. This change matches Buttel’s (1992) definition of environmentalisation, a process in which a formerly non-environmental issue comes to be defined substantially as an environmental issue. Secondly, in addressing the cause of the perceived ecological threat, official discourses continue to resort to some grand perceptions and orthodox views concerning overpopulation, poverty and human misuse of natural resources. Moreover, in response to the perception of an exploited and destroyed environment, a construction approach is justified, with the aim of achieving restoration of the environment. Thirdly, the central state has become devoted to developing legal, institutional and technical frameworks for directing ecological-knowledge-based interventions since the 2000s. Nevertheless, its selective use of knowledge does not take into account the contested views on desertification and land degradation. Through developing monitoring systems to collect data, standardising the ways of perceiving the reality, and adopting statistical data to support statements, the state has made the problems more knowable and based on that it promotes the belief that these environmental problems are solvable, but only through its proposed technocratic interventions.
Miller and Rose (1990) think that technologies of government should not be seen as forming a unified matrix of governmental control. I analyse the technologies related to ecological resettlement as subordinated to two contexts, the Western Development Strategy and the new way of managing the national environmental territory. Therefore, the preferred technologies, modernisation, industrialisation and urbanisation in Western Development Strategy together support engineering population flows from rural to urban in ecological resettlement. Meanwhile, zoning has become a widely applied technology to operationalise ecological construction. In relation to the environment, zoning is deployed in different plans, programmes and strategies proposed at different levels to construct and manage the national territory according to a set of environmental values. Old technocratic fixes together with new ones are re-organised according to the new logic of zoning. The operations of zoning technologies demonstrate that zoning is a re-territorialisation technology. Nevertheless, through analysing the application of this technology across ecological function zoning, zoning in the Beijing-Tianjin Sandstorm Source Control Programme, and zoning in Xilingol League’s Weifeng Zhuanyi Strategy, I find that they do not really coordinate between each other and the overlap over territory raises a question about to what extent the new technology would be able to transform the divides of jurisdictional authorities between administrative units and the sector-based structure in natural resource management.

In the last section of this chapter, I have discussed how the environmentalisation of the Chinese state is enabled by the features and mechanisms of the political structure and how the environmentalisation of the state in turn has reconfigured political dynamics. I highlight four characteristics of the environmentalisation of the Chinese state. First of all, relating to the wider debate on the decline of the central state power through decentralisation (Benewick 1998, Brown et al. 2008), my findings can be argued to show that, in the field of the environment, the central state remains powerful and central but its role in putting forward the new ways of government is changing from being a detailed instructor to a distant supervisor. Secondly, the advance of the environmental agenda has caused a redistribution of power and resources, and conflicts of interests among authorities. The process is similar to Marsden’s (2004) view of environmentalisation, which emphasises ecological values, together with growing bureaucratisation and professionalisation. Thirdly, the offer of fiscal transfers works as a key mechanism to provide incentives for local levels of government to enforce the central state’s environmental will but it is associated with several negative effects such as the ‘project economy’ which may obstruct fulfilment of the environmental will. Last but not least, quantification makes the environment understandable and actable and it also provides an instrument for the central state to control the performance of local states’ decentralised actions.
Above all, I have sought to demonstrate that, in the last fifteen years, the state has been proactively shifting to a more rational and systematic approach to governing the environment which relies on expertise, professional knowledge and liberal calculations. However, the Chinese government of the environment remains highly dependent on, but also constrained by the top-down force within the state structure. The on-going environmentalisation is a multi-scalar and inter-scalar process. My analysis demonstrates that it is constituted of environmental initiatives from different scales which relationally articulate the rationalities of the state's environmental restructuring project. My analysis does not mean to generalise the unity of the technical apparatuses but it does suggest that flows from different levels of the Chinese state attempt to make the discourses appear uniform.
6. Constructing an ecological security shelter in Xilitu Sumu

This chapter shifts the focus to the local level, the case study area of Xilitu Sumu. It explores how the central state’s environmentalisation attempt was translated by local authorities into implementation, or more specifically how the idea of constructing an ecological security shelter was practiced by local authorities through implementing ecological resettlement projects. Local authorities are perceived as intermediaries between the central state and the local people, whose activities have their own purposes although they are also structured by upper levels of state. By reviewing the local implementation processes, I focus on discussing two questions: how local authorities mobilised pastoral households to participate in the projects; and to what extent the identified governmental strategies and rationalities, the embodied logic, ideas and knowledge, and the technologies and mechanisms in the previous chapter structured local practices. The chapter begins by introducing the materialisation of the two ecological resettlement projects. The presentation draws attention to how the approaches, ideas and knowledge from upper levels of the state are operationalised in the projects. It then discusses the strategies adopted by local authorities to mobilise pastoral households’ participation in the projects. Finally, I discuss the incentives for local authorities to support continued developmental attempts.

Materialising the construction of an ecological security shelter

Developing a modern dairy industry in Resettlement Village S

The first ecological resettlement project organised pastoral households to move to Resettlement Village S in 2001 just after many pastoral households had suffered a great loss of livestock after a series of natural disasters involving snow, drought and sandstorms. The project started as a small-scale experiment. According to interviewees in Village S, twenty houses were first built and the local state arranged for the first twenty households that moved in to try different intensive breeding ideas with animals such as rabbits,
Figure 13. The housing pattern in Resettlement Village S.

Figure 12. Milk collection station in Resettlement Village S. Resettled pastoralists came to the station to milk their cows two or three times a day.
sheep and beef cattle. The project also brought an additional inflow of population who came to build the houses, and open small restaurants and shops. This early experiment was not really successful. Several of the households soon dropped out of these businesses and moved by themselves to City Q. The reason was said to be the high costs and the low sale prices of the livestock they had bred. Instead of making a profit as they had thought before moving in, several households were already in debt to banks. However, the failure of the early experiment did not make the local state stop. Instead, the scale of the settlement was expanded to host 200 households and another model of intensive production by the Xilingol League government, milk cow raising, was introduced. Besides following the ‘five accesses’ (Wutong in Chinese) standard, the physical structure of the village was similar to the other resettlement villages in Xilingol League with strong characteristics of modernisation development. Its large scale and patterns were in great contrast to the surrounding pastoral landscape. The village was composed of nearly twenty rows of identical attached houses and sheds. Each house was a unit fenced by brick walls. It was composed of two rooms for living, sized around 30 m² in total, a similar sized warm shed behind the rooms, a small yard outside, with a silage cellar in it and a storage room at the front. In the middle of the village, there was a milk collection station. The newly moved-in households were expected to drive their milk cows two to three times a day to be milked at the station. Then the milk was collectively transported by a truck to a big processing factory five hours’ drive away. To the west of the settlement, there was a large area of land, nearly 20 times the size of the settlement, for cultivating fodder.

On the one hand, the local state sought to attract pastoral households to participate through offering a series of economic benefits: every participant household signed an agreement with the local state in which it accepted a five-year grazing ban on its contracted plot of rangeland and in return the household would receive compensation and assistance that helped it to get established in the business model of Village S (see Box 1). The household was the basic unit for joining the project and holding contracted rangeland was the pre-condition for a household to participate. Each participant household was allocated one house, a piece of land of 20 mu for cultivating silage, and was subsidised to purchase at least two milk cows. The households paid about 20 per cent of the costs for purchasing the cows and the rest was financed through low-interest loans. The local state also provided free forage and free technical training on raising milk cows in the first year. On the other hand, the local state selected ten participant households to fence their rangelands of their former homes. The local state claimed that rangelands would be restored upon the application of a grazing ban and would improve further with fencing. Although the local state did not claim it would forbid the return of pastoral households in five years, its vision for the future suggested that they were not expected to return and the rangelands were supposed to
continue serving an environmental protection function. The county-level development plan even envisioned that after the five-year resettlement contract expired, participant households could develop grassland seed production, plantation of cash trees and other types of ecological construction on their contracted rangelands.

Box 1. Compensation and assistance to participant households in the first ecological resettlement project.

- One-time resettlement compensation of 5,000 yuan;
- A 30 m² house with a two-roomed livestock shed attached;
- Subsidized loans to purchase milk cows;
- 20 mu land per household for cultivating silage;
- Free silage for the first year (Purchase at subsidized price after 2004);
- Technical training for raising milk cows in the first year.

Source: Xilitu Sumu government documents.

However, contrasting with the local state’s vision, the outcomes of the project were problematic. According to my interviews both with householders who stayed in the village and others who had returned to their pastoral homes, 80 per cent of the households did not earn enough from dairy farming and they dropped out of the business around 2003, soon after the termination of the local state’s support. Interviewees ascribed the lack of success to varied reasons, including the low quality of milk cows supplied by the local state, their lack of technical knowledge and skills in dairy farming, their lack of skills in silage cultivation, the high costs and poor quality of forage supplied by Han businessmen, the low price of milk, and the strict rules of the milk collection station that took their supply.

These complaints and reasoning actually suggested the weak and dependent position of pastoralists in the organisation of the business model. They were dependent on the local state for finance, to purchase cows, for subsidised forage, and for technical training; they struck poor deals with Han businessmen to purchase forage; and they were weak in negotiating the terms of supplying milk to the milk collection station. 87 Household vulnerability to the market became extremely apparent during 2008-2009 upon the national milk power scandal which drove the milk price and demand to extremely low levels and at the same time put the blame on dairy farmers (Oriental Outlook Weekly 2009). The attempt to transform pastoralists into dairy

87 Instead of getting cash immediately, they received monthly payments, usually one or two months afterwards. Their supply of milk was recorded in a small book, though it could be exchanged for forage at once.
farmers was not successful because the ‘company + peasant households’ model in practice put dairy farmers in a disadvantaged and dependent position in the supply chain. The financial arrangements made it harder for most dairy farmers to be profitable and capable of dealing with market risks. The extensive involvement of the local state in coordinating all the actors in the supply chain also made the business outcomes extremely dependent on the actions of the local state.

Transforming pastoralists into urban citizens in City Q

The unsuccessful outcomes in Resettlement Village S made the local state look for alternative approaches. In 2003, a small group of 15 households was subsidised by a small scheme “second and tertiary sector migrants” to move to City Q. These households, including a few from Resettlement Village S and others from the pastoral villages, were given a one-time compensation payment upon signing resettlement agreements for five years. This could be seen as the starting point of the local state’s shift of resettlement destination to cities. A much larger scale second ecological resettlement project started in 2006. It had two parts: the new part of moving pastoral households to City Q and the old part of extending resettlement agreements with households in Resettlement Village S. The shift to cities is reflected in the township government work report in relation to lessons from the first project, “ecological resettlement cannot just transfer a population from one type (of livelihood) to another within the first (agricultural) sector” but instead “a one-shot move is to move population to the city” (Xilitu Sumu Government 2007). This discourse was in line with the Xilingol League government’s further promotion of urbanisation in 2006 (XLPC 2006). Besides 54 old participant households which renewed their resettled agreements, 126 new households participated in the project. Their contracted rangelands, which in total accounted for nearly 50 per cent of Xilitu Sumu’s grasslands, were claimed to be enclosed for self-restoration.

Modern ideas became more apparent in the second project. The second project also offered a series of economic and social benefits to participant households in return for their agreement to accept a five-year grazing ban on their contracted rangelands. Like the first project, the household was the basic unit for joining the second project and its holding of contracted rangeland was the pre-condition. Economic and social benefits were focused on compensation, provision of housing property, assistance with livelihood development, and schooling of the participant households’ children (see Box 2). The assigned apartments in neighbourhood F provided modern living

88 Economic and social benefits to participant households from previous projects were low at the beginning but all gradually became equalized.
conditions including tap-water, electricity, a toilet, and central heating in the winter. By moving into the apartments, pastoralists were thought to have much better living standards compared to their housing in the pastoral villages. Moreover, to move the pastoralists from the rural to urban regions was assumed to be a quick way of enhancing pastoral household income. According to the City Q government assessment, the annual net income per capita of 3,000 yuan in Xilitu Sumu was only 25 per cent of an average urban resident’s annual dispensable income in 2006 (City Q Government 2007). The city was therefore perceived as where the future lay, with better living and development. Altogether these policies were expected to transform resettled pastoralists into new urban citizens, who would have better housing conditions, would work in industry and service sectors, and would live an urban lifestyle. However, unlike the first project, the second project did not attempt to organise a specific type of production. Instead, individuals were expected to find employment in existing businesses and sectors in the city.

Box 2. Economic and social benefits to participant households in the second ecological resettlement project.

<table>
<thead>
<tr>
<th>Economic benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Compensation between 0.8 to 1.2 yuan per mu per year;</td>
</tr>
<tr>
<td>• Ownership of an apartment (70 m²) in neighborhood F;</td>
</tr>
<tr>
<td>• Free job-seeking assistance and professional skills training from the county-level Labour and Social Security Bureau;</td>
</tr>
<tr>
<td>• Exemption from administrative fees for starting businesses;</td>
</tr>
<tr>
<td>• Subsidized loans to entrepreneurs for up to 20,000 yuan in three years;</td>
</tr>
<tr>
<td>• One administrative institution to support one family’s employment seeking.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Social benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Reimbursement of kindergarten fees;</td>
</tr>
<tr>
<td>• Exemption from children’s school fees in upper secondary school and provision of subsidies to students’ living expenses;</td>
</tr>
<tr>
<td>• Awards of 1,000 to 2,000 yuan to students enrolled in higher education;</td>
</tr>
<tr>
<td>• Exemption from school fees, book fees and accommodation fees up to upper secondary school;</td>
</tr>
<tr>
<td>• Rangeland certificate exchange for urban Hukou.</td>
</tr>
</tbody>
</table>

Source: City Q government documents.
Strategies of moving the pastoral households

This section looks further into how local authorities encouraged pastoral households to participate in the projects. In the second project, the City Q government stated that the working principles of ecological resettlement were “government guidance, pastoralist voluntariness and policy support”. The City Q government’s rules also stipulated the standard procedure for implementing ecological resettlement: officers of the Sumu government went to visit individual pastoral households and presented proposals to them; interested households would then fill in application forms and submit them to the Ecology Office; the Office would select candidates and make the results public if there were objections; then the Office would report on the final selection to the City Q government for approval. Finally, the selected households were offered resettlement agreements to sign. Interviews suggest that use of coercion was indeed rare during the process but local cadres deployed two types of soft strategy to influence pastoral households’ migration decisions: a carrot-and-stick strategy, and a strategy of transforming the subjectivities of the people.

The carrot-and-stick strategy relies both on incentives and threats. The carrot strategy is composed of the economic and social benefits that have been mentioned previously while the stick strategy is to threaten to adopt, or to actually adopt restrictive measures for using grasslands in the pastoral villages. Moreover, this strategy is entwined with a strategy of transforming the subjectivities of pastoralists. In the first project, local cadres tried to persuade people to move by describing their future as modern and prosperous farmers in Resettlement Village S. The living conditions with “five accesses” were said to be very modern, and the intensive agricultural production was said to be more advanced and associated with higher market value and a quicker profit. In contrast, pastoral life was condemned as backward, with no future, and reference was made to their losses during the many years of disasters.

In the second project, compensation was described as providing security of income. To quote the words of interviewee Chaolumen, a non-migrant young man in his 20s,

“When the local cadres came to us to introduce how good the project was, we were told that ‘once you join the project, you will be living like an urban dweller with a stable income. The compensation is like a salary paid into your bank account every month.’”

The modern way of living, with tap-water, a flush toilet and 24-hour electricity supply was also described by local cadres as being advanced. To quote the same interviewee above, “The officials told us that we were going to live a modern life in a high building in City Q, which was impossible in the pastoral countryside”. Another benefit, ownership of an apartment in the
neighbourhood F, was described as a permanent asset which would provide the resettled households with a possible source of rental income and also something to pass on to their children who were very likely to live in the city after finishing their education. In other words, local cadres were working on changing the perceptions of pastoralists to adopt the modern ideas of assets, inheritance and security, which were strange to those accustomed to pastoral life. Local policy-makers also used follow-up policies to strengthen such ideas, and in 2009 all pastoral households, including non-participant households, could be subsidised to purchase apartments as long as they purchased properties in City Q. This policy was also articulated in a government document designed to help pastoralists to diversify and increase their non-agricultural income. Other economic benefits intended to facilitate adoption of a new livelihood were associated with an attempt to transform pastoralists into skilled workers and small entrepreneurs. Local cadres claimed to use different administrative resources and mechanisms to provide jobs to resettled pastoralists. These efforts included organizing professional skills training, providing support for entrepreneurship, and also assigning specific administrative units to help members of individual households to find jobs. Nevertheless, interviewees of resettled households complained about the gap between the claims and actual implementation of the policies. While they complained that they were left to themselves to survive, they were more resentful of the fact that those families with strong social networks with local cadres monopolised the policy benefits.

Social benefits targeted families with students with exemptions from fees, and subsidies for schooling and higher education. In addition, resettled households were also given the possibility of changing their Hukou register from rural to urban areas under the condition of giving up their household rights to contracted rangeland. This was another approach to disassociating pastoralists from the rural areas and pastoralism. Although the lack of an urban Hukou for temporary migrant workers has been argued to lead to their position at the bottom of the occupation hierarchy and reinforces their marginal status as inferior outsiders in the cities (Chan and Buckingham 2008; Fan 2002), in this case the urban Hukou did not really become attractive to the pastoral households, due to the increasing values and benefits associated with land rights and rural areas, and the insignificance of an urban Hukou in a small city like City Q. The local state has always sought to enhance the attraction of staying in the city by changing policies and adding new policies. In the third round of ecological resettlement after 2011, the local state increased the level of compensation; it gave monetary rewards to resettled pastoralists who got long-term employment, and it also organised more professional training for jobless pastoralists.

89 The Hukou system is a household registration system in China. See note 27 for more explanation.
In general, the above practices of ecological resettlement have represented clear attempts by the local state to transform pastoralists into new urban citizens by fostering aspirations of living a modern life, having employment, owning property, and accepting modern education. They have the characteristics of regimes of government that “elicit, promote, facilitate, foster and attribute various capacities, qualities and statuses to particular agents” (Dean 2010:44), even though, from what the interviewees said, such forms have not successfully worked on everyone. I will further analyse this point in the next chapter. Moreover, unlike the main environmental challenges in the national-level discourses, local-level practices were more focused on addressing economic and social benefits and development of modernisation.

The local state’s motivations behind continued developmental attempts

Through discussing three aspects of incentives that structure the local state’s continued developmental attempts, this section reflects on to what extent governmental strategies and rationalities, the embodied logic, ideas and knowledge, and the technologies and mechanisms that are identified in the previous chapter structured local practices.

Accomplishing political tasks and demonstrating political achievements

To the local state, ecological resettlement is first of all a political assignment from the higher levels of government. It was clearly stated in city Q government’s document that the Inner Mongolia government assigned the task of resettling two hundred households to city Q in 2006. Policies from higher level also continued to indirectly order the resettlement of pastoralists: in 2007, the area was classified as an Agricultural and Pastoral Development Forbidden Area (Nongmuye Jinzhi Kaifa Qu in Chinese); and in 2008, the Inner Mongolia government made the area an experimental region for ‘rural-urban integration’ (Chengxiang Yitihua in Chinese); and in 2010, the Inner Mongolia government allocated a new task to City Q to apply a grazing ban on 800,000 mu of rangeland as a part of its new Periodical Grazing Ban (Jieduanxing Jinmu in Chinese) programme.

In the local state’s articulation of ecological resettlement, two numbers are frequently brought up, reflecting the main focus of concern: how many people have been resettled and how much rangeland has been enclosed. This is because these two numbers are the main indicators used by higher levels
of government to evaluate local politicians’ performance. Therefore, the major efforts of the local state have been directed towards including as many households as possible in the projects. Besides applying economic and social incentives to individual households, the local state also resorted to other strategies in village level politics in order to maximise the two numbers. The county-level government gave the numbers as a quota to the Xilitu Sumu government and the Xilitu Sumu government further allocated quotas to each village. The quotas were not distributed evenly among the villages. In the first project, Gachas A and B were decided to be the main villages for implementing the project and therefore they were assigned with bigger quotas. In the second project, Gachas C and D in turn became the focus. Village leaders were then ordered to go to persuade individual households to move. Nevertheless, the flows were not always top-down. At the beginning of the first project when pastoralists were competing for participation in the project, village leaders had to request an increased quota.

It should be noted that, participant households were not resettled at the same time. Instead, in the first project, it took nearly two years to recruit and move all the participant households to Resettlement Village S; and in the second project, it also took two years to recruit most of the participant households. To maximise the numbers, the local state also tried to persuade all the pastoral households which had moved away from the pastoral areas to join the second project. They were persuaded to sign an agreement on not using their rangelands which were anyway not used, and in return they could receive an additional income from the offered compensation payments. The local government also targeted specific groups to move. The Xilitu Sumu government also made a strategy to resettle more households, which was focused on “households with large rangelands, poor households with few livestock, households lacking labourers to manage their herds and the households with students” (Xilitu Sumu government 2007). One of the village leaders emphasised that targeting the poor was a clear strategy that the Xilitu Sumu government instructed him to follow in the second project. According to him, all of the eleven households living below the national poverty line in his village (26 per cent of all participant households from the village) were persuaded to participate in the project.

Given the top-down political structure, although village leaders’ opinions were sought during the planning process, they had very little impact on the final decisions. This meant that, even though village leaders had different opinions regarding ecological resettlement, they had to accept the political task of mobilizing pastoral households for participation. For example, according to one of the village leaders, he was consulted by policy-makers from the county level government regarding what type of neighbourhood would be best for the resettled pastoralists in the city. He proposed to build up the semi-business and semi-residential style of housing so that the pastoralists could either start their own business in their own premises or rent out
the business part to get some extra income. Nevertheless, such suggestions were not adopted. The current neighbourhood was criticised for being both economically and socially isolated. Migrant interviewees in neighbourhood F did not think living in the same neighbourhood helped them to start their urban life as policy makers assumed. The interviewees also said most of the migrant pastoralists were not really familiar with each other if they were not from the same pastoral village. However, construction of an independent neighbourhood, the visible material outcome of the project, was helpful for demonstrating the political achievements of the local government. The neighbourhood has from time to time received visits from officials from higher levels and it was also reported in the media as a model of ecological resettlement.

More broadly, materialisation of policy measures seems to be a preferred approach by the local state. Whether it is the resettlement neighbourhood F, or the Resettlement Village S, or the fences in the pastoral villages - all of them are believed to help to visualise and demonstrate the efficiency of policy implementation and therefore are likely to improve local politicians’ standing. Continued developmental attempts then constitute opportunities for achieving even better political performance. Given that problematic actions often take time to show effects, they could often be ascribed to the previous leadership due to the three-year rotation of local leadership; and the new leadership is always willing to take on new interventions in the name of correcting or improving the project in order to make new political performance records. In this light, efforts for achieving environmental objectives are reduced because they take a long time to show positive effects when the politicians are rotated or promoted to another administrative post, and thus do not take credit any more.

Receiving fiscal transfers

I have discussed in Chapter 5 that a key mechanism for the central state to enforce its environmental will is through offering fiscal transfer payments to the local state. This is an especially important incentive for the poor local states with few sources of revenues. In the case study area, the budget of the Xilitu Sumu government was in deficit for years. Therefore, the Sumu government was in great need of finance from higher levels of the state. Going through working reports of the local governments, especially of the sumu level government, environmental projects including ecological resettlement were suggested as important activities with the potential of bringing resources to the township and of relieving the fiscal constraints of improving local governance. The project in Resettlement Village S was estimated to need a starting investment of 6.6 million yuan and half of the amount was expected to be transferred from the central state; the second project received
four million yuan from both the regional and national governments; the Beijing-Tianjin Sandstorm Source Control Programme invested nearly 46 million yuan in the area (City Q government 2008); and the Inner Mongolia government allocated another special fund with seven million yuan in 2010 to Xilitu Sumu for subsidizing the housing and living of resettled pastoralists (City Q government 2011). It should be noted that, from the prefecture level of government and below, funding for social programmes was often combined with that for environmental programmes to finance ecological resettlement. The Xilingol League Weizhuan Office, responsible for distributing funding received from the above levels of government to county-level government, combined money from funds for Sand Control, ecological resettlement, Anti-poverty Resettlement, Agricultural Collective Development, Thousand Village Poverty Alleviation, and Livestock-Human-Drinking-Water to finance ecological resettlement. The county-level government also mixed money from the funds received from the prefecture level with other funds coming directly from the provincial and central levels of government.

According to Xilitu Sumu government’s statistics, the higher levels of state had spent an average of 180,000 yuan on each household by 2008, which was nine times the state’s first investment at the beginning of 2001 (Xilitu Sumu government 2008a). To receive continued finance from the higher levels of government, the township and county-level government always reported that pastoralists welcomed the projects but more finance was needed. By proposing continued actions, the local state also expected to receive further funding. As I have discussed in Chapter 5, the introduction of the Grassland Ecosystem Protection Subsidy and Award System after 2011 actually strengthened this approach. In Xilitu Sumu, this new system raised the compensation payments to pastoral households to a much higher level but at the same time restrictions of grassland use became more justified, following the logic that the ‘ecosystem services providers’ (pastoralists) have been fairly paid.

Nevertheless, it should be noted that ecological resettlement is not entirely financed by the central and regional governments. Local state and participant households are also required to meet some of the costs. The model is summarised by the local state as “state based, local matching and people’s self-finance”. Participating households were estimated to take responsibility for more than 60 per cent of the total costs in addition to the state’s investment in the first project. This is to say that, on average, each participant household was supposed to bear 31,000 yuan of the resettlement costs, which still excluded loan interest. In light of this financial plan, it was natu-

---

90 The money was spent not only on ecological resettlement but also on measures such as afforestation, construction of warm sheds, irrigation works and waste water treatment.

91 In City Q, other funding programmes include Thousand Village Poverty Alleviation (Qiancun Fupin), Poverty Alleviation of the Border Area (Xingbian Fumin in Chinese) and, Grazing Ban and Pen-Raising (Jinmu Shesi in Chinese).
ral that economically better-off families were selected to participate. The local government justified the requirement for the participant households’ financial input by positioning them as the ‘partners’ and ‘beneficiaries’ of the project.

Promoting business interests

In presenting the materialisation of the projects, I have suggested that the role of the local state was not only a planner and governor, but also a ‘coordinator’ and ‘organiser’ that worked to coordinate participant households and other actors in relevant business initiatives. In the first project, the local state played a significant role in coordinating all the actors in the supply chain of the dairy business in order to set up the ‘entrepreneur + peasant households’ model. It negotiated with the dairy company to purchase milk from Resettlement Village S; it coordinated with banks to offer low-interest loans to participant households; it arranged the ordering of milk cows from other places and even from abroad for the local market; it decided which contractor could operate the milk collection station; it chose the contractor who could rent the arable land; and it organised technical training for the dairy farmers. In Xun and Bao’s (2008) words, the local state actually played the role of an entrepreneur.

The reason the local state was so active in these coordination activities was associated with the benefits for local business interests. For example, the contractor of the milk collection station could earn a profit from the business; the contractor of the farming land in Resettlement Village S could earn from extra plantation on top of supplying silage to dairy farmers; the construction of neighbourhood F in City Q provided a lot of work to local construction companies. As Yu (2009) has argued, in the case study area construction activities for implementing ecological resettlement have transformed the projects into businesses benefiting stakeholders other than pastoralists. The means of ecological resettlement projects unfortunately replaced the real objectives to become the focus of the local state in the model of ‘project economy’ (Zheng 2011).

Although the local state acknowledged in its working report that the milk cow model was a failure (Xilitu Sumu government 2008a), it continued bailout activities to sustain business in Resettlement Village S as part of the second project. It sought to improve the infrastructure of the milk collection station, set up a collective association of the dairy farmers, coordinated the price of forage supplies, and invited skilled Han milk cow farmers to move in to increase the business scale. While the local government continued its bailout activities, that could have been a response to the remaining pastoral-

---

92 The local state did not do so much for the village between 2003 and 2005.
ists’ request since they claimed that they could not be left without care given that they had moved in response to the government’s call in the first place. These activities also brought new flows of funding to the area. Several of these actions were also adapted to new policies at upper levels and the local actions accordingly received new funding. Moreover, sitting in a dominant position in determining which businesses would be included and would share the benefits of the funding, the powerful local state had a high risk of engaging in rent seeking, and even corruption. Interviewees complained about corruption based on the poor quality of milk cows, bad construction quality of apartments in neighbourhood F, and the contracting of milk stations and arable fields to local politicians’ relatives.

Conclusion

The chapter has studied how the idea of constructing an ecological security shelter was practised through local implementation of ecological resettlement projects. The materialisation approach was preferred by local politicians in implementing the projects so as to demonstrate the efficiency of policy implementation and to improve the rating of their political performance. The investments of both resettlement projects were visually impressive. The empirical projects have shown that the local state has great power in determining the specific ways of carrying out ecological resettlement. This is a consequence of decentralised governance, which leaves room for the local state to interpret, plan and manipulate. From the first project’s aim of developing a modern dairy industry in Resettlement Village S to the second project’s objective of transforming pastoralists to urban citizens, the local projects have followed the central state’s directives towards western China by promoting modernisation, industrialisation and urbanisation.

I argue that the local state used two types of strategies to move the pastoral households: a carrot-and-stick strategy and a strategy of transforming the subjects. The carrot strategy has focused on creating economic and social incentives to ‘pull’ people to the new destinations. Meanwhile the stick strategy has been to threaten to adopt restrictive measures for pastoral production in the pastoral villages. The other strategy of transforming the subjects has intended to intervene the subjectivities of pastoralists, transforming them either into modern farmers or modern urban citizens. I further argue that three constitutive types of mechanisms determine the above actions and strategies embodied in the developmental attempts. First of all, ecological resettlement is a political project through which the local state has to accomplish tasks and to demonstrate achievements. The local state is thus most concerned with two numbers - the number of resettled households and the size of enclosed rangelands, which are the main indicators used for evaluating its political performance. It has also deployed strategies to maximise
these numbers. Secondly, the generic incentive of receiving funding applies to the experiences of this study area. This incentive drives the local state to compete for being chosen as the place for implementing environmental projects including ecological resettlement. Thirdly, due to its dominant position and multiple roles, other than just a governor, in mediating the relationship between pastoral households, business actors and the market in the developmental activities of making ecological resettlement, the local state has been able to promote business interests that share the benefits of conducting such projects. Nevertheless, the risks are that the local state may engage in rent seeking behaviour and the objectives of the projects, especially the environmental ones, may become marginalised. Above all, the interests and incentives of the local state, which are intrinsically defined by the political structure, tend to favour short-term-effective solutions rather than sustainable practices.
In the previous chapter, I examined the dynamics of power in the local processes of environmentalisation by exploring how the idea of constructing an ecological security shelter was practiced by local authorities through implementing ecological resettlement projects. My analysis has identified two types of soft strategies that local cadres deployed to shape pastoral households’ migration decisions: a carrot-and-stick strategy and a strategy of transforming subjectivities of the pastoralists. In this chapter, I shift the analytical focus to the pastoral households and their strategies. My aim is to examine how environmentalisation worked through households’ migration decision-making. I am interested in understanding why some households stayed while others left, and in finding out which factors affected households’ decision-making on migration.

This chapter begins by examining households’ migration decision-making in the first project. The analysis is based on interviews with 70 households including both participant and non-participant households. I then use the narratives of the same group of interviewed households to investigate individual households’ motivations for joining or leaving the second project. While explaining migration strategies, the interviewed households suggest the relevance of a group of household-level factors for the participation decisions in the second project. Therefore, next I use both data from the interviews and from the official register to test the effects of the factors on participation decisions. Based on my findings, I go on to propose a model to conceptualise and map household migration decision-making in ecological resettlement. Given that grassland degradation is discoursed as the driver for the state to launch ecological resettlement, in the last section I examine the role of grassland degradation in household migration decision-making.

---

93 Part of the empirical materials in the first section and second section of this chapter has been used in the peer-reviewed article Zhang (2012). Part of the empirical materials in the fifth section has been used in the relevant publications of the EU project EACH-FOR (2007-2009) including Zhang (2009), Zhang (2010a) and Zhang (2010b). However, the conceptual approaches and depth of analysis in this chapter are quite different from previous studies.
The first project: “We were promised we would get rich”

Among the 70 households, 22 participated in the first project and 48 did not. As I have mentioned in the previous chapter, 80 per cent of households dropped out of the dairy business in Resettlement Village S and moved back to the pastoral villages after 2003. When I met my interviewed households for the first time, only five of the participant households still lived in Resettlement Village S, 15 returned to live in the pastoral villages and two moved to City Q. Their answers to the question of why they had or had not participated in the first project revealed a few reasons, as summarised in Table 6. The majority of the participant households, 17 of the 22, had the same motivation to move to Village S - to get rich. This was a response to the projection of a wealth dream at the core of the local cadres’ mobilisation strategies. Moreover, the confidence of the later participant households was also built on seeing the quick set-up of infrastructure and business in Resettlement Village S. Nevertheless, there were also two returning participant families that claimed that their movements were political assignments. This was because their family heads were village leaders who were asked to be good role models, being supportive of the state’s development plan. Another three interviewed participant households, two remaining in Resettlement Village S and one returning to the pastoral village, claimed that, as households living under the national poverty line, they were provided with a house in Resettlement Village S but were not included in the milk-cow raising business.

Table 6. Main reasons for (not) participating in the first resettlement project.

<table>
<thead>
<tr>
<th>Reasons among participant households</th>
<th>Number of households</th>
<th>Reasons among non-participant households</th>
<th>Number of households</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earning more money</td>
<td>17</td>
<td>Did not apply</td>
<td>36</td>
</tr>
<tr>
<td>Poverty alleviation</td>
<td>3</td>
<td>Going Otor&lt;sup&gt;95&lt;/sup&gt;</td>
<td>8</td>
</tr>
<tr>
<td>Political assignment</td>
<td>2</td>
<td>Application rejected</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>Total</td>
<td>48</td>
</tr>
</tbody>
</table>

After the main motivation of earning more money, two other considerations also seem to have impacted on their participation decisions. The continued years of disasters not only caused massive loss of livestock among the pastoralists but also decreased the quality of grassland. The latter factor especially increased the pessimistic perceptions regarding the climate and the national poverty line was set at 865 yuan per year in 2000.

<sup>95</sup> Going Otor is a traditional mobility strategy developed by Mongolian herders to cope with a variable and uncertain environment. Here this term is used by interviewees to suggest the practice of migrating with herds to a rented pasture out of the disaster area. I will further examine it in Chapter 8.

<sup>94</sup> The national poverty line was set at 865 yuan per year in 2000.
positive future of herding livelihood, and therefore the interviewees considered using the resettlement opportunity to diversify their livelihood. In this sense, one could say that rangeland degradation contributed to their participation decisions. However, from a livelihood diversification perspective, movement to Resettlement Village S was not meant to be permanent nor to be a permanent shift of livelihood for the pastoralists. This temporary idea was in contradiction to policy-makers’ hope of permanently resettling the people. The other consideration was associated with the uncertainty of the future pastoral policy. Some interviewees said that they were frequently warned by local cadres that very soon herding was going to be totally forbidden in the area, suggesting that it would be wise to give it up early and take on a new livelihood with a good future in Resettlement Village S as soon as possible. Related to the discussion on the stick strategy adopted by the local state in mobilizing pastoral households, the words of the interviewees seem to confirm the effectiveness of the strategy.

Interviews with 48 households that did not participate in the first project revealed three kinds of reasons for non-participation: first of all, four of the households’ applications were rejected. This clashes with outsiders’ frequent assumption of resistance to resettlement. According to interviewee Gaowa, many families actually competed to go to Village S but only some of them succeeded. Her family failed because their economic situation was just a bit better than the poor families. Based on the model ‘state based, local matching and people’s self-finance’, the first project tended to select families which could afford part of the costs themselves. Interviewee Temuer, an old man in his 60s living in City Q, was another failed example. Due to the loss of two thirds of his livestock during the disasters, his family applied for participation. However, his application was rejected because the government did not think his family had the ability to pay back the loans for purchasing the milk cows. Eight of the 49 non-participant households were not asked to participate because their entire families migrated with herds (or going Otor) to other counties. However, this does not mean that all the families going Otor did not join the project. Six of the interviewed participant households still joined the project even though some of their family members followed the livestock to go Otor.

The majority (36) of the interviewed participant households stated that they did not apply to join the project because they were not interested in it. Nevertheless, it is interesting that 13 of them joined the second project. Some of the households suggested that they did not lose too much livestock

---

96 This does not apply to the poor households living under the national poverty line. There was a separate quota for resettling poor households but they were not included in the production business in Resettlement Village S.

97 They had 600 animals before the disasters but only 200 afterwards. At that time, it was common for a household to have between 600 to 1000 animals.
during the disaster years because they had stored enough forage in advance.98 Some of the households claimed that they did not believe in the project’s propaganda to bring them wealth. Some of the more conservative households were not interested at all in any livelihood other than pastoralism. It should be noted that migration to cities was not really one of the livelihood strategies for most the households in the area before the 2000s. This might also have to do with the fact that the biggest nearby city, City Q, mainly started its rapid development after the 2000s.

I also asked the non-participant households about their views on the reasons for the participant households joining the first project. Most of them suggested that getting wealthy, as the propaganda stated, was the main motivation. Interviewee Taogesi, a 25-year-old young man whose family did not join either of the projects, commented that although participant households complained about the first project now, they actually competed hard to join it. The project was actually very selective and not every household’s application was accepted. The selection was based on, first of all, the family’s wealth level, and secondly the family’s relation to the local leaders. The complaints and critiques of participant households did not mean that they had been forced to move at that time; they happened because the wealth dream was not realised.

The above findings suggest that no matter how engaged the households were in participating in the project, they had the same fundamental concern with how to “maintain, secure, and improve their livelihoods” (De Haas 2010:244) through making the choice to participate or not, and “this particular choice is based on (selective) access to assets, perceptions of opportunities, as well as aspirations of actors” (ibid.). However, it is also evident that quite a number of pastoral households were active in joining the project, with the aim of getting wealthy. This can be interpreted to mean that the local state was to some extent successful in gaining consent of the governed. The local state conditioned the people’s aspirations and desires to be in line with the local state’s will to embrace the modernisation approach of development. Quite a number of households were greatly motivated by the state’s project ideas and they were supportive of them through taking part in the practices. Interestingly, although nearly all returning households were resentful, claiming that “we were promised we would get rich but obviously we were cheated”, their complaints were focused on the local politicians’ withdrawal of support rather than on the ideas of the modern project itself. However, there were more households that were resistant to the ideas and

98 The stresses of practising pastoralism during the disaster years resulted on the one hand from the high costs of purchasing forage and on the other from the extremely low price of produce. Therefore, households which were able to manage well were those with a low need to sell weak livestock and that had stored forage purchased earlier at low prices.
even the most conservative households totally rejected the state’s modifying attempt and stuck to the prior way of living.

The second project: household (non)migration strategies

Using the findings from the interviews with the 70 households, I move on to analyse why they did or did not participate in the second project. Among the 70 households, 22 participated in the second project and 48 did not. Seven of the participant households also participated in the first project and four in the ‘second and tertiary sector migrants’ scheme; and 33 households did not participate in either of the projects. In contrast to the selectiveness of first project which was based on household wealth level and political power, the second project was open to any kind of household as long as it held rangelands. Unlike in the first project when several families had their applications for participation rejected, no interviewed non-participating family gave application rejection as the reason for their non-participation. Notably, there were more poor households in the second project, as local politicians aimed for. Moreover, a distinction should be made between the status of participation and whether a household migrated. Unlike the first project, in which all the participant households moved to live in Resettlement Village S, in the second project some households participated but did not move to City Q as the project had planned. They continued living in the pastoral villages on a non-participant household’s rangeland or even on their home pastures. I use ‘participant household’ and ‘non-participant household’ to refer to whether a household participated; and I use ‘migrant household’ and ‘non-migrant household’ to refer to whether a household migrated to an urban area.

While resistance is the most discussed type of response to resettlement in political ecology and resettlement studies, I have identified more complex patterns of responses among the interviewed households based on different rationales, motivations and strategies. The interviewees were given room to narrate their stories which helped to contextualise the conditions of their decision-making. It is noted that their narratives are not always consistent and sometimes mixed with paradoxes and even in contradiction to their ac-

---

99 Two households participated in the first project and then the ‘second and tertiary sector migrants’ scheme and also the second project.
100 A most apparent form of resistance could be the rejection of moving to the destination of resettlement. In another ecological resettlement village in the middle of Xilingol League which I visited in 2005 (Zhang 2006), half of the pastoral households who were supposed to be resettled were reluctant to move to the houses in the new settlement and so the houses had been empty for nearly half a year. Resistance could also be expressed by a collective visit. The men of the resettled households in the same settlement were led by the village leader to go to talk with the officials of the county government when the dairy business was staggering and they did not receive the agreed amount of compensation or subsidies for more than half a year.
tions. My purpose is not to identify what part of the narratives is true or not but rather to reflect on how and why they narrated their decisions in the particular ways. I synthesise four types of strategies from their narratives, namely resistance, accommodation, negotiation and manipulation. Each type further consists of several motivations.

Rejection

I start with the classical type of response, rejection. Four kinds of reasons are identified behind the rejection responses: distrust of the local state, perception of difficult urban life, resistance to identity change and resistance to dependence.

Distrust upon the perceived failure of the first project

All the non-participant households suggested that the outcomes of the first project played a central role in their decision to resist the second project. This included both the negative experiences of the participant households in the first project and also the negative perceptions of the non-participant households. Such a resistant attitude was especially strong among the returning households from Resettlement Village S. This explains why only six out of the 22 participant households of the first project also participated in the second project, with three continuing to stay in Resettlement Village S, two returning to pastoral villages and only one moving to City Q. “We will not be cheated again!” Lianhua, a middle-aged woman from a returning household told me loudly and angrily when I questioned why her family did not participate in the second project. The feeling of being cheated was dominant among the returning households. The interviewees reported all the problems they had experienced, which were contrary to the optimistic visions that the local politicians had presented in the mobilisation propaganda, and they suggested these problems were evidence of being cheated. These accounts were very detailed about the daily problems of raising milk cows. For example, the project claimed that, each milk cow could produce 30 to 40 kilos milk per day, which meant about 80 yuan income per day for the family but the reality was that the productivity was only about half of that. The calves were also claimed to provide a good income but the prices were only one quarter of what had been claimed due to oversupply. Because of the negative experiences, the trust in the accountability of the local politicians was fundamentally undermined. Distrust was also prevalent among the non-participant households whose perceptions were fed by what they saw and what they were told by the participants in their social networks. Examples of middle-income families who became poor after joining the first project were often cited to prove that their worries were well founded. A particular concern the
pastoral households had regarding the second project was that they would lose the rights to their rangelands in the long run if they moved to the city even though the resettlement policy stated that they would always keep their user rights.

However, as I have stated in the previous section, although the participant households complained about the projects, the focus was on the operations and the local politicians’ withdrawal of support rather than the approach of the project. While the local state’s extensive involvement in organizing the project became the basis for the affected households complaints, their resistance was not really against the modernisation approach of development. They were just sceptical about how much the government would be devoted to helping them to fulfil the visions of modernisation development.

**Economic comparison: Life is harder in the city**

Many non-participant households also cited an economic comparison between livelihoods in the pastoral villages and in the city as a major reason to refuse participation. Urban living was described as expensive, with low income while pastoral life was considered inexpensive with high income. High expenses in the city were associated with modern means of living, including paying for water, electricity, rent and subsistence shopping on a daily basis, while daily expenses in the pastoral area were very low. Most pastoralists thought they would only get temporary odd jobs in the city due to their low educational level, lack of professional skills, the age disadvantage for some, and being less competitive compared to hard-working Han migrant workers. This perception was based on either individual prior experiences or reflections upon experiences of other pastoralists. Additionally, they thought that pastoral life was associated with freedom in terms of the rights to decide and organise their daily work but in the city they would have to follow the disciplines of employers.

The words of interviewee Gaowa are rather representative of the interviewees with a great economic concern. Her family did not participate in the project but her daughter’s family lived in City Q and had a tailor’s shop. Gaowa commented:

“It was not easy for them. They worked hard throughout the year but could only save 10,000 yuan. It is very easy for us to earn 40,000 to 50,000 yuan by herding in a normal year”. She further commented, “Urban life is not suitable for old people. My uncle joined the resettlement project and moved to the city. They rented a small and cheap flat to live in, so they could keep the rent from the allocated flat in neighbourhood F. But with the low earnings from temporary jobs they could hardly sustain their lives in the city. Pastoralists can only herd animals. We cannot do anything else. Without herding, how can we survive?”
Interestingly though, her settlement was only ten minutes’ driving distance from the city. A rough estimate in 2008 was that a family with two labourers could easily achieve a net earning of about 50,000 yuan a year by doing herding for themselves; whereas they would have to have stable employment for the whole year and high wages of 2,000 yuan per month in the city to earn the same amount\footnote{The average payment for a stable employment, for example a translator, was around 1500 yuan per month.}. Moreover, the prices of produce were increasing all the time, which led to the stronger preference of pastoral families to stay in pastoral areas.

**Identity challenge: We are herders, not workers!**

While an image of post resettlement life mobilised by the local state is a decent urban life with a stable job and income, this sounded ridiculous to some herders. Alateng, a non-migrant man in his 50s argued: “Herders are herders. They cannot leave their livestock. Without livestock (in the city), they are nothing…Being a worker is a profession in the city. being a pastoralist is also a profession. It is a profession of herding livestock”. I interpret this view to mean the second project was seen as a challenge to the identity of being a pastoralist. Therefore, rejecting the project was a way of protecting the identity. This argument was mostly deployed among the households which did not participate in either of the projects. At the same time, these households were usually headed by middle-aged couples, 40 to 50 years old, without the burden of children. Interestingly, using the modern vocabulary of occupation classification, the above interviewee took ‘pastoralist’ to mean a type of occupation parallel to a worker; and he suggested that occupation is space-bound: a pastoralist is only associated with a rural space while a worker is only connected to an urban space.

The pastoralist identity distinguished the people more than their Mongolian ethnicity in cities, and this identity caused them to have experiences of discrimination in the cities. As I have mentioned, the ethnic Mongolian identity is very diverse, especially in City Q. There are local urban Mongolians, local pastoral Mongolians, migrant urban Mongolians, migrant farming Mongolians, migrant pastoral Mongolians and Mongolian foreigners. Similarly, there are also a diverse group of Han, local urban Han, migrant farming Han and migrant urban Han. The rural/urban axis is conspicuous among the other axes in differentiating people in this urban space. In particular, the social behaviours of the local pastoral Mongolians are perceived to be vulgar and in contradiction with the disciplined urban system. Citing the experiences of being discriminated against and despised by urban citizens in City Q, the interviewees suggested that their pastoralist identity discouraged them from living in the city.
Independence: We do not need to beg from others

Another reason for resisting the second project is associated with the need for maintaining independence. Interviewed families of this type were also mostly non-participants in either of the projects. They were very afraid of the scenario of becoming dependent upon joining the project. This dependence was first of all economic, which is related to the loss of the main source of income from the familiar type of livelihood, the high costs of living in the city, the limited amount of compensation and the uncertainty of finding new livelihoods in the city; and the dependence was also social, which means that interviewees thought that support through social ties was crucial for starting a new life in the city but on the other hand, they were reluctant to be dependent only on such social capital. The words of Wuliji, a male non-migrant interviewee in his 30s, well illustrate this view:

“Living with the herds in the pastoral areas, we do not need to beg others; but living in the city is the opposite. One has to beg from others for help every day. Urban life involves big expenses. Basic things like electricity and water make even a stay at home costly in the city. There is no job to do, but once one goes out, the only thing to do is to spend money.”

Accommodation

The second type of strategy concerns accommodation. The term ‘accommodation’ here means that the households were not resistant to the project but they were not active either. They were quite aware of the uncertainty about the future of the project and chose to participate as a temporary strategy to improve their households’ social and economic conditions; or they had no other option than to participate. Three types of situation were identified among the participant households to accommodate the project: new participant families whose participation was driven by economic and social benefits, displaced families that had no option, and migrant families from previous schemes that were attempting to make a living in the urban destinations.

Getting economic and social benefits

The state’s carrot strategy seemed to be successful to a large extent given that nearly all the participant households agreed that getting compensation was the strongest incentive to participate in the project. While compensation was a better source of income compared to herding for some families, others were in need of the money to relieve contingent social and economic difficulties, for example, paying medical care fees for an injured family member
and paying higher education costs for children. The possibility of getting an entire year’s compensation paid in advance upon negotiation with local politicians made the project a lifeline for several households. However, without the real intention of moving to the city, such participant households emphasised that they had planned their participation to be temporary for five years. Some were very sure that they would move back to their home pastures after the agreement expired, while others said they would decide based on the policies in five years. The strategic nature of many households’ participation was also reflected in the fact that they kept livestock, either by renting a small part of a non-participant’s land to herd their livestock themselves or by hiring a shepherd, or by contracting livestock to a non-participant household. This practice has significant implications for rangeland use after ecological resettlement, which will be analysed in chapter 8.

**Displaced but staying in the pastoral villages**

The local land use plan required that all pastures near the main traffic roads should be enclosed and as a consequence all affected households were incorporated into the second project for resettlement. Interviewee Sarina was in her 50s, and her family was one of ten households subjected to this mandate. Although Sarina’s family was not happy about the political decision, they did not see any other option than accepting it. One could say that a higher level of involuntariness was involved in this case. Nevertheless, what I think is more worthy of attention is that when she was reasoning about her family’s participation, the focus of her complaint was actually on the underpaid compensation for their rangeland that has been taken for road construction rather than the forced nature of the policy. An important transformation of the pastoralists’ sense of land rights seemed to have taken place in which their claim of rights became strongly linked to private ownership and the commercial value of the lands, such as what level of compensation the lands would attract rather than the old concern of accessing the land. However, Sarina’s family never moved to City Q. Thinking that both she and her husband had no other skills than herding livestock, they worked as shepherds for non-participant households on the condition that they could also herd their own livestock on the employer’s rangeland.

**Following policies to sustain lives**

As I have mentioned, though most participant households in the first project refused to join the second project, still seven households did, and four households participated in the ‘second and tertiary sector migrants’ scheme joined the second project. These families were often below the average wealth level and needed the compensation money to keep living at subsist-
ence level. In Resettlement Village S, they were those without or with only a few milk cows; and in City Q they were living in cheap rented houses. Most of these families had no plan of returning to live in the pastoral areas due to the lack of labourers for herding. My observation of such families is that they were only composed of young or old persons. For young people, it was not difficult to find a temporary job from time to time in the city; meanwhile compensation from the project provided a basic source of income. For example, consider Chaoketu, an 18-year-old young man. Due to his father’s death and the illness of his brother and mother, the family was short of a labourer to manage their herd. An incident in which a wolf killed most of their livestock totally disabled their subsistence ability at home. Being classified as poor by the local state, the family took the offered chance to move to City Q through the “second and tertiary sector migrants” scheme. Without a change of the family situation, they continued to join the second project and stayed in City Q.

Negotiation

The implementation of the second project was also a process involved bargaining between the local state and pastoral households. Several forms of negotiation identified in the interviews suggest that interactive strategies and flexibilities were involved. By using the notion of negotiation, I mean this type of household was willing to participate in the project only if they succeeded in receiving the terms that they wanted. In order to reach the numerical goals of resettling people and enclosing land, the local state was ready to negotiate and compromise on some terms but not any terms, and with some households but not all. Some households were also active in negotiating the benefits that they wanted based on various family considerations. Individual families’ negotiation capacity was also conditioned by local social and political relationships. In general, the pastoral households were in a stronger negotiation position when the project had just started and the local government was in a great need of reaching its resettlement quota. There were both successful and unsuccessful stories among the interviewed households. It was found that the terms the households wanted to negotiate not only included their social and economic benefits but also concerned whether they needed to move. Some successful households participated in the project but still stayed on their pastures. In the next part of the section, I use both successful and unsuccessful stories to illustrate what types of pastoral households in what conditions negotiated what types of participation.

Non-participation due to failed negotiation
As I have discussed, many households refused to participate because they did not think the economic benefits were enough. However, they were willing to participate if they were offered more economic benefits. Some households were active in negotiation. For example, to Gaowa, resettlement was a negotiable deal. Her family tried to negotiate the condition of getting three apartments in neighbourhood F to secure their participation. She thought it would be the trend to move to the city and her children’s future life would be in the city, and if she could exchange their rangelands for an apartment for each child in the city, she would agree to move. Nevertheless, she was only offered two apartments upon negotiation and her family continued staying on the home pasture instead. Another example concerns interviewee Taoligao, a non-migrant man in his 40s. His family was approached by local cadres with an offer of enclosing part of their rangeland (5,000 mu) in return for an apartment in neighbourhood F. Nevertheless, they refused the offer because they did not think it was an economically better deal given that the prices of produce were rising and they could earn more by raising more than 50 sheep units on their land according to the stocking rate at 96 mu per sheep unit at that time.  

**Participation without moving to the city: Negotiating the place**

Joining the project did not always mean that people actually moved to City Q. Two interviewed households were able to negotiate participation without moving to the city. One household moved to a rented pasture and the other just continued staying on its home pasture. Neither of the families had the intention of moving to the city at all and they were actually resistant to participation when the project started. However, due to contingent social, economic and environmental reasons, they approached the local state to be included in the project in order to use the compensation to relieve their financial constraints. Therefore, participation in the project was only a temporary relief mechanism and they were very certain that they would continue their pastoral ways of living in the long run. The local state accepted their participation without moving to City Q as long as they agreed not to use their own rangelands for herding, but the compensation level was a little lower. As regards another interviewee, Manglai, a male head in his 60s, his family first turned down the resettlement offer when the local cadres came to mobilise them because they did not think they could do anything in the city. Negative working experiences of family members in City Q made them feel that life in...
the pastoral area was better than in the city. However, due to expenditure on healthcare for a family member in the second year after the second project started, the family was in great need of money. The family sold nearly all their livestock and borrowed money from relatives but the money was still not enough. The local state approached the family again, suggesting that they could participate in the project to solve their financial problems. The family thus participated in the project and received compensation. “It was just a temporary solution. It was no problem for us to restart herding again in five years,” Manglai said. This was also why his wife and one son were still herding 50 sheep on the non-enclosed part of their rangeland.

The other household, headed by Suhe, an ex-village head in his 50s, participated in the project due to environmental problems on its rangeland. When I interviewed him for the first time, his family was living in a Mongolian yurt on pasture rented from his son-in-law. Suhe recalled that he was very resistant to the project and the idea of living in the city when local cadres attempted to recruit him. As a party member and ex-village-head, he was called upon to be “good model”, and to be more active than the ordinary pastoralists and participate in the project. He had already refused to participate in the first project, which had proved to be unsuccessful in his view and this affirmed his resistance to the second project. Nevertheless, herding on his pasture was severely disturbed after 2007 by trucks going to the quarry nearby. His livestock were scared by the trucks going back and forth and the grass was also destroyed by their trampling. He could not stop the trucks and had to turn to the grassland monitoring bureau for help. Nevertheless, the bureau did not step in to solve the problem but only suggested that he should personally negotiate with the owner of the quarry yard to find a solution. He suggested that the local authorities were reluctant to intervene in the issue because the quarry owner had a strong connection with a high ranked local leader. Being unable to stop the trampling, his family negotiated with the local state and arranged that they could join the project so as to receive compensation without going to the city. Given the large size of his rangeland, around 30,000 mu, he could receive a comparatively high amount of compensation, and his family then used the compensation to rent pasture from others and continue herding. Although Suhe was not sure whether and when the trampling problem would be solved, he was very determined to stay in the pastoral area. His plan was to wait for a few years and divide his property among the children and let them decide what they individually preferred to do in the future.

Manipulation

Another group of more powerful participant households were identified, that had the ability to manipulate the practice of ecological resettlement against
the basic policy of the project. They participated in the project only to take advantage of it by receiving the social and economic benefits. Their livelihoods were thriving in the city and they were referred to as the role models in the official propaganda. However, they did not follow the major binding condition of the project – the enclosure of household rangeland. These households actually continued using the resources of their rangelands in varied ways such as herding and mowing. These households were usually among the local rich and elite. The elite included those with a higher level of education and political positions. The family of interviewee Batu, a man in his 40s, was some of the better-off people in the city. Batu was unlike most of the other interviewees in the city in that he was well dressed, like a businessman, when I first met him at another interviewee’s home. His family lived in neighbourhood F and both of his children were stably employed in the public sector. As the person with the highest education of his generation, a high school graduate, he was more talkative and analytical. As a construction contractor, he was doing quite well in the city. “I have been longing to move to the city. There is no future in being a herder. We are provided with such an opportunity (for being resettled) and we should grasp it”, he said. However, he continued keeping herds at home. Batu inherited his father’s contracted rangeland which was next to his own rangeland. When joining the second project, his family signed an agreement to enclose his own rangeland but the inherited rangeland was not part of the contract and Batu kept his herds on that rangeland. In fact, the animals still went to graze on his own rangeland since there was no fence between the two pieces of rangeland. These actions were not secret but were widely known among the pastoralists. They also claimed the local regulating institution, the grassland monitoring station, was aware of what was happening and some pastoralists even complained to them, but due to relationships or deals between the pastoral households and the local authorities, the actions were not stopped or punished.

The above empirical findings demonstrate that household migration decisions were based on different forms of strategies in the second project which included rejection, negotiation, accommodation and manipulation. Being embodied with varied levels of agency among the affected households, the strategies were fundamentally linked to concern with livelihoods and aimed to “maintain, secure, and improve their livelihoods” (De Haas 2010:244). Attempts to make the best choice based on perceptions of opportunities, benefits and costs at different places were apparent, and the decisions were conditioned by household-level contingent economic, social, demographic, political and environmental factors, as well as cultural factors. More importantly, the findings suggest that the economy, society and the environment were linked in migration decision-making through local manifestations of power; and local social relations were essential for understanding “how
migrants apprehend, negotiate, and transform the social structures that impinge on their lives” (Carr 2005:929).

Compared to the first project, the local state seemed to be less successful in transforming the subjectivities of the people so as to gain their consent to participate in the second project. The failure of the first project certainly undermined trust in the local state and the new aspirations of becoming modern urban citizens were held to varying extents by the pastoralists. The resistance, similar to what Birkenholtz (2009) calls ‘technologies of resistance’ to the state’s efforts, or ‘counter-moves to the (state’s subject-making) strategies’, was based on multiple subject positions. There was a widespread belief that the richest and most politically powerful households benefited most from the project. However, the boundary between cooperation and resistance needs careful consideration in micro-politics. Some seemingly resistant forms of actions, including the rejection of the higher costs of living in the city and the worry of losing independence and non-participation due to failed negotiation, should be more appropriately interpreted as strategic moves for negotiating better conditions. Because these households were mostly concerned with the risks involved in getting a better life in the city rather than being against the idea of modernisation and development they were not insistent on traditional ways of living. Some households even desired continued interventions from the state’s side in order to achieve the visions of modernisation and development. My findings thus support those of Zhu (2008) and challenge an opposite perception of the relationship between the state and society. In the Chinese model of transiting to a market-based economy, an ‘alliance’ was reached between the state’s will and the people’s will based on common values, visions and interests, or commensurality (Zhu 2008), to pursue the vision of developmentalism. The difference between my case and Zhu’s (2008) study of Chinese peasants is that the subjectivity of being a pastoralist was a significant source to resist the state’s subject-making into a modern urban citizen. It was identified most among the middle-wealthy households. Moreover, my findings regarding the difference in willingness to participate between the first and second projects suggest that the alliance between the state and people was not fixed but constantly shaped by the actual consequences of the developmental activities. Additionally, once they had participated in the projects, the households, especially poor ones, became dependent and subordinated to the development models. Their alliance with the state was at the same time driven by dependent and subordinated positions.
Linking household-level factors to participation decisions

When reasoning about the migration strategies, the interviewed households suggested the relevance of a group of household-level factors to a household’s decision on participation in the second project. The most important factors they identified included the number of sub-household within a household, the size of the household rangeland, the size of the household, performance of herd management, the number of labourers in a household, the number of students in a household and the household age structure. In this section, I use statistical analysis to test whether these factors are related to participation decisions. Although different statistical methods could be employed, I have chosen to rely on the use of contingency tables and the test of independence for both the description and analysis of the patterns\textsuperscript{103}. Two sets of data are used. The interview sample was composed of 70 households including 22 participant households and 48 non-participant households, and the register data sample consisted of 418 households including 180 participant households and 238 non-participant households. The register data was mainly from the ‘Xilitu Sumu pastoral household survey 2007’ (Xilitu Sumu government 2008b)\textsuperscript{104}. The reason for analysing two sets of data is that the register data was obtained after the last field trip and so the interview sample was not a random selection from the register data sample. Therefore, it would be interesting to see how differently the two sets of data show the patterns. I first present how the factors were addressed by interviewees in relation to participation strategies and then test the correlations. The factors are analysed one by one according to the order of their importance to the participation decisions named by the interviewees.

A clarification of the notion of the household is needed before going on to the following analysis because several factors hinge upon the definition of this social unit. The household is the basic unit that the state uses to structure social and economic policies. A household refers to the entire unit registered in one Hukou book in China. This household may be a nuclear family but may also be an extended family. A nuclear family subordinated to an extended family, which is called a sub-household (Fenhu in Chinese) in the case study area, does not have the official status of household unless the nuclear family gets its own Hukou book. The land tenure system is another policy structure based on the household unit on top of the Hukou system.

\textsuperscript{103} Refer to Chapter 9 ‘Analysis of two-way tables’ in Moore et al. (2014).

\textsuperscript{104} It is also supplemented by register data from the ‘Xilitu Sumu pastoral household survey 2009’ (Xilitu Sumu government 2010a) and ‘Detailed payments of rangeland compensation’ (Xilitu Sumu government 2008c). Household information is not consistent across local documents and so analysis in this section is based on a selection of 418 households (close to the total number in Xilitu Sumu) with the most information.
Rangeland certificates were first issued in the name of the head of a household with its own Hukou book in the 1990s. Although many sub-households got their own Hukou books later, they are still subordinated to the old extended families in terms of land holding without a separate rangeland certificate. The policy of encouraging the ecological resettlement projects is founded on the household unit. The required qualification for participating in the projects was to be household holding a rangeland certificate and the allocation of benefits were also based on this household unit. Therefore, negotiations between sub-households were expected to result in agreement on participation decisions.

However, this official definition might be at odds with the social reality. For example, not all members of a family are always registered in the same Hukou book. It is common that married-in women, sometimes also their children, are registered in the women’s original Hukou book before marriage. This may be due to the administrative obstacles of changing the registration to the new families and sometimes due to better economic and social benefits associated with the previous place of Hukou registration. There are also family members whose names are registered in the Hukou book but they neither participate in nor take an interest in a family’s business. In relation to the migration decision-making regarding ecological resettlement, the interviewees suggested that a household refers to a family unit that is composed of all members who take an interest in resettlement-related benefits. This neither has to be the same unit as in the Hukou book nor does it have to be the same as in the rangeland certificate. A household could also be composed of several sub-households. In the following analysis, the definition of household is based on the interviewees’ perspective in the interview sample, but has to follow the official definition in the register data sample.

Number of sub-households

The interviewees claimed that the more sub-households a household was composed of, the less likely it was to participate in the second project. Several non-participant interviewees also claimed that the large number of sub-households was the most important factor preventing them from participating. This was because, first of all, more sub-households meant a smaller share of compensation for each sub-household, and secondly, it was harder to reach consensus among more sub-households regarding the participation decisions. Therefore, lack of independent land holding was an obstacle to sub-households’ participation. Table 7 shows the results of a cross-classification of the interviewed households by participation decisions and number of sub-households. Table 8 shows the results of a cross-classification of households in the register data by participation decisions and number of sub-households. It should be mentioned that, the number of sub-households
is not an existing variable in the ‘Xilitu Sumu pastoral household survey 2007’ (Xilitu Sumu government 2008b) and so the figures for this variable were estimated based on supplementary sources.\textsuperscript{105} Nevertheless, it was impossible to estimate the figures with 55 non-households, and so there are 183 participant households instead of 238 in Table 8.

Table 7. Number of sub-households and participation decisions, interview sample.\textsuperscript{106}

<table>
<thead>
<tr>
<th>Number of sub-households</th>
<th>Participant households</th>
<th>Percentage</th>
<th>Non-participant households</th>
<th>Percentage</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>14</td>
<td>35.9%</td>
<td>25</td>
<td>64.1%</td>
<td>39</td>
</tr>
<tr>
<td>1</td>
<td>6</td>
<td>31.6%</td>
<td>13</td>
<td>68.4%</td>
<td>19</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>28.6%</td>
<td>5</td>
<td>71.4%</td>
<td>7</td>
</tr>
<tr>
<td>3+</td>
<td>0</td>
<td>0.0%</td>
<td>5</td>
<td>100.0%</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>31.4%</td>
<td>48</td>
<td>68.6%</td>
<td>70</td>
</tr>
</tbody>
</table>

Summary statistics:
DF: 3
Total Chi-Square: 2.680  p = .4437

Table 8. Number of sub-households and participation decisions, register data sample.\textsuperscript{107}

<table>
<thead>
<tr>
<th>Number of sub-households</th>
<th>Participant households</th>
<th>Percentage</th>
<th>Non-participant households</th>
<th>Percentage</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>124</td>
<td>55.6%</td>
<td>99</td>
<td>44.4%</td>
<td>223</td>
</tr>
<tr>
<td>1</td>
<td>28</td>
<td>38.4%</td>
<td>45</td>
<td>61.6%</td>
<td>73</td>
</tr>
<tr>
<td>2</td>
<td>15</td>
<td>39.5%</td>
<td>23</td>
<td>60.5%</td>
<td>38</td>
</tr>
<tr>
<td>3+</td>
<td>13</td>
<td>44.8%</td>
<td>16</td>
<td>55.2%</td>
<td>29</td>
</tr>
<tr>
<td>Total</td>
<td>180</td>
<td>49.6%</td>
<td>183</td>
<td>50.4%</td>
<td>363</td>
</tr>
</tbody>
</table>

Summary statistics:
DF: 3
Total Chi-Square: 8.732  p = .0331

According to the test of independence, the null hypothesis $H_0$ says there is no association between the row variable and column variable. The $X^2$-value and the probability value at the end of Table 7 confirm the hypothesis. This

\textsuperscript{105} The figures for this variable with the participant households were from the register data in the “Detailed payments of rangeland compensation” (Xilitu Sumu government 2008c). The figures for this variable with the non-participant households were estimated based on comparing the figures for this variable in the ‘Xilitu Sumu pastoral household survey 2009’ (Xilitu Sumu government 2010a), the household size and the relationship between households.

\textsuperscript{106} The 31 households with at least one sub-household were not sub-households to each other.

\textsuperscript{107} The 56 participant households with at least one sub-household were sub-households to each other and they shared 22 rangeland holdings. The 84 non-participant households with at least one sub-household were sub-households to each other and they shared 50 rangeland holdings.
means that, different from the interviewees’ reasoning, participation decisions are not statistically related to the number of sub-households in the interview sample. On the contrary, the $X^2$-value and the probability value at the end of Table 8 disprove the hypothesis. Participation decisions and the number of sub-households are statistically dependent in the register data sample. This conclusion is in line with the interviewees’ reasoning.

The contradictory statistical patterns may be caused by the small size of the interview sample or the exclusion of 55 non-participant households in the register data sample, but they may also be ascribed to the varied processes of migration decision-making of inter-sub-households and intra-households. The interviews suggested that moved-out sub-households could have difficulty in keeping a stake in rangeland-related decisions; married-out members, especially women, and those who studied, worked and settled down in the urban areas, were often less relevant or excluded from making the participation decisions. However, many moved-out members also tried to maintain their rights and benefits related to the rangelands of their original homes. For example, the moved-out members who continued with pastoralism in the new places could temporarily use their original rangelands when necessary. It was also commonly accepted that, if a moved-out member’s Hukou was still registered to the original home, he or she should be entitled to share benefits related to the original household and rangelands. Nevertheless, all these benefits were subject to negotiations between sub-households and members. The interviews suggest that behind the participation decisions, there were negotiations and arrangements made between sub-households. Some households were active in including moved-out members to share the benefits of the project but some households had conflicts with their sub-households regarding participation decisions and how to divide the received benefits. In general, moved-out household members or sub-households often received a part of the compensation if their Hukou was still registered in the same book as the participant households but it was the sub-households that were active and dependent on pastoralism which decided whether or not to participate in the second project.

Size of household rangeland

The interviewees claimed that, the greater the size of the rangeland a household held, the more likely the household was to participate in the second project because a larger area of rangeland meant more compensation. As I have discussed in Chapter 6, the local state also had the strategy of focusing on mobilizing households holding a large area of rangeland so as to claim a bigger figure of enclosure and better political performance. The variable of size of household rangeland is classified into three categories, Small (0-10,000 mu), Medium (10,001-25,000 mu) and Large (> 25,000 mu). The
ranges were decided based on the interviewees’ perceptions. In Table 9, the results of a cross-classification of the interviewed households by participation decisions and size of household rangeland are presented. Table 10 shows the results of households in the register data, and 24 non-participant households without information on the variable are not included. The $X^2$-values and the probability values at the end of Table 9 and Table 10 both confirm the independence hypothesis. This means that, different from the interviewees’ reasoning, participation decisions are not statistically related to the size of household rangeland.

Table 9. Size of household rangeland and participation decisions, interview sample.

<table>
<thead>
<tr>
<th>Size of household rangeland</th>
<th>Participant households</th>
<th>Percentage</th>
<th>Non-participant households</th>
<th>Percentage</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small (0-10,000 mu)</td>
<td>4</td>
<td>30.8%</td>
<td>9</td>
<td>69.2%</td>
<td>13</td>
</tr>
<tr>
<td>Medium (10,001-25,000 mu)</td>
<td>12</td>
<td>27.3%</td>
<td>32</td>
<td>72.7%</td>
<td>44</td>
</tr>
<tr>
<td>Large (&gt; 25,000 mu)</td>
<td>6</td>
<td>46.2%</td>
<td>7</td>
<td>53.8%</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>31.4%</td>
<td>48</td>
<td>68.6%</td>
<td>70</td>
</tr>
</tbody>
</table>

Summary statistics:
DF: 2
Total Chi-Square: 1.663  p = .4353

Table 10. Size of household rangeland and participation decisions, register data sample.

<table>
<thead>
<tr>
<th>Size of household rangeland (mu)</th>
<th>Participant households</th>
<th>Percentage</th>
<th>Non-participant households</th>
<th>Percentage</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small (0-10,000 mu)</td>
<td>54</td>
<td>45.4%</td>
<td>65</td>
<td>54.6%</td>
<td>119</td>
</tr>
<tr>
<td>Medium (10,001-25,000 mu)</td>
<td>97</td>
<td>44.1%</td>
<td>123</td>
<td>55.9%</td>
<td>220</td>
</tr>
<tr>
<td>Large (&gt; 25,000 mu)</td>
<td>29</td>
<td>52.7%</td>
<td>26</td>
<td>47.3%</td>
<td>55</td>
</tr>
<tr>
<td>Total</td>
<td>180</td>
<td>45.7%</td>
<td>214</td>
<td>54.3%</td>
<td>394</td>
</tr>
</tbody>
</table>

Summary statistics:
DF: 2
Total Chi-Square: 1.329  p = .5145

Size of household

The interviewees also argued that households with few people were more likely to participate. There were two mechanisms behind this. First of all, the
number of household population affected whether the participation was economically favourable per capita. Secondly, a smaller sized household may imply reduced capacity for good herd management which indirectly enhanced the attractiveness of the benefits offered by the project. The size of household here does not count people in its sub-households. Households are classified into three categories, Small (1-2 persons), Medium (3-4 persons), and Large (≥ 5 persons).

Table 11. Size of household and participation decisions, interview sample.

<table>
<thead>
<tr>
<th>Size of household</th>
<th>Participant households</th>
<th>Percentage</th>
<th>Non-participant households</th>
<th>Percentage</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small (1-2 persons)</td>
<td>4</td>
<td>40.0%</td>
<td>6</td>
<td>60.0%</td>
<td>10</td>
</tr>
<tr>
<td>Medium (3-4 persons)</td>
<td>14</td>
<td>31.1%</td>
<td>31</td>
<td>68.9%</td>
<td>45</td>
</tr>
<tr>
<td>Large (≥ 5 persons)</td>
<td>4</td>
<td>26.7%</td>
<td>11</td>
<td>73.3%</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>31.4%</td>
<td>48</td>
<td>68.6%</td>
<td>70</td>
</tr>
</tbody>
</table>

Summary statistics:
DF: 2
Total Chi-Square: 0.501  p = .7785

Table 12. Size of household and participation decisions, register data sample.

<table>
<thead>
<tr>
<th>Size of household</th>
<th>Participant households</th>
<th>Percentage</th>
<th>Non-participant households</th>
<th>Percentage</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small (1-2 persons)</td>
<td>47</td>
<td>49.0%</td>
<td>49</td>
<td>51.0%</td>
<td>96</td>
</tr>
<tr>
<td>Medium (3-4 persons)</td>
<td>102</td>
<td>39.7%</td>
<td>155</td>
<td>60.3%</td>
<td>257</td>
</tr>
<tr>
<td>Large (≥ 5 persons)</td>
<td>31</td>
<td>48.4%</td>
<td>33</td>
<td>51.6%</td>
<td>64</td>
</tr>
<tr>
<td>Total</td>
<td>180</td>
<td>43.2%</td>
<td>237</td>
<td>56.8%</td>
<td>417</td>
</tr>
</tbody>
</table>

Summary statistics:
DF: 2
Total Chi-Square: 3.302  p = .1916

Table 11 and Table 12 respectively present the results of a cross-classification of the interviewed households and households in the register data by participation decisions and size of household. One non-participant household in the register data sample does not have information on the variable. The \(X^2\)-values at the end of Table 11 and Table 12 both confirm the independence hypothesis. Thus, the suggested relevance of the size of
household to participation decisions is not proved statistically. However, a higher $X^2$-value and lower probability value for the register data sample means that the association may be more likely in the register data sample.

Performance of herd management

According to the interviewees, a household’s performance in herd management was another important factor affecting participation decisions. The better a household was performing in herding, the less likely it was to participate in the project. Performance of herd management was measured by the number of livestock a household owned. However, this figure tended to be sensitive and problematic both in official records and as reported by pastoralists due to the application of stocking rate. Instead, analysis here used the variable of household pastoral income, which refers to the total household income from pastoralism, to indicate the performance of herd management. The higher the household pastoral income level was, the less likely the household was to participate in the project.

Table 13. Household pastoral income level and participation decisions, interview sample.

<table>
<thead>
<tr>
<th>Self-evaluated income level</th>
<th>Participant households</th>
<th>Percentage</th>
<th>Non-participant households</th>
<th>Percentage</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td>8</td>
<td>72.7%</td>
<td>3</td>
<td>27.3%</td>
<td>11</td>
</tr>
<tr>
<td>Lower middle</td>
<td>4</td>
<td>66.7%</td>
<td>2</td>
<td>33.3%</td>
<td>6</td>
</tr>
<tr>
<td>Middle</td>
<td>3</td>
<td>12.5%</td>
<td>21</td>
<td>87.5%</td>
<td>24</td>
</tr>
<tr>
<td>Upper middle</td>
<td>5</td>
<td>33.3%</td>
<td>10</td>
<td>66.7%</td>
<td>15</td>
</tr>
<tr>
<td>Rich</td>
<td>2</td>
<td>14.3%</td>
<td>12</td>
<td>85.7%</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>31.4%</td>
<td>48</td>
<td>68.6%</td>
<td>70</td>
</tr>
</tbody>
</table>

Summary statistics:

DF: 4
Total Chi-Square: 265.574  p = .0000

Table 13 presents the distribution of the interviewed households by household pastoral income level and participation decisions. The household pastoral income level is classified into four categories, rich, upper middle, middle, lower middle and poor based on the self-evaluation of the interviewed households. The high $X^2$-value and low probability value disprove the independence hypothesis. In other words, there exists significant dependence between household pastoral income level and participation decisions in the interview sample. The poorer a household was, the more likely it was to participate in the second project. The same is true for Table 14, where the distribution of households in the register data sample is cross-classified by household pastoral income level and participation decisions. Household pas-
toral income is classified in deciles. Fifty participant households and three non-participant households without information on this variable are excluded. The high $X^2$-value and low probability value also disprove the independence hypothesis and suggest the significant relevance of household pastoral income to participation decisions.

<table>
<thead>
<tr>
<th>Income decile (yuan)</th>
<th>Participant households</th>
<th>Percentage</th>
<th>Non-participant households</th>
<th>Percentage</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>18</td>
<td>50.0%</td>
<td>18</td>
<td>50.0%</td>
<td>36</td>
</tr>
<tr>
<td>0-760</td>
<td>20</td>
<td>54.1%</td>
<td>17</td>
<td>45.9%</td>
<td>37</td>
</tr>
<tr>
<td>900-3,290</td>
<td>19</td>
<td>52.8%</td>
<td>17</td>
<td>47.2%</td>
<td>36</td>
</tr>
<tr>
<td>3,520-6,450</td>
<td>14</td>
<td>37.8%</td>
<td>23</td>
<td>62.2%</td>
<td>37</td>
</tr>
<tr>
<td>6,490-11,278</td>
<td>15</td>
<td>41.7%</td>
<td>21</td>
<td>58.3%</td>
<td>36</td>
</tr>
<tr>
<td>11,400-15,600</td>
<td>12</td>
<td>32.4%</td>
<td>25</td>
<td>67.6%</td>
<td>37</td>
</tr>
<tr>
<td>15,650-21,382</td>
<td>12</td>
<td>33.3%</td>
<td>24</td>
<td>66.7%</td>
<td>36</td>
</tr>
<tr>
<td>21,612-27,190</td>
<td>9</td>
<td>24.3%</td>
<td>28</td>
<td>75.7%</td>
<td>37</td>
</tr>
<tr>
<td>27,434-37,650</td>
<td>7</td>
<td>19.4%</td>
<td>29</td>
<td>80.6%</td>
<td>36</td>
</tr>
<tr>
<td>37,811-98,452</td>
<td>4</td>
<td>10.8%</td>
<td>33</td>
<td>89.2%</td>
<td>37</td>
</tr>
<tr>
<td>Total</td>
<td>130</td>
<td>35.6%</td>
<td>235</td>
<td>64.4%</td>
<td>365</td>
</tr>
</tbody>
</table>

Summary statistics:
DF: 9
Total Chi-Square: 30.348 p = .0004

Number of labourers

In considering what causes different performance in herd management, another suggestion is that the number of labourers could be a key factor. The more labourers a household had, the more likely it was to show good performance in herd management and the less likely it was to participate in the project. The number of labourers was determined by the number of labourers within a household, the availability of cooperation with other households and the possibility of hiring external labourers. In this section, I only use data on the number of labourers within a household. Table 15 shows the results of a cross-classification of the interviewed households by number of labourers and participation decisions. The variable of number of labourers is classified into three categories, Few (0-1 labourer), Average (2-3 labourers), and Many (≥ 4 labourers). As indicated by the $X^2$-value and probability value, the independence hypothesis is confirmed. The participation decisions of the interviewed households do not seem to be dependent on the number of labourers. Presented by the same way of cross-classification in Table 16, the distribution of households in the register data however shows different patterns. One non-participant household is excluded due to lack of information on the vari-
able. The high X²-value and low probability value disprove the independence hypothesis and suggest that the number of labourers is very relevant to participation decisions. Nevertheless, contrary to the negative impact of the number of labourers on participation decisions, this statistical analysis suggests that households with more labourers were more likely to participate.

Table 15. Number of labourers and participation decisions, interview sample.

<table>
<thead>
<tr>
<th>Number of labourers</th>
<th>Participant households</th>
<th>Percentage</th>
<th>Non-participant households</th>
<th>Percentage</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Few (0-1 labour)</td>
<td>7</td>
<td>53.8%</td>
<td>6</td>
<td>46.2%</td>
<td>13</td>
</tr>
<tr>
<td>Average (2-3 labours)</td>
<td>13</td>
<td>26.5%</td>
<td>36</td>
<td>73.5%</td>
<td>49</td>
</tr>
<tr>
<td>Many (≥ 4 labours)</td>
<td>2</td>
<td>25.0%</td>
<td>6</td>
<td>75.0%</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>31.4%</td>
<td>48</td>
<td>68.6%</td>
<td>70</td>
</tr>
</tbody>
</table>

Summary statistics:
DF: 2
Total Chi-Square: 3.730 p = .1549

Table 16. Number of labourers and participation decisions, register data sample.

<table>
<thead>
<tr>
<th>Number of labourers</th>
<th>Participant households</th>
<th>Percentage</th>
<th>Non-participant households</th>
<th>Percentage</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Few (0-1 labour)</td>
<td>42</td>
<td>47.7%</td>
<td>46</td>
<td>52.3%</td>
<td>88</td>
</tr>
<tr>
<td>Average (2-3 labours)</td>
<td>109</td>
<td>38.5%</td>
<td>174</td>
<td>61.5%</td>
<td>283</td>
</tr>
<tr>
<td>Many (≥ 4 labours)</td>
<td>29</td>
<td>63.0%</td>
<td>17</td>
<td>37.0%</td>
<td>46</td>
</tr>
<tr>
<td>Total</td>
<td>180</td>
<td>43.2%</td>
<td>237</td>
<td>56.8%</td>
<td>417</td>
</tr>
</tbody>
</table>

Summary statistics:
DF: 2
Total Chi-Square: 10.649 p = .0049

Number of students

Most interviewees said that their participation decisions were based on consideration of their children’s future. As was mentioned in Chapter 5,

108 The national one child policy implemented since the late 1970s has had several exemptions for ethnic minorities. Usually the Mongolians are allowed to have two children in urban areas and more in rural areas. Nevertheless, it is common for most families in the study area to have
schools have been removed from the township level and centralised to county level cities. All parents with children at school believed that their children’s future would be in the city because the meaning of getting education was strongly associated with getting a good job and settling down in the city. Therefore, parents would try their best to support their children’s life in the city. Some households participated in the project for supporting their children. For example, two interviewed households claimed that they participated in the project to receive education-related subsidies and to move to the city to take better care of the children at school. In contrast, many interviewed households were motivated not to participate in order to avoid uncertainties about moving to the city and to ensure the stability of their income from herding so as to support their children’s education and future life in the city. Interviewees further suggested that the weight of different considerations was related to the number of students in a household: the fewer students a household had, the less likely it was to participate in the project.

Table 17. Number of students and participation decisions, interview sample.

<table>
<thead>
<tr>
<th>Number of students</th>
<th>Participant households</th>
<th>Percentage</th>
<th>Non-participant households</th>
<th>Percentage</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>11</td>
<td>39.3%</td>
<td>17</td>
<td>60.7%</td>
<td>28</td>
</tr>
<tr>
<td>1</td>
<td>5</td>
<td>19.2%</td>
<td>21</td>
<td>80.8%</td>
<td>26</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>35.7%</td>
<td>9</td>
<td>64.3%</td>
<td>14</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>50.0%</td>
<td>1</td>
<td>50.0%</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>31.4%</td>
<td>48</td>
<td>68.6%</td>
<td>70</td>
</tr>
</tbody>
</table>

Summary statistics:
DF: 3
Total Chi-Square: 3.036  p = .3860

Table 18. Number of students and participation decisions, register data sample.

<table>
<thead>
<tr>
<th>Number of students</th>
<th>Participant households</th>
<th>Percentage</th>
<th>Non-participant households</th>
<th>Percentage</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>113</td>
<td>45.6%</td>
<td>135</td>
<td>54.4%</td>
<td>248</td>
</tr>
<tr>
<td>1</td>
<td>47</td>
<td>40.9%</td>
<td>68</td>
<td>59.1%</td>
<td>115</td>
</tr>
<tr>
<td>2</td>
<td>18</td>
<td>37.5%</td>
<td>30</td>
<td>62.5%</td>
<td>48</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>50.0%</td>
<td>2</td>
<td>50.0%</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>180</td>
<td>43.4%</td>
<td>235</td>
<td>56.6%</td>
<td>415</td>
</tr>
</tbody>
</table>

Summary statistics:
DF: 3
Total Chi-Square: 1.557  p = .6693

two children. Rewards have also been used to encourage young couple to engage in family planning.
Table 17 and Table 18 present the results of cross-classifications of interviewed households and households in the register data by the number of students and participation decisions respectively. Three non-participant households in the register data sample are excluded due to lacking information on the variable. However, the results of both samples confirm the independence hypothesis. No dependent relationship between the number of students and participation decisions is identified.

Household age structure

Age structure not only determined the number of labourers but also the prospect of a household’s life. The interviewees suggested that families with more youths and old people were more willing to participate, while families with more middle-aged members were more determined to stay in the pastoral areas. This was because young people were more open to living in the city and old people with no working ability and possibly with medical care needs found it advantageous to move to the city, while middle-aged people were more likely to do well in herd management. According to the interviewees, parents of families with unmarried youths would make participation decisions depending on where the children preferred to live. The parents of several interviewed households decided to participate because two of their youths who had finished school preferred to settle down in City Q. It is widely shown in migration research especially in developing countries that young people are more mobile and willing to move from rural to urban areas. Youths in the study area (16-30 years old) had mostly lived in urban areas for a few years for schooling. Therefore, an urban life was not strange to them. They did not think language was a barrier to making a living in the city and they had no difficulty in finding temporary jobs.

The statistical analysis below only uses data from the interview sample because the register data sample did not have information on the variable of household age structure. Table 19 shows the distribution of interviewed households in five age groups, age group 0-15, age group 16-30, age group 31-45 and age group 46-60 and age group 60+, by a cross-classification of the number of members in the age group and participation decisions. However, the independence hypothesis is confirmed in all of the age groups. Household age structure therefore does not show statistical relevance to participation decisions. The unclear statistical patterns may be associated with other effects of household age structure on participation decisions than the above accounts of the interviewees. For example, it was also found in the interviews that not all youths preferred the lifestyle of the city. Some youths actually claimed that they preferred a herder’s life at home, being free and quiet, and their families were more determined to stay in the pastoral areas.
Table 19. Household age structure and participation decisions, interview sample.

<table>
<thead>
<tr>
<th>Number of members in age group 0-15</th>
<th>Participant households</th>
<th>Percentage</th>
<th>Non-participant households</th>
<th>Percentage</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>15</td>
<td>34.9%</td>
<td>28</td>
<td>65.1%</td>
<td>43</td>
</tr>
<tr>
<td>1</td>
<td>6</td>
<td>26.1%</td>
<td>17</td>
<td>73.9%</td>
<td>23</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>25.0%</td>
<td>3</td>
<td>75.0%</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>31.4%</td>
<td>48</td>
<td>68.6%</td>
<td>70</td>
</tr>
</tbody>
</table>

Summary statistics:
DF: 2  Total Chi-Square: 0.619  p = .7337

<table>
<thead>
<tr>
<th>Number of members in age group 16-30</th>
<th>Participant households</th>
<th>Percentage</th>
<th>Non-participant households</th>
<th>Percentage</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>3</td>
<td>14.3%</td>
<td>18</td>
<td>85.7%</td>
<td>21</td>
</tr>
<tr>
<td>1</td>
<td>7</td>
<td>36.8%</td>
<td>12</td>
<td>63.2%</td>
<td>19</td>
</tr>
<tr>
<td>2</td>
<td>9</td>
<td>39.1%</td>
<td>14</td>
<td>60.9%</td>
<td>23</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>42.9%</td>
<td>4</td>
<td>57.1%</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>31.4%</td>
<td>48</td>
<td>68.6%</td>
<td>70</td>
</tr>
</tbody>
</table>

Summary statistics:
DF: 3  Total Chi-Square: 4.179  p = .2427

<table>
<thead>
<tr>
<th>Number of members in age group 31-45</th>
<th>Participant households</th>
<th>Percentage</th>
<th>Non-participant households</th>
<th>Percentage</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>11</td>
<td>31.4%</td>
<td>24</td>
<td>68.6%</td>
<td>35</td>
</tr>
<tr>
<td>1</td>
<td>3</td>
<td>50.0%</td>
<td>3</td>
<td>50.0%</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>8</td>
<td>27.6%</td>
<td>21</td>
<td>72.4%</td>
<td>29</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>31.4%</td>
<td>48</td>
<td>68.6%</td>
<td>70</td>
</tr>
</tbody>
</table>

Summary statistics:
DF: 2  Total Chi-Square: 1.159  p = .5602

<table>
<thead>
<tr>
<th>Number of members in age group 46-60</th>
<th>Participant households</th>
<th>Percentage</th>
<th>Non-participant households</th>
<th>Percentage</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>15</td>
<td>39.5%</td>
<td>23</td>
<td>60.5%</td>
<td>38</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>18.2%</td>
<td>9</td>
<td>81.8%</td>
<td>11</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>25.0%</td>
<td>15</td>
<td>75.0%</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0.0%</td>
<td>1</td>
<td>100.0%</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>31.4%</td>
<td>48</td>
<td>68.6%</td>
<td>70</td>
</tr>
</tbody>
</table>

Summary statistics:
DF: 3  Total Chi-Square: 2.879  p = .4107

<table>
<thead>
<tr>
<th>Number of members in age group 60+</th>
<th>Participant households</th>
<th>Percentage</th>
<th>Non-participant households</th>
<th>Percentage</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>18</td>
<td>31.6%</td>
<td>39</td>
<td>68.4%</td>
<td>57</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>22.2%</td>
<td>7</td>
<td>77.8%</td>
<td>9</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>50.0%</td>
<td>2</td>
<td>50.0%</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>31.4%</td>
<td>48</td>
<td>68.6%</td>
<td>70</td>
</tr>
</tbody>
</table>

Summary statistics:
DF: 2  Total Chi-Square: 0.995  p = .6081
There was also another type of youth among the non-participant households who tended to be mobile between City Q and their pastoral homes. Their mobility was decided by the availability of temporary jobs in the city and also by the need of labourers at home. Some of them also tried to develop a business in the city, by driving a taxi, or opening a shop or restaurant. Heads of families with such youths were often determined to stay and engage in pastoralism. Twenty out of the 48 interviewed non-participant households had at least one member, usually a youth, working in the city seasonally. This implies that even the persistent stayers in the rural areas are not really cut off from the urban areas. Instead, by having some members in the cities, it may consolidate their positions in the pastoral areas. Parents with unmarried children also argued that they needed to keep herds to give the unmarried children when they got married. Giving herds is a Mongolian pastoral tradition and newly married couples get the herds, usually 50 to 100 animals, to start developing their own herds no matter if they stay to live with the parents or move to the partner’s parents’ pastures. At this point, both demography and cultural tradition shape a household’s participation decision.

Other factors

In the above statistical analysis, the register data sample provided evidence for the effects of several household-level factors including the number of sub-households, performance of herd management and number of labourers on participation decisions. The interview sample only showed the effect of performance of herd management. A possible explanation could be the small size of the interview sample, or that the not fully random selection of the sample affected the results. Both of the samples, especially the register data sample also had its limitations due to the lack of information for some households on several of the variables.

Besides the above factors, the interviewees also suggested several other relevant factors that were more difficult to quantify, such as the educational level of household heads, political factors, and social capital. Low educational level was said to discourage pastoralists from moving to the city because it was believed to limit opportunities for getting a decent and stable job in the city. Although people who had completed higher education would rarely return to the pastoral villages, the ones that returned had a higher chance of becoming village leaders. The role of village leaders was double-sided in affecting their participation decisions. The leaders are, on the one hand, part of the political system and so they have to obey orders from above to promote resettlement schemes but, on the other hand, their livelihoods are heavily dependent on pastoralism so that they were cautious in making their own participation decisions. Being part of the political system, they have
better access to information, better understanding of uncodified political rules, closer relationships with higher levels and more knowledge of the political system and thus they tend to take advantage of ecological resettlement policies either by participating in or rejecting the project. All the four interviewed village leaders said that they were called on by higher level of leaders to participate so as to set an example for other ordinary pastoralists. The old generation of leaders especially felt more obligated to participate in and support the local government’s directions. However, this approach became more limited when people perceived a high risk was involved. Three of the village leaders participated in the first project and three participated in the second. However, in the second project, two of them did not move to the city and one still used his pasture at home. As was shown in the previous section on narrating household (non)migration strategies, households that included village leaders were able to have different ways of participation from ordinary households.

Social capital refers to the resources a household is able to use in its social networks, either to facilitate settlement in the destination or to facilitate its stay at home. Interviewee Daoerji, a migrant in his 30s, said that, when he at first decided to move to City Q, it was not only because of the favourable terms offered by the project, but more importantly, his relative who owned a hotel for years in the city introduced him to temporary jobs. In the pastoral areas, social capital included if the households were able to contract their herds to another household, if they could borrow rangelands of others and if they could share pastoral work when needs emerge. The possibility of contracting herds to another household or borrowing part of its land facilitated participation decisions while the possibility of sharing pastoral works and borrowing part of someone else’s land was helpful for better herd management and encouraged non-participation in the project.

Above all, household participation decisions were affected by a combination of factors in complex ways. Although the above analysis does not provide strong statistical evidence for the effects of the factors, the suggested relationships still offer conceptual insights into migration decision-making.

Proposing a conceptual model of migration decision-making

Drawing on the conceptual insights concerning the relevance of a group of household-level factors to the participation decisions in the second project from the previous section, I propose a conceptual model to map the patterns of household migration decision-making (see Figure 14). The model classifies households into four types: Warrior, Explorer, Watcher and Follower. As is shown in Figure 14, each vector is labelled with four household characteristics; and the opposite directions represent two extreme situations of
one characteristic. The horizontal vector is labelled with the size of household rangeland, number of sub-households, size of household and household age structure; and the vertical vector is labelled with level of education and leadership, number of labourers, herd management and social capital. Each type of household is defined in a separate quarter. Two types that share the same direction of vector share the characteristics on that vector. For example, Warrior and Explorer both tend to have a higher level of education, better social capital, better herd management, more labourers, and more livestock. The pink box defines the pastoral space while the blue box defines the urban space. The patterns to the right of the vertical vector including Explorer and Follower reside in the urban areas of either City Q or Village S while the patterns to the left including Warrior and Watcher reside in the pastoral villages.

![Figure 14](image.png)

*Figure 14. A conceptual model of household migration decision-making in ecological resettlement.*

Warriors were very determined to stay in the pastoral villages for the long term. Most of them rejected the project and a few participated but insisted on staying in the pastoral villages. They were confident about making better lives in the pastoral villages than elsewhere and they would invest to improve the pastoral infrastructure. This type of household was mostly headed by middle-aged couples with children at school. Watchers also stayed in the pastoral villages but they were sensitive to policy changes. Most of them did not participate in the project due to dissatisfaction with the offered social and economic benefits. They were very likely to participate in a future resettlement.
ment project if satisfactory benefits were offered, for example, a high level of compensation. A few Watchers already participated to receive the benefits but they were not optimistic about living in the city and thus stayed in the pastoral villages. Watcher households were often headed by old people with few labourers. Followers had to participate in the project because participation was considered to be the best choice out of their limited options. They were often poor households with little livestock. Their post-resettlement living was mainly dependent on compensation and their socio-economic situation often did not improve after resettlement. Explorers were most willing to participate in the project and they were positive about adapting to urban life and were even prepared to move permanently to the city. They often had young labourers who had positive experiences of living in the city. Such families were the better-off ones and they were doing well after resettlement.

This model divides households subjected to the ecological resettlement policy into four mutually exclusive types. Among the 70 interviewed households, most non-participant households belong to the Warrior type while most participant households belong to the Follower type. However, the type that a household belongs to is not static but suggestive since changes of household factors and policy are likely to influence a household’s decision-making and to change its type. For example, with a policy offer of more benefits, Watchers can transition to Followers, or with a decrease of labourers and loss of livestock, Warriors can transition to Watchers and even Followers. It could also be the other way around.

The variation in household migration decision-making highlighted in this model is rather new to resettlement studies. The model thus provides a tool for later resettlement study to differentiate and better understand the positions of individual households in the face of resettlement projects. Previous research has drawn attention to the selectiveness of resettlement projects. From a development perspective, the selectiveness in favour of the rich households has tended to marginalise the poor and undermined the development goals (Tang et al. 2005). My findings further suggest that, the poor were more sensitive to policy incentives by changing from Watchers and Followers; meanwhile the better-off families had more room to make a choice between staying as Warriors and moving as Explorers. Ecological resettlement projects thus risk increasing inequality among rural people who used to belong to the same community by producing new urban poor while empowering better-off families in the rural areas.
Placing grassland degradation in household migration strategies

What is surprising in the above investigation of household migration strategies is that, in contrast to the upper-level narratives of grassland degradation as the major threat to and driver of environmental actions, the role of grassland degradation is less straightforward or salient in the local people’s accounts. The impact of environmental factors on migration decisions was suggested to work in two ways: the first was that continued natural disasters caused a big loss of livestock and this drove some households to participate in the first project; and the second was that uncertainty and even negative perceptions of climate and grassland degradation after the continued natural disasters drove some households to look for an alternative livelihood through participating in the first project. The impact of environmental factors on migration strategies was even less evident for most households. Therefore, my case argues that environmental change was a contributing factor but not a direct cause of migration. This supports the general view in environmental migration studies. However, rather than framing the environment as presenting one type of condition that drives migration which is how the mainstream studies approach the environment-migration relationship (e.g. Black et al. 2011), I propose to situate the study of the relationship in problematizing the gap between the discourses and images on wider scales, and the lived reality in the local area. Empirical studies of political ecology demonstrate that the local environmental perceptions are different from the outsiders’ views. Blaikie et al. (1994) state that, it may be surprising to find that disasters connected in the minds of the public with natural hazards are not the greatest threat to local inhabitants. Kinlund’s (1996) study on land degradation in a village of Botswana finds that, to most people in the village, land degradation as such, was not seen as representing the major problem. Instead, the local people viewed climate as being the major problem. Carr (2005) provides a methodological guide to examine the local power/knowledge in which environment, ecology and politics are understood; and to examine the perceptions behind people’s actions to negotiate and transform their contexts. A power lens in my case is especially important due to the fact that, the environment-migration relationship is primarily complicated by the structure of the state-led ecological resettlement projects.

The following analysis intends to argue that the less significant role of grassland degradation in local household migration decisions compared to the upper-level discourses can be explained by two reasons: different environmental perceptions of the local pastoralists from the state and think tank scholars, and their use of coping strategies other than ecological resettlement to respond to environmental problems.
Environmental perceptions

“Individuals and groups based their actions on how they perceive their environment” (Johnston et al. 2006:222). Environmental perceptions are subjective but they reflect both the expectation of risk exposure and the ability to mitigate or cope with the adverse impacts. This further determines the relevance of environmental factors to the affected people’s responses to the state’s policies. The interviewees reported a serial of local environmental problems which included water shortages, climate change, grassland degradation, and also modernisation-related problems such as road construction, traffic, and pollution from mining and quarrying operations. The following part focuses on analysing the perceptions of grassland degradation. It is found that the local pastoralists’ views are different from the state’s view in three aspects: whether there is degradation, the measures of grassland degradation, and the causes of grassland change.

Perceptions of grassland degradation

Interviewees were asked to comment on the physical conditions of their contracted rangelands, and on whether and how they had changed. Their answers suggest a strong time-space feature. When interviewees were first asked the general question “What do you think about changes to your grasslands?” their answers fell into three categories: no big change, getting worse, and getting better. When they were further asked to qualify their answers with references to time, it is interesting to find that those who answered “getting better” all compared the conditions during the interviewed years 2008 to 2010 to the years between 1999 and 2003 when the continuous disasters occurred; those who answered “getting worse” all compared to the conditions in the 1980s and early 1990s; and those who said “no big change” suggested there was a seemingly contradictory high variation of grassland conditions from year to year. A following question to those who said “getting better” was to compare their grasslands to an earlier time before the mid-1990s and they also suggested the current conditions were worse; while after a request to those who said “getting worse” to compare their grasslands to the years between 1999 and 2003, they also agreed that the current conditions were better. Thus, most of the interviewees suggested that the years between 1999 and 2003 were a threshold when the local grasslands greatly declined. Although they seemed to be recovering, they were far from being as good as in the 1990s and before. The trend since the 2000s was said to be that the conditions varied a lot from year to year due to the variation of rainfall. Nevertheless, there were also a few interviewees who insisted on saying that their rangelands around their homes had been in a similar condition even back to the 1970s but at the same time they mentioned the high variation over the years according to the variation in rainfall.
Perceptions of grassland health measures

A relevant question to determine the conditions of grassland is how the grassland health is measured. Compared to the state’s system, the interviewed pastoralists named a more complex set of measures. The key measures they suggested included grass height, coverage, types, the growth in different seasons and the spatial distribution of different types of grasses. In contrast to the government’s strong focus on vegetation coverage and height, the pastoralists were more concerned with the most nutritious types of grass for grazing, the time of growth in spring, the growth in summer and the spatial heterogeneity of the grasses providing different types of nutrition to livestock, all of which was rooted in their concern to continue with pastoralism. Several interviewees were especially critical of the simple measures politicians used to assess grassland health when they visited the site, relying on visual observation of the grass height and coverage. They argued that the expectation of high grass and great fertility does not match the reality of the local physical environment. Higher and greener grasses do not necessarily mean better grasslands for the local pastoralists. One interviewee who had lived in the same place since she was born challenged the visual-based judgement of degradation which is rather common among outsiders: “What looks like degraded grassland with low vegetation is not degradation. It has been in the same state ever since I can remember”.

However, this does not mean the height of vegetation was not important to the herders. High grass can be cut off and stored for winter feeding. If there is snow in winter, higher grass also makes it easier for livestock to graze. The interviews suggest that grass height actual varies quite considerably across the territory of the villages. During the collective time, areas with high grass were usually spared for autumn and winter collective use. After privatisation, if such areas were not within the undivided collective pastures, most households just lost access to them. Additionally, the height of grass indeed decreased greatly. One interviewee showed me in a field that, at some spots where they used to cut grass in late summer before the mid-1990s when the grass could reach a height of 40 centimetres, in July 2009 the vegetation height was only 10 centimetres. The interviewees’ perceptions of their grasslands were based on very detailed daily observations. Linking to their perceptions of grassland change, the interviewees suggested that degradation of grassland is indicated both by the general decrease of a few types of grass and the disappearance of specific types of grass at specific spots. Nevertheless, they believed that the grasslands were very resilient to climate variation. Grass that had disappeared in the years after the disasters started to grow again when good weather returned. Above all, the different focus of measures reflected the fundamentally different concerns between the gov-
ernment and the herders: while the government was mainly concerned with land conservation, herders were concerned with the sustainable productivity of grassland.

**Perceptions of the causes of grassland change**

In contrast to the state’s emphasis on anthropogenic causes of grassland degradation, the interviewees addressed more the role of climate, including drought and the disorder in the broader ecosystem, and institutional problems including the HRS policy and related fencing. Overgrazing as a casual factor was more contested.

- **Drought**
  All the interviewees thought that drought was the biggest problem for grassland degradation. Rainfall was perceived to be the determining factor for grassland conditions. Most interviewees claimed that there was less rainfall and increasing droughts after the 2000s compared to the 1990s. Their explanation for the better grasslands in the recent years 2007-2011 compared to that in 1999-2002 was that this also was a direct result of good rainfall. Their claims matched the meteorological data quite well. When introducing the local physical environment of Xilitu Sumu in Chapter 2, I have shown that, the precipitation pattern in the area varies dramatically from year to year but the general trend is that it has been decreasing (see *Figure 2*). The three lowest records in the last fifty years (1961-2009) all occurred in more recent years 1989, 2001 and 2005. The precipitation anomaly by decade shows even more clearly that annual precipitation in the last decade was significantly below average and much lower than in the previous decades (see *Figure 15*). Zhang’s (2011) assessment of climate on a larger scale in Xilingol League argues for a similar trend, with the regional climate getting warmer and dryer.

  The interviewees emphasised that not only did the total amount of rainfall matter, but also the time the rain arrived was important for the growth of vegetation. The time of the first rain is crucial to ensure a good year. After April is good but not before because the temperature is still low and it could prevent vegetation from growing. Drought in spring delays the regeneration of grasses and reduces the vegetation coverage. Summer rainfall in June and July is detrimental to the conditions of grasslands and can influence whether there is enough grass for the livestock grazing. Summer drought not only reduces the vegetation in summer but also reduces the supply for winter grazing. As an interviewee said, “If we can have a heavy rain before August, just one is enough; the rangeland will be good and we will have a good harvest year.”
Disorder in the broader ecosystem

Most interviewees pointed out that the weather was getting more and more unpredictable which often resulted in sandstorms, drought and snow disasters. There was an increasing trend for extreme temperatures both in summer and winter. These were interpreted as manifestations of the disorder in the broader ecosystem. I cite interviewee Wuyun, a non-migrant woman in her 30s who said: “The ecological system here has changed a lot. The climate has changed a lot. Activities of human beings and animals definitely have some impact on the system but they are not the main factors. The system has changed by itself”. Interviewees with this belief were especially critical of the policy which blamed herding activities for causing grassland degradation.

Household Production Responsibility System

Many interviewees, especially old people, thought that the main cause of rangeland degradation was actually the HRS which was set up partly for controlling the problem. Qiique, a non-migrant woman in her 60s said: “The rangelands are not as good as they used to be. I think it is because rangelands are contracted to households and we cannot move around with herds as before.” Demarcation of boundaries between household rangelands tends to limit the livestock’s mobility and increases grazing pressure on household plots. It also makes access to spatially heterogeneous resources difficult. This view has also been supported by researchers (Li and Zhang 2009; Zhang and Li 2008).
Fencing
Fencing is related to the introduction of HRS. It makes visible the borders between households and it was blamed for causing more rapid degradation of land. Fencing is also used by the local government to enclose the range-lands for restoration. Nevertheless, few interviewees thought fencing was an effective method. They explained that grass needs to get healthier through some level of interaction with livestock because the manure of livestock provides nutrition for grass growth and the grazing also helps the growth of new grasses the following year. Otherwise, the grass cannot grow with old grasses on top.

Overgrazing
When I directly asked the question “What are the causes of rangeland degradation?” most interviewees said “The grassland indeed has become worse than before but the main reason is drought, not too many livestock.” They did not deny the relevance of overgrazing to grassland degradation but did not consider it as the main reason. They thought there was a range of carrying capacities for household plots of grasslands nowadays due to the reduced mobility of herds after the implementation of HRS. I asked the interviewees to estimate how many animals they thought their contracted rangelands could support without causing overgrazing. Their estimates were between 30 to 50 mu per sheep unit depending on the condition of the grasslands, which was much lower than the official stocking rate of 96 mu per sheep unit. Due to the fines applied upon finding overstocking by inspectors from the local Animal and Husbandry Bureau, many interviewees tried to be vague when talking about the number of animals they had but there were also quite a number who admitted that they had a level of livestock appropriate to their own estimates of carrying capacity, which was much more than the officials’ estimate. By identifying rangelands and pastoralism as the fundamental factors in sustaining their lives, they claimed their use of the rangelands took care of its long-term health. This was also the reason they resented the official stocking rate and tended to ‘overstock’ in the eyes of the state. However, overgrazing was not totally ruled out as a cause of grassland degradation. Some families blamed a few “big families” for a loss of morality by raising as many livestock as they wanted and letting them run everywhere on others’ lands, which harmed the health of the grasslands.

In contrast to the state’s discourses and the broader public image of grassland degradation and its causes which I have analysed in Chapter 5, the findings in this section demonstrate very different perceptions of local grassland conditions from the local pastoralists’ perspective. Most importantly, they measured grassland health differently and ascribed the prime causes of grassland degradation to climate change and institutional factors rather than overstocking/overgrazing. As a consequence, they did not think the measures
promoted by the state aiming at reducing livestock numbers, such as HRS, stocking rate, fencing and ecological resettlement, were useful for restoring the grasslands. Moreover, against the portrayed image of pastoralists as exploiters of grassland resources, the pastoralists defended themselves as a group of people with the greatest interest in and motivation for making sustainable use of the grasslands. They were familiar with the politics regarding grassland degradation and sandstorms as well. Gaowa replied, as part of the answer to the causes of grassland degradation, “For the state, to make some contribution, for the Olympic Games, for the recovery of the grassland, we can make the sacrifice of raising fewer animals.” The term “sacrifice” nevertheless implies the externality of environmental interests. The above findings suggest that, though the state has used various means to spread its message regarding grassland degradation, it has not really changed environmental understandings and subjectivities of the local pastoralists in rangeland use.

Strategies for coping with environmental problems

My observations and interviews with pastoralists made me realise that pastoralists consider adapting to climatic risks and making the best use of natural resources in time-space as fundamental aspects of the pastoral life. The ability to predict and avoid climatic risks by organizing herds in advance is a sign of one’s quality as a pastoralist. Therefore, coping with and adaption to the highly variable environment associated with uncertainties and risks has been internalised and developed into socially based practices. Table 20 lists a number of strategies that local pastoralists have adopted to cope with the typical types of disasters in the study area but there are also increasing challenges of adopting these strategies. It should be mentioned that these strategies are not static traditions but are reproduced by economic and social structures. On the one hand, local pastoralists still try to make use of traditional coping strategies, such as going Otor, especially in times of disaster. Mobility is still at the core of pastoralism. Here I agree with Doevenspeck (2011) and argue that the impact of the progressive deterioration of environmental conditions is embedded in social and cultural structures. However, long accepted social and cultural practices, such as going Otor, have become more and more costly. The intrusion of market principles has been rapidly reconfiguring cultural and social relations-based rules. The difficulty of arranging such practices was especially acute when massive pastoral families simultaneously relied on the practices. On the other hand, pastoralists have taken on new strategies introduced by modernisation, market and technology, such as the purchase of forage and warm pen-raising. Resources from external systems have become an indispensable part of coping with the adverse climate nowadays.
Table 20. Strategies for coping with disasters and the challenges of continued practices.

<table>
<thead>
<tr>
<th>Type of disaster</th>
<th>Coping strategies</th>
<th>Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light drought</td>
<td>• Move a short distance within Xilitu Sumu; • Use undivided collective rangelands in the villages; • Sell some livestock.</td>
<td>• Fencing; • Forbidden use of collective rangelands.</td>
</tr>
<tr>
<td>Heavy drought</td>
<td>• Long distance moving over county, going Otor; • Sell more livestock before autumn; • Contract livestock to a household in another county.</td>
<td>• Increasing costs of going Otor including pasture rent, water and transport; • Lack of labourers; • Drop in livestock prices; • Worse quality of breeding.</td>
</tr>
<tr>
<td>Snow</td>
<td>• Prepare enough forage before winter; • Fatten livestock well before winter; • Sell more livestock in autumn.</td>
<td>• More expenditure for purchasing forage.</td>
</tr>
<tr>
<td>Sandstorm</td>
<td>• Improve infrastructure and keep livestock in pens; • Prepare enough forage for pen-raising.</td>
<td>• More expenditure for building and maintaining infrastructure; • Increased costs for purchasing forage.</td>
</tr>
</tbody>
</table>

Therefore, pastoralists’ mobile identity adds another dimension to environment-migration relationship. Migration has been a strategy to cope with disasters and grassland degradation. However, it is not from rural to urban areas and does not involve a change of livelihood, but instead is between rural places and across rural spaces. When they were compared side by side, which was the situation at the beginning of the first project, it was clear that, moving to Resettlement Village S was not the first option for families which could arrange to go Otor. Several participant households were motivated to join the first project partly as a consequence of not being able to arrange to go Otor despite this being subordinated to the motivation of getting rich. Few households referred to grassland degradation and disasters as motivations for participating in the second project. This was related to the lack of disasters and the climbing prices of livestock in the years at the beginning of the second project.

Based on the above analysis, I conclude that the less significant role of environmental factors in affecting migration strategies in ecological resettlement can be ascribed to the pastoralists’ environmental perceptions being different to those of the state, and the availability of coping strategies other than migration. Pastoralists perceived climate change instead of grassland degradation per se as the biggest environmental problem. Due to the different perceptions of grassland degradation in terms of extent, measures and causes, local pastoralists could not follow the state’s logic in using ecolog-
cal resettlement as an effective measure to restore grassland. The ways in which people understand the environment and relate themselves to it (Agrawal 2005), have not really been reshaped by the state’s new knowledge. The environmental subjectivity of being a pastoralist tended to make them view the grassland conditions as very resilient. They are aware of risk exposure and they are also used to adopting coping strategies. Nevertheless, this is not to say that they are not becoming more vulnerable in the face of climate change.

Conclusion

Driven by an interest in the different choices of staying and moving in response to the local ecological resettlement projects, this chapter has sought to analyse how China’s environmentalisation worked through pastoral households’ migration strategies. Analysis of the interviewed households’ narratives reveals that household migration decisions, especially in the second project, were based on different forms of strategies, which included rejection, negotiation, accommodation and manipulation. While the attempts to make the best choice based on perceptions of opportunities, benefits and costs at origin/destination were fundamentally embedded in the concern with household livelihood, the strategies highlighted that the economy, society and the environment were linked in migration decision-making through local manifestations of power, and local social relations were vital for understanding “how migrants apprehend, negotiate, and transform the social structures that impinge on their lives” (Carr 2005:929). A group of household-level factors were especially suggested to have important impacts on participation decisions. Although the statistical analysis does not yet provide significant evidence for most of the effects except the performance of herd management in both the interview and register data samples, which could have been caused by the small size of the interview sample and the lack of information on several of the variables with some households in both the interview and register data samples, the suggested effects still contribute insights that could be used in the construction of a conceptual model for mapping the patterns of household migration decision-making in ecological resettlement. In this model, I classify households into four types: Warrior, Explorer, Watcher and Follower. The model thus provides a tool for assessing the positions of individual households in the face of resettlement. In this case study, the categorisation of individual households in specific types, and changes between the types draw attention to the risk of increasing inequality as negative consequences of the incentive-based policy approach to ecological resettlement. The last section of this chapter returns to the question of the environment-migration relationship given that the launch of ecological resettlement was claimed to be a response to grassland degradation in upper-level discourses.
By situating the study of the environment-migration relationship in the gap between the discourses and images articulated at the upper levels, and the lived reality in the local area, this analysis argues that the less significant role of grassland degradation in local household migration decisions compared to the upper-level discourses can be explained by two reasons: different environmental perceptions of the local pastoralists from the state and think tank scholars, and the pastoralists’ use of coping strategies other than ecological resettlement to respond to environmental problems.

One of the most important theoretical contributions that this chapter makes is to shed light on a more complex type of local state-society relationship different from the oppositions and conflicts often addressed in studies of local politics. Against Sigley’s view which argues that “rural subjects, especially minorities are not considered fit to govern themselves in China” (2006:489), my analysis demonstrates that the state has been active in governing its rural subjects since the increase of environmental concerns involving rural spaces. The local state seemed to be successful to some extent in gaining the consent of the people by conditioning people’s aspirations and desires to be in line with the state’s will. In other words, the state was able to influence the subjectivities of pastoralists. Many local people somehow had the same interest as the local state to embrace modernisation development, especially in the first project. The findings agree with Zhu (2008) who argued that in the Chinese model of transiting to a market-based economy, there could be an ‘alliance’ between the state’s will and the people’s will to pursue the vision of developmentalism. Nevertheless, the condition is that the people cannot be left alone without the state’s support. Moreover, such an alliance is also constantly shaped by the realistic consequences of the developmental activities. In this case study, while many pastoralists were enthusiastic about becoming dairy farmers and getting rich, most were sceptical about turning into urban citizens. The state was even less successful in transforming the environmental subjectivities of pastoralists. In contrast to the state’s perceptions of the grassland degradation in terms of extent, measures and causes, the local pastoralists could not follow the state’s logic of promoting ecological resettlement as an effective measure to restore grassland. The environmental subjectivity of being pastoralist tended to make pastoralists view grassland conditions as very resilient. Therefore, environmental factors did not constitute an important consideration in household decisions on participation in the projects.
8. Reconfiguring the practice of Mongolian pastoralism

In the previous chapters, I first examined how environmentalisation of the state is operationalised through ecological resettlement and then how environmentalisation is put forward through local implementation of specific projects. In doing so, I have gradually shifted the observational lens from the macro to the micro scale. In this chapter, I focus on the pastoral villages, the origin of the affected pastoralists, to explore how environmentalisation reconfigures the practice of Mongolian pastoralism. The basic environmental rationale of ecological resettlement is to restore the environment through depopulation and restriction of resource use. My aim in exploring how environmentalisation reconfigures the practice of Mongolian pastoralism is thus to examine the implications of the measures associated with the environmental rationale for the practice of Mongolian pastoralism. On the one hand, as I have introduced in Chapter 2, rangeland use in China has been fundamentally structured by land privatisation as part of the HRS in rural China after economic reform (Banks 2001; Williams 2002; Zhang 2006). Nevertheless, land privatisation was not put into place at once but through gradual institutionalisation, which continues today. Therefore, the outcome of land privatisation is the basis on which ecological resettlement rules work and enforcement of ecological resettlement rules in turn are also likely to contribute to further institutionalisation of land privatisation. On the other hand, livelihood, labour and resource use provide the points of engagement between people and their material world. The points of engagement have been regulated by social relations of reciprocity and obligation. In the face of challenges after ecological resettlement, they are the core assets that resettled households could depend on to maintain livelihoods. This chapter is thus composed of two analytical parts. The first part examines how the management of rangeland as part of implementing ecological resettlement projects has facilitated environmentalisation; and the second part looks into how and

---

109 Part of the empirical materials in this chapter was partly used in a book chapter of Zhang (2013) published in Chinese. However, the conceptual approaches and depth of analysis are quite different.
why migrant households have become re-included in the practice of pastoralism to transform environmentalisation.

Territorialising the pastoral landscape

This section is intended to show how land privatisation used the technologies and mechanisms of environmentalisation to territorialise the pastoral landscape. It begins by analysing the rationalities and tools of rangeland management in ecological resettlement. By “control(ling) what people do according to detailed land classification criteria” (Vandergeest and Peluso 1995:412), the plan of rangeland management after ecological resettlement reflects processes of territorialisation. Nevertheless, the presumption of clearly defined household-based land rights is contrary to reality. Based on findings from the interviews, I reconstruct the processes of institutionalizing pastoral land tenure and find they are constituted of the state’s continued attempts to specify boundaries, and ecological resettlement actually follows the same trajectory to further clarify household boundaries. The technologies of privatisation not only include certification and fencing but also cultivation of pastoralists’ sense of household boundaries. Therefore, in the last part of this section, I intend to show that further fragmentation of the pastoral landscape and changing practices of pastoralism were the consequence of policy but more importantly were outcomes of changing ideas of resources and social relations.

Managing rangelands in ecological resettlement

Figure 16 is a map made by the county level Grassland Monitoring Station to show the plan of rangeland management after moving away participant households in the second ecological resettlement project. Posted in the information board of neighbourhood F, the map showed part of the environment in the resettlement neighbourhood to demonstrate the rationalities of ecological resettlement. On the map, rangelands in the pastoral villages are divided into many plots. These plots are contracted rangelands to individual households. The few plots in pink are the remaining collective rangelands. The dark green plots illustrate the rangelands of participant households in the second project. According to the plan, participant households have moved away from these of rangeland plots and the plots have been enclosed and exempted from grazing pressure. All the collective rangelands are also forbidden from grazing. In total, the local government claimed that 60 per cent of the rangelands in Xilitu Sumu were exempted from grazing pressure for natural restoration. Based on this plan, the focus of rangeland management
after ecological resettlement is thus on ensuring a grazing ban on enclosed rangelands.

![Diagram](image)

**Figure 16.** An illustrative map of the rangeland management plan in the second ecological resettlement project. Adopted from the ‘Map of Rangeland Management Plan in Xilitu Sumu’ made by the county-level Grassland Monitoring Station.

Fencing was taken up as the best facilitating measure for enforcing the grazing ban. Fences were not set up at once around all resettled households’ rangelands upon their movement. Instead, they were built up gradually, according to the availability of funding. In the first project, only ten of the resettled households’ rangelands were enclosed. In the second project, many fences were built up after 2010 when a large amount of funding arrived. Fencing was nothing new; it was a debated approach that had been promoted and financed for a long time by the state (Banks 2001; Williams 1996a, 1996b). Alongside ecological resettlement projects, fencing support was also given to non-participant households upon funding becoming available. It was advocated as an effective measure to exclude others’ free use of a household’s rangeland. Additionally, restrictive measures including stocking rate and a seasonal grazing ban were applied to non-participant households¹¹⁰. The county-level Grassland Monitoring Station from time to time

¹¹⁰ The Grassland Inspection and Supervision Station is charged with inspecting stock numbers, often twice a year, of individual households, based on the Grassland Law, the Grass-
sends out staff to patrol enclosed rangelands and check non-participants’ livestock numbers and herding behaviours. Imposition of penalties has become the main method of rangeland management. In general, one can say that rangeland management after ecological resettlement has followed the rationale of previous pastoral policies and is based on private land rights and restrictive measures.

As Figure 16 shows, the geographical distribution of resettled households’ rangelands has two characteristics, first of all, it is dispersed but with some clusters, and secondly some plots of participant households are between the plots of non-participant rangelands. The pattern is a combined result of the village-level politics and the household migration strategies analysed in Chapter 7. While the local government decided that Gacha B and D were the focus of the first project, and later Gacha A was the focus of the second project, nowadays there is a higher percentage of participant households in Gacha A (57 per cent) and a lowest percentage in Gacha D (43 per cent). This results in more clusters of enclosed plots in Gacha A. The current management tends to distort the distribution of grazing pressure and lock it to specific spots.

The launch of ecological resettlement however has placed rangeland management in an interesting contradiction: while HRS and privatisation of rangelands have attempted to decentralise the power of land management to individual households, local authorities are empowered after ecological resettlement to constantly monitor, assess and control households’ land use and livestock management. A big challenge is that enforcement of the measures is very dependent on the inspections of local authorities. However, the vast size of the rangelands implies a high monitoring cost and high demand for staff, of which there is a shortage, according to local authorities. Therefore, the measures have been enforced rather randomly and penalties have been charged in an arbitrary manner. The latter has particularly increased tensions between the local state and pastoralists. This was not only reported by my interviewees, but also in other pastoral areas (Wang 2009, Zhang 2006). It is said that fines have become a source of income for the county-level Grassland Monitoring Station, which is facing a shortage of funding. I see penalties as one mechanism through which pastoral behaviours are regulated. Other than that, another more fundamental mechanism that creates long-lasting effects is institutionalisation of land tenure.
Institutionalizing land tenure and demarcating household boundaries

The previous section has shown how a presumption of household-based land rights is reflected in the rangeland management plan. Holding a land certificate is a basic pre-condition for a household to participate in the ecological resettlement projects. Nevertheless, the study finds that land rights have remained incomplete, ambiguous and even more disputed in the pastoral villages. Land reform is still an ongoing process, and it has the aim of clarifying land rights. Ecological resettlement has thus given a driving force for further institutionalizing land tenure. It is also true the other way around that policy-makers attempt to further institutionalise land tenure through enforcing ecological resettlement. Before analysing the technologies and mechanisms that land privatization uses, I briefly review the history of the establishment of the land tenure system in the pastoral villages of this case study.

When decollectivisation started in the early 1980s, the county-level government issued the HRS guidelines, but methods of implementation were devised at lower levels of government. The specific allocation rules and implementation were actually all decided by the leaders of village committees. The methods of allocation therefore varied from village to village. Village leaders including the village head, village party secretary and village accountant, were key decision-makers in village land allocation. The following history is thus reconstructed based on interviews with village leaders at that time. As I have introduced in Chapter 2, two major rounds of land allocation have been implemented. In the first round in 1984, individual households were only allocated the nominal size of their contracted rangelands without specifying the exact boundaries of their own pastures. Two central principles for dividing rangelands at that time were: firstly, to respect land use history, thereby attempting to assign pastureland to the nearest households and to those who used to live on the pastures; and secondly, to give as good as possible access to boreholes to every household. Nevertheless, the second principle was very difficult to uphold on many occasions due to the limited number of boreholes in the area. This feature is still clearly visible in the plan of rangeland management nowadays (see Figure 16).

Land allocation rules also varied across the four Gachas. In Gacha D the size of the household rangeland area took account of both the livestock quantity and the household population in Gacha D while in Gacha A only the household population mattered. Moreover, rangelands were only nominally allocated to the Haote level (‘haote’ means natural village in Mongolian), a production team composed of neighbouring households who used to work together during the collective time. Pastures were still used in common as they were in the commune period. The major change was that individual households replaced the production team to become the decision-makers on everyday production. Interviewees mostly thought that distributions were
fair at that time and every household was generally equal, except a few Han interviewees who complained that they were given less due to their non-native backgrounds.

The second round of land allocation in 1996 was intended to allocate more collective land to individual households, to re-clarify household land boundaries, and to extend the period of land tenure to 30 years until 2026. It was in the second round that more rangelands were allocated to each household and the locations and boundaries of household rangelands were demarcated on paper. All the interviewed village leaders said that they were quite reluctant to divide land among individual households because they could not imagine how to practice Mongolian pastoralism on divided household plots. The leaders resisted the policy to varying degrees by keeping some rangelands as collective ones (the pink areas in Figure 16). Moreover, in Gacha B, households got the first piece of rangeland in the 1990s and the second piece of rangeland in 2003. The second piece was usually small\textsuperscript{111} and distant from the first one since it was from a previous piece of collective rangeland. Some households were able to make good use of the two pieces of pasture for seasonal migration. However, in practice, most others only stayed on one piece throughout the year and did not use the other.

Legalisation, certification in particular, is a key technology in establishing land tenure. Figure 17 shows different legal certificates that were issued to an interviewed household over years to show entitlement to land rights. The first certificate ‘Grassland and Rangeland Use Right Certificate’ issued in 1988 simply indicated the size, location, boundaries, usage and infrastructure of household rangeland. The second certificate ‘Grassland and Rangeland Contract’ issued in 1996 added more terms of rights and obligations regarding the contracted rangeland. For example, the rangeland cannot be purchased or sold but the usage rights can be inherited and transferred; the contractor should follow the Gacha leadership and planning in using the contracted land; and the contractor has the obligation to protect and improve grasslands and pay fees to the Gacha. It also indicated the size and type of contracted rangeland and the period of contract.

A most important change in the new certificate compared to the old one is the information on the shape, location and boundary of a household’s rangeland (see Figure 18). In the first certificate in 1988, there was only rough information on the boundaries of household rangeland in descriptive words referring to names of landscape features. In the second certificate in 1996, an illustrative map was also inserted to show the shape and size of a household’s rangeland. According to the interviewees, staff from the local Animal Husbandry bureau carried out measurements of household rangeland size and size and boundaries in the 1990s, which provided the information in the new certificate. After the measurements, both the size and boundaries of

\textsuperscript{111} A common second piece is sized 1,000 mu.
Figure 17. Different rangeland rights certificates issued to an interviewed household over time. Note: ① is a Grassland and Rangeland Use Rights Certificate issued in 1988; ② is a Grassland and Rangeland Contract issued in 1996; ③ and ④ are Grassland Contracting and Management Rights Certificates issued in 2003 and 2004; and ⑤ is a Grassland Contracting and Management Rights Certificate issued in 2010. ③ and ④ were issued to replace the previous certificates. ⑤ was issued to a newly allocated plot of rangeland.

Figure 18. Changing ways of mapping a household’s rangeland plot rangeland contracts and certificates over time.
many households’ rangelands changed compared to the 1980s. For example, many families in Gacha B lost nearly 1,000 mu of their rangelands. Disputes about the information in the new certificate arose among pastoral households which questioned how well this information matched the reality.

The framing policy Two Rights and One System (Shuangquan Yizhi in Chinese) (IMDRC 1996, Neizhengfa 1996 No. 138) drives further pursuit of an institutionalisation approach to safeguarding the land rights of pastoral households. After the launch of the first ecological resettlement project, the “Grassland Contracting and Management Certificate” was issued in 2003. In some cases, it involved a big change. For example, one interviewed household’s rangeland, without changing its size, changed its shape from triangular to square from 1996 to 2003 (see Figure 18). Advanced technologies such as GPS have enabled more accurate measurements of household rangelands. Yet, there are still several households with disputes which are to be resolved by the county-level Grassland Monitoring Station, an administrative unit with increasing power in rational and scientific rangeland management.

Increased awareness of household boundaries and fragmented pastoral resources

Privatisation of rangeland goes against the needs of mobile pastoralism in semi-arid and arid areas (Behnke and Scoones 1993; Fraktin 1997; Humphrey and Sneath 1999; Niamir-Fuller 1999; Turner 2003). Critical studies worldwide have argued that the most important consequence of rangeland privatisation is landscape fragmentation (Galvin et al. 2008; Goldman and Riosmena 2013; Hobbs et al. 2008). Fragmentation refers to the disconnection of areas of the landscape from one another. It limits the access of animals to resources, particularly vegetation and water (Hobbs et al. 2008). In the context of climate change, it increases the vulnerability of pastoralists, especially the poor (Goldman and Riosmena 2013). Following the ideas of locking land use within household boundaries in the above section, ecological resettlement contributes to further fragmentation of the pastoral landscape. In this section, I intend to show that changing the practice of pastoralism is a consequence of policy but more importantly an outcome of changing social relations due to the increased awareness of household boundaries among pastoralists.

Several non-participant interviewees said that they had to change the grazing routes which used to go across participant households’ rangelands, especially those enclosed with fences after ecological resettlement. This not

112 ‘Two Rights and One System’ is a policy for strengthening institutions of land ownership and user rights and the HRS.
only limited their access to different types of vegetation but most importantly the access to boreholes. At that time most families were still mainly dependent on boreholes dug in the 1970s. While some families continued herding their livestock to drink at the boreholes through taking longer routes, other households which could afford to take the longer routes instead chose to transport water by vehicles back to the settlement for the livestock to drink. The latter was in some cases the only option because the longer distance to boreholes made it impossible for livestock to return in a day. Construction of fences also prevented opportunistic use of resources on some collective rangelands. Although ground surface water is generally rare in the area, there are some seasonal puddles after rains in spring and summer. Quite a number of pastoralists, especially poor ones, used to temporarily migrate and stay close to these puddles for a few days. The interviewees also claimed that herding demands more labourers after ecological resettlement in order to keep livestock from entering enclosed rangelands. Otherwise, there is a risk of getting fined by patrol officers.

It is easy to see from Figure 16 that the household plots are often in the shape of long triangular strips and the borders of neighbouring plots often meet at the wells. This pattern, as I have mentioned, is a result of an intentional decision during the land allocation rounds. However, the interviewees reported that in practice the narrow sides of the rangeland plots made it extremely difficult for livestock to move only within one family’s own boundary. Some families agreed with their neighbours to re-divide their rangelands to shapes more convenient for herding. Other families used less of the narrow part and still some tried to use the land but with constant friction with neighbours. According to the interviewees, disputes have been on the rise even though family ties and social networks can mitigate them on some occasions. In the daily practice of herding, crossing boundaries is only accepted if it is based on a fair use of each other’s rangeland.

Researchers on land tenure in pastoral areas of China all mention a gap between the policy and practice of rangeland tenure. Banks argues that land use patterns were less the product of state intervention but of “prevailing patterns of social norms and organisation” (1997:29). Ho (2001a) calls rangeland tenure in China an “empty institution” to suggest that the rules of land privatisation only existed on paper, without affecting the practice of land use due to the local people’s resistance to it. Ho also explains that the local governments deliberately “sustain institutional ambiguity to avoid social conflict” (2001a:401). Williams draws attention to the vocal and active opposition of local residents to land privatisation (2002:510). Zukosky (2008) argues in a similar way as Ho that land allocation and certification clearly do not reflect the household usage and he highlights the conduct of the local government is intended to simultaneously meet the need to represent a coherent and unitary state, and address local residents’ interests and concerns. While agreeing with them about the gap between what is on paper
and what is the actual practice, I propose a different view based on my findings regarding the people’s attitude towards privatisation. From a governmentality perspective, I argue that, instead of meeting complete resistance as previous studies suggest, to some extent the state has been successful in cultivating a sense of private ownership and of boundaries in the minds of pastoralists. This effect is taking place after more than twenty years of privatisation and through use of technologies including certification, mapping, identification of boundary and fencing.

My interviewees claimed that nobody had a clear idea nor did they care about the boundaries between household rangelands even at the beginning of the second round of land allocation in the 1990s. As regards the practices of pastoralism, the most important thing for them was to access land but not to own land. Flexibility and mobility were much more important. This was continued in the collective time. Mobility was generally without limit within the sumu territory but agreement was required between sumu leaders to access each other’s lands upon need. Even though land was allocated to Haote or households, it did not change the actual collective use. However, the sense of household boundaries gradually grew with the continued institutionalisation of land tenure. The interviewees recalled that in the second round of land allocation they were shown by local officers where their approximate boundaries were by referring to the physical features of the landscape such as hills, wells, trees, or slopes. According to the interviewees, disagreements were frequent between households, and tensions started to emerge but rarely turned into conflicts. For example, in a few cases, one household had to abandon its built house which turned out to be on another’s rangeland, and rebuilt a new one within the identified boundaries. However, such solutions were mainly left to negotiations between households.

According to the interviewees, after ecological resettlement, the provision of the more detailed map in the certificate in 2003 further strengthened pastoralists’ sense of exclusive rights to their contracted rangelands. Compensations and other economic values associated with rangelands also increased the commodity idea in pastoralists’ minds. Basically the interests between participant households and non-participant ones became divided. Although literature on pastoralism worldwide highlights that various social arrangements in pastoral communities have strived to maintain flexible and fuzzy boundaries in order to maintain mobile pastoralism in the face of land privatisation (Banks 1997; Behnke 1992; Fernandez-Gimenez 2002; Galvin et al. 2008; Ho 2001a; Mwangi and Dohrn 2008), the introduction of ecological resettlement in my case challenges a fundamental principle of such arrangements - reciprocity.

Although according to the plan the rangelands of resettled households were supposed to be free from grazing activities, this is not the reality. Participant households’ rangelands especially those without fences are grazed by the livestock of neighbouring non-participant households from time to
time. Interviewee Manglai’s family signed a resettlement contract but stayed on their rangeland without having herds. He complained to me that quite often the neighbours’ livestock came to graze on his rangeland. Especially in the winter, many big animals came to graze. He had to drive the others’ herds off his land a few times but at the same time, he felt awkward about having to do it. He said:

“Every villager knows each other and we have kinship connections close or far somehow. I do not want to make the others feel I am a mean person (which is totally contrary to the moral norm of a Mongol pastoralist) but I have opinions on their grazing on my land. I did not talk with the owners of the livestock. I had to drive the big livestock out. Their livestock used to come to graze too (before ecological resettlement) but we used to be a unified group and never had disputes.”

In the later interview, he said that, he felt very unhappy when the others’ horses came to graze on his land after he lost all his horses in the continuous disasters of 2001. When I asked him why he did not fence his rangeland to avoid it being grazed by others’ livestock, he said fences would prevent his livestock grazing on the neighbours’ rangelands. An interesting point in his narrative is that Manglai’s acceptance of the neighbours’ free-grazing on his land was on the condition that his livestock could do the same on theirs. Manglai’s logic suggests that the lack of reciprocity after ecological resettlement has increased his sense of boundary.

I continue by comparing the views of one participant interviewee and one non-participant who were neighbours to each other. Baolidao, whose family moved to City Q, was very upset with the use of his rangeland by his non-migrant neighbour, his sister Gaowa. Their relations became very intense because the sister ignored his warning to keep her herds off his land. He complained to me that his sister’s animals almost always stayed on his rangeland since his family had moved to City Q and his rangeland was being destroyed by that. He complained to his sister once but his sister often denied it and she disputed whether it even happened; she could not do anything about it since she could not always follow the livestock. Unable to solve the problem through private negotiation, Baolidao turned to the county-level Grassland Monitoring Station for a solution. He asked “What is the purpose of ecological resettlement? The state says that it is for the rehabilitation of the rangeland. I asked the officers if they would take action or not (about the invasion of my sisters’ animals).” However, the officer suggested that he should negotiate with his sister or he should catch the invasion activities as they happened and then call the officers to come. “How can I get the time to watch in the field every day? Is that not their job?” When I interviewed Gaowa later, she admitted that her herds went onto Baolidao’s rangeland sometimes but she defended herself “Animals have four feet. How can we control where they go all the time? Are we supposed to bind their feet?” Resenting the free-riding, Balidao thought the best solution was to erect
fences but he could not afford it. Nevertheless, five years after his resettlement, his rangeland was fenced by the local government when new funding was allocated from the state for follow-up activities of ecological resettlement.

While resettled households were worried about or resented the free grazing of their pastures by their non-participant neighbours, many non-participant households like Gaowa assumed that the participants would not mind their occasional use because that had happened in the past. Although most non-participants admitted that they used resettled families’ rangelands from time to time, they also emphasised that their herds grazed most of the time on their own pastures. Many non-participants also emphasised the inevitability of grazing on the participants’ rangelands due to the nature of livestock and the features of the physical environment. The need of big livestock for a large space makes it hard to limit their movements within the household boundaries. As is also illustrated in the first story, this activity used to be socially accepted but has received increasing complaints from the families with no big animals or participant households. Moreover, non-participant interviewees said that the narrow shape of the rangeland plots made it difficult not to cross border to the participants’ lands, especially on the way to a well. It can also be seen from Figure 16 that some non-participant households’ plots are between participant neighbours. This makes it extremely difficult for them to carry out their herding especially if fences are set up. In general, a fundamental belief among the interviewees which justified their free use of others’ rangelands including enclosed ones was that, as I have discussed in Chapter 7; the users did not think their use of the enclosed rangelands would undermine the condition of the rangelands. Additionally, an extreme view of non-participant households even justified that, since the resettled households had received compensations based on their rights to rangelands, the continuing old practices of using others’ rangelands did not hurt the interests of the resettled households. Above all, the spatial flexibility of rangeland use became even more constrained after ecological resettlement due to the fragmentation of social and economic interests.

Negotiating re-inclusion in the practice of pastoralism

As a result of the two resettlement projects, pastoralists became dispersed in three places: the pastoral villages, Resettlement Village S and City Q. However, the enclosure of participant households’ rangelands does not mean that they no longer have a role in rangeland use and pastoralism. On the contrary, it was found in the field that most participant households sought to continue engagement in rangeland use in direct and indirect ways. This section analyses the strategies participant households used to get re-included in the practice of pastoralism, the mechanisms through which they negotiated re-
inclusion, and the reasons for them to seek re-inclusion. The pursuit of re-inclusion is interpreted as an adaptation to environmentalisation.

The strategies for achieving re-inclusion

Two strategies were found from the interviews to have been used by participant households to continue their involvement in pastoralism: return migration and contracting out of livestock. Return migration has been reported by previous empirical studies of ecological resettlement (Du 2009; Qi 2006; Taogesi 2007). It is often interpreted as a sign of failed establishment in the resettlement destination. However, these studies do not make a detailed effort to find out how and why people return to their origins. In the first project of this study, all the 22 interviewed participant households were still keeping livestock while they were in Resettlement Village S. Fourteen of them arranged this within their extended families by keeping some members to take care of livestock on their own rangelands or on relatives’; three of them contracted their livestock to non-participant households; two of them hired labourers to take care of the livestock on their own rangelands; one took the few livestock to Village S; and only two households sold all of their livestock before moving. As I have analysed in Chapter 7, moving to Resettlement Village S was basically a livelihood diversification strategy. For those who kept livestock on their own rangelands, this was enabled by the varied enforcement of the grazing ban. It seemed that, despite rules claimed to forbid herding on the enclosed rangelands, only enclosed rangelands near the main roads and in village B were totally prohibited from use and they were often fenced. Return migration to the enclosed home pastures became an open and justified action following the local state’s decline of support in Resettlement Village S in 2003. This was also how the unsuccessful resettled pastoral households justified their return to their pastoral homes even though doing so broke the agreement they had signed. The local government seemed to accept the justification and actions of the pastoralists since it did not take any actions to stop them from returning and using the rangelands.

Two years after the second project, according to the survey done by City Q government in 2009 (City Q Ecology Office 2009a), only 95 participant households out of the total 180 were actually living in City Q by December 2009, and 40 households were reported to have returned and to be living in the pastoral villages. Return pastoralists restarted either herding or working for others in the pastoral villages. Although they were not allowed to use their own lands, it was observed in the field that they did try to use them secretly. Besides living on their own rangelands, return households had four ways of staying on non-participants’ rangelands. The first was to stay free on friends or relatives’ rangelands which neighboured their rangelands and re-start management of their herds at the same time. They mostly herded their
animals on their own rangelands, on which grazing was prohibited. The use was very opportunistic. As one interviewee told me, if patrol officers happened to inspect, they would at once move back to the neighbours’ lands and at the same time claim that the livestock belonged to the neighbours. The officers might fine the neighbour for overstocking but the fine would be covered by the real owner of the livestock. The interviewed people claimed that it was still a good business even if they were fined if one compared the fine for 30-50 yuan per sheep to a sheep’s market value of at least 1,000 yuan. The second way was to rent a non-participant household’s rangeland and restart herding. The non-participant households often did not use their rangeland or had few animals. The third way was to work for a non-participant household. I have given the example of the family of Sarina which, instead of moving to the city, took their herds to move to the land of a non-participant household and at the same time worked for that household. In some cases, the participant households also needed to pay fees to the owner for using resources such as water. The fourth way was to live on collective rangelands. However, since grazing is forbidden on collective rangelands, the households which made opportunistic use of them chose collective rangelands where were remote and difficult for patrol officers to access.

The other strategy, contracting out livestock to non-participant households, is more common among resettled households. The local government was actually quite aware of this widespread arrangement. The sumu government work report in 2007 stated that nearly 95 per cent of households in Resettlement Village S had livestock in the pastoral villages (Xilitu Sumu 2007). According to my interviews, almost none of the resettled households sold all of their livestock when they moved to the city if they had owned livestock before. They all kept at least fifty animals. The forms of the contracting arrangement have many variations. A quite common practice was that, the interested two parties would sign a paper agreement, which stated the number, composition, age and quality of the livestock, the terms of payment, and the period of contracting. The interviewees emphasise that such arrangements are preferably made for the long term and with familiar people. Otherwise, there is a risk that the contractor will get bad quality livestock when the contract terminates. Migrant interviewees gave at least three reasons for keeping livestock: for consumption, for supplementing income, and for resuming pastoralism in the future. To use migrant Daoerji as an example, each year he was paid 200 yuan per small animal from his contractee. With around 50 animals, he could receive nearly 10,000 yuan a year. The level of the payment was also pushed up by the increase in livestock prices. The contractee owned all the baby livestock but Daoerji would get back the same number, composition, age and similar quality of livestock when he wanted to terminate the contract. With the rise of livestock price, it also made more economic sense to keep rather than consume one’s own
livestock; and consumption need was fulfilled instead through purchase from the market or non-migrant herders.

The stocking rate rule is in theory a limit to the practice of contracting out livestock. Interviewee Suhe said that his contractee took his livestock into account while calculating the number of animals that are permitted according to the size of the contractee’s rangeland. However, other interviewees suggested that, due to the loose inspection, the contracted livestock were usually beyond the stocking rate limit of the contractees. Gaowa’s case illustrates the latter situation. She kept 50 sheep for her brother Baolidao who had moved to the city. Both of them felt it was natural and unproblematic to do this but Gaowa talked about the risk of being fined by the local authority. In the autumn, when the county Animal Husbandry Bureau started to make the annual herd survey, Gaowa anxiously phoned Baolidao to ask what to do with his livestock. Baolidao then turned to the village leader, a relative, for help. The latter said it would be alright just to notify the officers. Moreover, Gaowa argued from an economic point of view that, even if overstocking was found by the inspection officers and they insisted on imposing a fine, it was still worth keeping the livestock. This was the same view as that of those who allowed opportunistic grazing by their herds on enclosed rangelands.

As previously mentioned, imposition of fines has been considered by the policy-makers as a key measure for managing grassland. Regarding stocking rate, the 24th item of Xilingol League Vegetation and Livestock Balance Implementation Detailed Rules (Xilingol League Government 2004, Xishufa 2004 No. 10) stipulates different levels of fines and punishment regarding overstocking. While some interviewees complained about the local authority’s incentive to increase income by fining, other interviewees drew attention to the socially negotiated nature of the actual practice. Interviewee Chaolumen said “The local officers responsible for livestock number inspection are very familiar with the pastoral families. They understand the difficulties of pastoralists and would only fine 1,000 yuan or a certain amount for reporting to the upper level of leaders (instead of fining a higher amount according to the rules). If there is going to be a strict inspection directed from the upper level, they would also inform us in advance and then we would temporarily transport our extra livestock to the neighbouring county.”

The mechanisms of negotiating re-inclusion

A continued question regarding the strategies for achieving re-inclusion is how such strategies are enabled and in what specific forms of arrangement. The interviews revealed that some of the strategies kept up the old social arrangements of Mongolian pastoralism and others were based on the new needs emerging in different localities. To temporarily stay free on or rent
another’s rangeland is called ‘going Otor’ by pastoralists. Going Otor is a
traditional mobility strategy for Mongolian herders to cope with the highly
variable and uncertain environment (Xie and Li 2008). Three types of mobi-
ity can be identified depending on the distance of movement: daily mobility,
seasonal mobility and disaster mobility. The notion of going Otor was used
by pastoralists in my study area to describe seasonal and disaster mobility,
even though researchers mainly use the notion to refer to disaster mobility.
Going Otor was very common before the 1980s and was coordinated by
village level and county-level leaders. Although better infrastructure and
availability of market-supplied feedstuff have reduced the need for going
Otor due to adverse weather, going Otor is still used as one of the most im-
portant coping strategies.113 This practice used to be unconditional and open
to any pastoralist in need. The feeling of obligation is based on an assumed
reciprocity that if one is in the same situation in the future, he or she can get
the same kind of help. Nowadays such obligation is limited to people from
the same social network or community. Social ties are the foundation of such
arrangements. To use the same notion of going Otor to refer to the arrange-
ments of temporarily staying free on or renting another’s rangeland after
ecological resettlement implies that to pastoralists they share similar moral
and social values. However, the increasing sense of rangeland as a private
property and the divergent interests among pastoralists tend to commodify
the conditions of using others’ rangelands.

The strategy of contracting out livestock is also nothing new. This is an-
other old Mongolian practice, called Surug. In Mongolian pastoralism, Surug
is one of the traditional informal institutional arrangements to contract herds
between Mongolian pastoralists (Dai 2006; Fernandez-Gimenez 1999). In
the study area, people used to contract out livestock when their pasture was
or the weather were not good so that they could maintain a minimum number
of animals; and they would also contract in others’ livestock for a certain
period of time in order to increase the number of animals in a shorter time
when their pasture was good or after a loss in disaster years. Pastoralists still
refer to the arrangement of contracting livestock between participants and
non-participants as Surug. However, it is a long-term arrangement rather
than temporary. The practice of Surug is actually contested in the context of
the transition of the pastoralist population from subsistence to a market
economy, especially upon the absence of the owners who are dwelling in
urban areas in Mongolia. While critical voices suggest it results in negative
consequences such as rangeland degradation and labour exploitation, re-
searchers such as Fernandez-Gimenez (1999) state that such an arrangement

113 This has also been discussed in Chapter 7 while analysing the coping strategies of pastoral-
ists to environmental problems. According to Xie and Li (2008), in 2006 when heavy drought
occurred in Sunite Left Banner of Xilingol League, 23 per cent of households with 47 per cent
of livestock used Otor to maintain their livestock.
is rather a reflection of the reciprocal relations and culturally accepted norms. In this study, I found that migrant households contracted out livestock not just to earn money, but also for consumption and as a way to resume pastoralism. For the sake of their rangelands, contractees did not accept as many livestock as possible. Most importantly, instead of exploiting contractees, contractors were quite dependent on contractees to enable such a practice. Therefore, even though Surug does help migrant households to get another source of income, the main foundation of it is reciprocity.

Moreover, there are other types of reciprocity-based mechanism which are intended to bridge needs across rural-urban spaces after ecological resettlement. Arrangements can take various forms to match the different needs in different localities. A migrant family in the city helped a non-migrant friend to take care of the children’s schooling in City Q while the non-migrant family in exchange took care of the herds of the migrant family. In another example, a non-migrant stored the slaughtered sheep in a migrant’s fridge in the city because there was no stable power supply in the pastoral village. In return, the non-migrant helped to raise some of the migrant’s livestock.

The reasons for seeking re-inclusion in pastoralism

In this section, I further analyse why the participant households sought to be re-included in pastoralism. I identify two reasons from the interviews: the aspirations for the future and the needs to secure a livelihood. The aspiration to return to the pastoral areas after the expiration of the ecological resettlement agreement was an important reason for some families. As I have analysed in Chapter 7, some families only participated in the project to relieve temporary social economic needs. Some families also had a strong desire to move back after feeling displaced in the city. Most of the families felt secure if they had livestock in the pastoral areas, since it gave them the possibility of returning if they wanted to do so in the future. The need to secure a livelihood is the other important reason for migrant households to seek re-inclusion in the pastoral areas. Connections with the home communities and non-migrant households constitute the most important forms of social and economic capital for migrant households. Fortunately the use of such connections in this case is luckily enabled by the proximity of the destination to the origin.

To many resettled households, compensation and other income were not enough to sustain a decent urban life. Nearly all the interviewees complained about the low level of grassland compensation and the difficulties of finding well-paid and stable employment in the city. The family income level of resettled households was lower compared to the local urban residents. The per capita income among the resettled household was less than 15,000 yuan,
which was 5,000 yuan less than the average City Q urban resident’s income in 2009. The survey ‘Resettled households’ family income’ conducted by the City Q Ecological Office (City Q Ecological Office, 2009b) shows that the two largest sources of resettled households’ income were employment-based earnings (43 per cent) and grassland compensation (37 per cent) (see Figure 19). Various kinds of subsidies from the government contributed to 13 per cent of the income, among which four per cent was directly related to ecological resettlement. Therefore, ecological-resettlement-related income took 41 per cent of a household’s income; nearly as much as employment income. Some families also received payment based on rangeland resources, for example, compensation for land occupation for building a wind farm averaged three per cent of the income. In total, land-tenure-based incomes (grassland compensation + ecological-resettlement-related subsidies + rangeland-related income) took 44 per cent of a family’s income. This means that the income of resettled households were very dependent on policy and very dependent on rangeland holding.

![Figure 19](image)

*Figure 19. Annual income structure of an average resettled household, 2009. Source: Statistics from City Q Ecology Office, 2009b.*

A further analysis of the local government’s survey shows that the income level among resettled households varied significantly: the richest family had a household income of more than 200,000 yuan per year but more than 80

---

114 Ecological-resettlement-related subsidies refer to subsidies provided based on the status of ecological resettlement migrants, which include job training and support subsidy and education subsidy. Non-ecological-resettlement-related subsidies refer to subsidies provided irrelevant to the status of ecological resettlement migrants, which include low income subsidy, family planning and Red Cross subsidy, disaster subsidy, medical care subsidy and others.
per cent of the resettled households with 76 per cent of the resettled population only had below 60,000 yuan per year (see Table 21). Moreover, low income households were even more dependent on rent income and non-ecological-resettlement-related subsidies, and less on employment income.

**Table 21. Annual income levels of resettled households.**

<table>
<thead>
<tr>
<th>Annual household income (yuan)</th>
<th>Number of households</th>
<th>Household cumulative percentage</th>
<th>Number of persons</th>
<th>Persons’ cumulative percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>10,000-19,999</td>
<td>16</td>
<td>100%</td>
<td>24</td>
<td>100%</td>
</tr>
<tr>
<td>20,000-29,999</td>
<td>32</td>
<td>91%</td>
<td>78</td>
<td>96%</td>
</tr>
<tr>
<td>30,000-39,999</td>
<td>44</td>
<td>73%</td>
<td>118</td>
<td>82%</td>
</tr>
<tr>
<td>40,000-49,999</td>
<td>34</td>
<td>49%</td>
<td>119</td>
<td>60%</td>
</tr>
<tr>
<td>50,000-59,999</td>
<td>22</td>
<td>30%</td>
<td>79</td>
<td>39%</td>
</tr>
<tr>
<td>60,000-69,999</td>
<td>16</td>
<td>18%</td>
<td>66</td>
<td>24%</td>
</tr>
<tr>
<td>70,000-79,999</td>
<td>6</td>
<td>9%</td>
<td>28</td>
<td>12%</td>
</tr>
<tr>
<td>80,000-89,999</td>
<td>4</td>
<td>6%</td>
<td>18</td>
<td>7%</td>
</tr>
<tr>
<td>90,000-99,999</td>
<td>1</td>
<td>3%</td>
<td>5</td>
<td>6%</td>
</tr>
<tr>
<td>100,000-199,999</td>
<td>4</td>
<td>3%</td>
<td>14</td>
<td>3%</td>
</tr>
<tr>
<td>200,000 and above</td>
<td>1</td>
<td>1%</td>
<td>3</td>
<td>1%</td>
</tr>
</tbody>
</table>

Source: Statistics from City Q Ecology Office, 2009b.

As the above statistics show, the contribution of employment to resettled households’ income was quite small, which has challenged the policymakers’ vision of transforming pastoralists into urban workers. Moreover, given that earnings from herding and working for others in the pastoral villages were also counted as employment, the above share of employment income was higher than that contributed by city-based employment. Many pastoralists had difficulty in getting stable and well-paid jobs. Statistics published by City Q Ecology Office one year after the second project started show that about one third of the 347 resettled pastoralists of working age (18-49) were unemployed (see Figure 20). Women also had a higher unemployment rate than men except in the age group 18-29. While the male unemployment rate was quite similar across all age groups, female unemployment was significantly higher in the age group 30-39. Nevertheless, more than half of the employed people only had daily odd jobs.

The interviewees agreed that it was easier for young people to find jobs such as interpreters in the local trade markets. Not only were young people better educated and more used to urban life but they also had better social networks in the city. Bilingualism in Mandarin and Mongolian gave them an advantage over people from Mongolia in City Q as regards getting jobs in business. This was said to be especially true of women and their ability to
find stable employment. Nevertheless, it could not explain why women in the age group 30-39 were much less employed. Opportunities for doing odd jobs often came up and access to them was firmly linked to social relations. A lack of social networks, especially related to Han people, disadvantaged middle-aged resettled pastoralists. Male pastoralists above 30 years old often ended up in the low-end sectors of the occupational hierarchy, such as construction due to their lack of education and skills. Even in the low-end sectors, they had to compete with hard-working Han migrant workers.

![Figure 20. Unemployment rate of resettled pastoralists by sex, 2007.](source: Statistics from City Q Ecology Office, 2007b.)

Taking Baolidao as an example, a man in his 40s who could speak fluent Chinese, he had thought it would be easy to find a stable job in the city before he moved to City Q. However, unable to find a fixed job, he had to pick up any available temporary jobs, and several at the same time sometimes. When I visited him for the first time in 2008, he was working on a construction site in the daytime and as a factory guard every night until midnight. However, by the time I revisited him after half a year, he had lost both of the jobs. He had also worked for a heating supply company for a few months but the salary of more than 10,000 yuan had still not been paid. He had not been able to find another job for two months, which he ascribed to the oversupply of Han migrant workers in the city. The interviewees agreed that there was a small group of successful migrants with their own restaurants or shop businesses who were often reported by the local government as successful examples of ecological resettlement. However, they disagreed that their success was the result of ecological resettlement since they had moved to the city before the second project started, not as participants in the projects. Although the local government claimed it offered support in getting employ-
ment as is mentioned in Chapter 6, interviewees said the support was mostly given to people with a good relationship to local cadres.

**Figure 21.** Employment of resettled pastoralists at working age, 2009.

**Figure 22.** Price index of the produce, 2002-2010.
Note: Price in 2002 =100.
Additionally, some interviewees complained about work in the city being disciplined, with strict rules, which was different to their freedom when engaged in herding. Therefore, these migrants also wanted to return temporarily to the pastoral areas to take up work opportunities. For example, in the busy spring season of sheep shearing, migrant pastoralists returned to the pastoral villages to work for friends or relatives, and they could receive payment based on their work load. The trend of returning to the pastoral villages to make a living was clearly addressed in the ‘Survey report on the current situation of resettled pastoral households’ (City Q Ecology Office 2009a). As Figure 21 shows, 44 per cent of the 378 resettled pastoralists of working age actually returned to work in pastoral villages in 2009: 23 per cent worked for non-participant households to herd and 19 per cent resumed herding their own livestock while two per cent worked in sand excavation. The people working for others and herding their own livestock sharply increased compared to 2008 when the respective shares were only eight per cent and three per cent.

The statistics are thus in line with the findings from the interviews which address different strategies that resettled households attempted to deploy to be re-included in pastoralism. The local government’s survey (City Q Ecological Office 2009a) gives a push-pull explanation for the trend: on the one hand, the global economic crisis negatively affected business with Mongolia and many relevant temporary work opportunities in businesses disappeared, while on the other hand, good rainfall in the years 2006-2008 combined with rise in produce prices made pastoralism a more attractive business. The price trend of produce in the last decade shows that the prices of cattle, sheep and goats all increased rapidly after 2006 (see Figure 22). Migrants who were without stable employment in the city were accordingly those who returned.

Conclusion

This chapter has analysed the impact of environmentalisation on the practice of Mongolian pastoralism through investigating two groups of processes. One group of processes drives the territorialisation of rangelands and the other group enables migrant households’ continued participation in pastoralism. In the first group of processes, land privatisation embodies the technologies and mechanisms of environmentalisation to produce material effects on rangeland use. Ecological resettlement gives a driving force for further institutionalizing household-based land tenure. Nevertheless, a basic contradiction is that while HRS and privatisation of rangelands have attempted to decentralise the power of land management to individual households, local authorities are empowered after ecological resettlement to constantly monitor, assess and control households’ land use and livestock management. Certification, mapping, identification of boundaries in the field, and fencing are
continuously carried out to clarify household boundaries; meanwhile, these technologies have to some extent been successful in cultivating a sense of private ownership and boundaries in the minds of pastoralists. Compensations and other economic values associated with the rangelands have also increased the idea of rangelands as a commodity in pastoralists’ minds. This is a different view from previous studies on land reform in China which mostly argue that people show absolute resistance to land privatisation. Accordingly, I see that further fragmentation of the pastoral landscape through mobile pastoralism is not only the consequence of government policy but more importantly the outcome of changing social relations due to the rising sense of household boundaries among pastoralists. Tensions are most apparent between participant and non-participant households. Basically, ecological resettlement divides interests between participant households and non-participant ones and challenges a fundamental principle of previous ways of rangeland use - reciprocity. This is also an important difference from previous studies which only talk about the agency of pastoralists to mitigate rangeland fragmentation.

In the other group of processes, resettled households have sought to be re-included in the practice of pastoralism. This means that, contrary to policymakers’ assumption, moving out of their own rangelands does not terminate resettled households’ use of rangeland resources. Varied strategies have been deployed by participant households; including returning to the pastoral villages to resume herding, or contracting out livestock to non-migrant households. These strategies generate direct and indirect impacts on rangeland use and pastoralism. The mechanisms which enable these strategies draw attention to the old social arrangements in the practice of Mongolian pastoralism such as going Otor and Surug and the new ones which have sought to address emerging needs in different localities. Although social ties and reciprocity were the foundation of these arrangements, the tendency of commodifying the relations should not be ignored. Migrant households sought re-inclusion in pastoralism because of their aspiration to return in the future, and more importantly, because they needed to secure their livelihood. Similar to other projects, as I discussed in the introduction, resettled pastoral households were burdened with the costs of a consumer lifestyle in the city. The majority poor encountered particular difficulty. Dependence on compensation, difficulties in getting stable employment, and the rise in produce prices together drove pastoralists to turn to the pastoral villages in order to make a decent living. Compared to previous studies, the analysis of the processes of seeking re-inclusion in the practice of pastoralism not only contributes a new understanding on the effect of ecological resettlement but also gives a new perspective on how the agency of the resettled people could transform the outcomes of the state’s interventions.

Above all, this chapter has demonstrated that ecological resettlement has followed the old policy logic of producing a more individualised pastoral
landscape through the facilitation of more advanced technologies. However, the objectives of depopulation and destocking have encountered great challenges from the re-inclusion of migrant pastoralists in the practice of pastoralism. Urbanisation to boost the economy through consumption might work if the resettled are able to meet the costs of the city lifestyle (Johnson 2013). The findings here suggest that their ability to make such payments would still be dependent on their income from the rural areas.
9. Conclusions

China's quest for sustainable development has given rise to sweeping changes in environmental governance over the last decade. The actions, ranging from launching the sandstorm source control programme to the recent carbon trade schemes, from enclosing rural lands to building eco-cities, from reforming domestic environmental protection agencies to signing bilateral agreements on climate change, suggest a restructuring of how the Chinese state governs the environment, a process I call environmentalisation. In this thesis, I have sought to explore ecological resettlement in relation to the ongoing environmentalisation, and to make sense of governmental strategies, the enactment of such strategies and their effects. Specifically this case study focuses on examining ecological resettlement in a pastoral township of the Inner Mongolia Autonomous Region where the measure was intended to combat the grassland degradation problem that was blamed for posing the threat of sandstorms to the national capital, Beijing. As a critical response to the dominant technical and managerial approaches in analysing ecological resettlement and more broadly state-led greening actions in China, I have claimed there is a need to examine the issue through the lens of power. This means that my entry point already associates ecological resettlement with social and political perspectives. Drawing on debates and insights mainly from political ecology studies to frame my analysis, I have carried out step-by-step inquiries of ecological resettlement from demonstrating the environmentalisation of the state to contesting the materialisation processes and finally to problematising the implications for sustainability. This has also been a process of drawing out the politics of the formulation, implementation and effects of ecological resettlement at different scales and across scales.

Revisiting the research questions

I have attempted to answer three interrelated questions: how ecological resettlement manifests China’s transforming environmental governance, how ecological resettlement is locally implemented, and finally how the implementation affects the practice of Mongolian pastoralism. In response to the first question - How is environmentalisation of the state operationalised?
through ecological resettlement? - I argue that ecological resettlement illustrates an apparent environmentalisation process of the Chinese state. Through analysing policy materials in Chapter 5, I demonstrate that this process is composed of practices with mixed forms of multi-scaled discourses/knowledge to render the environment governable, and with systematic application of interventional technologies to act on the environment. Specifically, grassland is constructed as a type of site in need of governing interventions and the construction has been conducted through articulating three groups of discourses: the threat/security scenario, degraded but restorable grassland, and ecological knowledge. A new trend is that, parallel to the dominance of grand perceptions and orthodox reasonings in political texts, the state has been devoted to incorporating science-based ecological knowledge to legitimise its views and interventions since the 2000s. Nevertheless, its selective incorporation of ecological knowledge excludes the contested views on desertification and grassland degradation. Moreover, the environmentalisation process has a significant spatial dimension which has driven reterritorialisation and the reconfiguration of relationships between western China and other areas. The territory of western China is primarily positioned as a provider of ecological services to the east, and the prime interest of the old frontier Inner Mongolia to the state and the national capital has been redefined as an ‘ecological security shelter’.

The environment is also reconstituted into an object whose problem is only solvable through the state’s technocratic ‘ecological construction’. My analysis further addresses how the technologies related to ecological resettlement are deeply structured by two contexts, the Western Development Strategy and the emerging way of managing the national environmental territory. On the one hand, the preferred technologies of modernisation, industrialisation and urbanisation in the Western Development Strategy are carried out in ecological resettlement through moving people from the rural to the urban. On the other hand, old technocratic fixes have been rationalised and re-organised in ‘zoning’, a new reterritorialisation technology that the state is promoting to imagine and rule its rural spaces. I conclude the question by highlighting four characteristics of the environmentalisation of the Chinese state: the central state’s role is shifting from being a detailed instructor to a distant supervisor; environmentalisation is tending to redistribute power and resources among authorities which however raises conflicts of interests; and offering fiscal transfer has become a key mechanism for the central state to enforce its environmental will even though the mechanism may actually create barriers to achieving the environmental objectives; and quantification is a widely used instrument for making the environment knowable and actable and for evaluating the performances of local politicians.

The second question shifts the focus to a more specific local context to explore - How is environmentalisation taken forward through local imple-
mentation of ecological resettlement projects? The answer draws attention to both strategies on the local state’s side and the affected pastoral households’ side. It is composed of two sub-questions. The first sub-question, asking how the idea of constructing an ecological security shelter was translated into views, actions and strategies in the implementation of ecological resettlement projects, is addressed in Chapter 6. Empirical findings in the study area of Xilitu Sumu demonstrate that due to decentralisation the county level government has great power in determining the specific ways of carrying out the projects. Construction of Resettlement Village S and later construction of the resettlement neighbourhood F in city Q are preferred by local politicians so as to visually demonstrate the efficiency of local implementation so as also to add value to their political performance. The local objectives concerning economic restructuring, promotion of non-farming activities and urbanisation closely follow the approaches of the Western Development Strategy even though the sustainability of the practices raises serious questions.

My research shows that the local state has deployed two types of strategies to mobilise pastoral households to participate in the projects: a carrot-and-stick strategy and a strategy of transforming the subjectivities of the people. The carrot strategy which focused on creating economic and social incentives to ‘pull’ people to the new destinations was mainly used with the supplementation of the stick strategy to threaten pastoralists with the restrictions of pastoral production. By promoting the future of becoming a modern dairy farmer in the first project and a modern urban citizen in the second project, the local state has attempted to create aspirations among and transform the subjectivities of the pastoralists. The dependence on these strategies rather than coercion, especially the second type of strategy, demonstrates an on-going shift of the state’s interventional approach. The developmental attempts reflected in the above actions and strategies are motivated by three types of mechanisms set up in the top-down political system. First, ecological resettlement is a political project through which the local state has to accomplish tasks and to demonstrate achievements. The simplified measure of local performance by the upper levels based on the number of resettled households and the size of enclosed rangelands unfortunately tends to marginalise the local state’s concerns for the environmental objectives. Second, offering fiscal transfers has proved to be an effective mechanism to motivate the local governments to compete for its area being chosen as the site of carrying out specific projects. Third, the multiple roles – i.e. more than a governor - that the local state plays tends to put business interests above the environmental objectives in practices. Rent seeking and corrupt behaviours are even involved.

Related to the findings from the previous research question, the findings in Chapter 6 suggest that, different from the central state’s strategic construction of the environment as a governable object, the local process of
environmentalisation lacks locally based environmental initiatives. Instead, the local state refers to the upper level state’s environmental discourses and designation of the local area’s environmental functions as a way of showing political compliance and as a strategy for claiming allocation of resources from above. That is, the local state is pragmatically oriented towards economic interests which nevertheless are short-sighted as regards the effects of ecological resettlement.

The second sub-question explores how the affected pastoral households responded to environmentalisation through migration decision-making. The findings draw attention to the varied levels of agency of the affected pastoral households in response to the local state’s call for participation in the projects. Interviewees’ narratives reveal that household migration decisions were based on different forms of strategies, especially in the second project which included rejection, negotiation, accommodation and manipulation. While concerns about household livelihood are fundamental to migration decision-making, the narratives draw more attention to the linkage of economy, society, and the environment in migration decision-making through local manifestations of power. Through setting up the incentive structures and delivering the modern visions, the local state has to some extent been successful in cultivating the modern subjectivities of some pastoralists because they entered an ‘alliance’ with the state’s will to pursue the vision of developmentalism. Interviewed households also suggested the relevance of a group of social, economic, political and demographic factors to their participation decisions in the second project. The statistical analysis of the register data sample provided evidence for the effects of several household-level factors including the number of sub-households, performance of herd management and number of labourers on participation decisions but analysis of the register sample only showed the effect of performance of herd management. Such results might be caused by the small size of the interview sample, how the sample was selected and the lack of information from some households on several of the variables. Even though the analysis does not provide very extensive statistical evidence for the effects of the factors, the suggested relationships still help build a conceptual model for mapping the patterns of household migration decision-making. I argue that this model, which classifies the households into four exclusive types, as Warrior, Explorer, Watcher and Follower, offers a more complex tool for assessing the positions of individual households in the face of resettlement. The categorisation of individual households into specific types and changes between the types in this study draw attention to the risk of increasing inequality as the negative consequences of incentive-based policy approach of ecological resettlement.

Ironically, environmental degradation which was addressed as the reason for introducing the environmental measures, was not the most important consideration in the narratives of household migration strategies. Unlike
mainstream studies of environmental migration which frame environment as one type of condition that drives migration, this analysis argues that the environment-migration relationship in the local projects is situated in a gap between the discourses and images at the upper scales and the lived reality in the local place because local pastoralists have different environmental perceptions and coping strategies from the state and think tank scholars. This finding also implies that the state has not been successful in transforming the environmental subjectivities of pastoralists.

The third question - *How does environmentalisation affect the practice of Mongolian pastoralism?* – is explored through investigating two groups of processes. One group of processes drives the territorialisation of rangelands and the other group enables migrant households’ continued participation in pastoralism. The policy of ecological resettlement tends to drive further institutionalisation of household-based land tenure but it sets up a basic contradiction in which HRS and privatisation of rangelands have attempted to decentralise the power of land management to individual households, and local authorities are empowered after ecological resettlement to constantly monitor, assess and control households’ land use and livestock management. The practice of mobile pastoralism is limited not only by enclosure and fencing and subsequent fragmentation of the pastoral landscape but more importantly by the changing social relations, especially between participant and non-participant households due to the rising sense of household boundaries.

Therefore, I argue that land privatisation embodies the technologies and mechanisms of environmentalisation to produce material effects on rangeland use. Nevertheless, in the other group of processes, contrary to policymakers’ assumption that depopulation and destocking would occur by moving pastoralists out of their own rangelands, migrant households have adopted varied strategies to be re-included in the practice of pastoralism, either by returning to the pastoral villages to resume herding, or by contracting out livestock to non-migrant households. Old social arrangements of practising Mongolian pastoralism, such as going Otor and Surug, set up the foundation for practicing the strategies. This suggests that the “continual social and political renegotiation” (Turner 1999:122) involved in sustaining Mongolian pastoralism gives resilience to the pastoral community upon ecological resettlement. In addition, new needs emerging in different localities also drive arrangements between migrant and non-migrant households. The major driving force behind the processes is the difficulties for pastoral households to sustain their livelihood in the city. Therefore, the re-inclusion of migrant households in pastoralism suggests a trend towards livelihood diversification strategies and multi-locality livelihood strategies. Nevertheless, the findings also suggest a tendency of stratification and dissolution of pastoral communities in the advance of the market economy, which is addressed as a general challenge to global pastoral communities nowadays (Humphrey and Sneath 1999).
Operationalising the concept of ‘environmentalisation’

By providing a political ecology analysis of ecological resettlement, this study has demonstrated how this policy measure is a manifestation of a broad and fundamental process – environmentalisation. I have used much empirical evidence to demonstrate environmentalisation as an on-going phenomenon but I also take environmentalisation as a concept and have sought to operationalise it. In the following text, I will reflect on my attempt at operationalizing the concept and the contribution this had towards a deeper understanding of the concept. The term ‘environmentalisation’ is most often used in sociological literature to characterise the historical processes of internalisation of environmental concerns. Buttel distinguishes it from ‘greening’ which is a broad social force, and thinks that environmentalisation means “the concrete processes by which green concerns and environmental considerations are brought to bear in political and economic decisions, in educational and scientific research institutions, in geopolitics, and so on.”, and it is “thus the concrete expression of the broad force of greening in institutional practices” (1992:2). While Buttel mainly examined environmentalisation through the lens of institutional change, more recent sociological studies have highlighted the constitution of social conflicts surrounding the adaptation of environmental discourses and incorporation of environmental justifications to legitimate institutional, political and scientific practices, which means environmental issues are framed as a new source of legitimisation and argumentation (Acselrad 2010). At this point, the idea of environmentalisation meets the view of political ecologists who think it is essential to look into power relations in the processes so as to scrutinise the actual consequences of the green actions which are otherwise taken for granted as being good for the environment as the believers in ecological modernisation promote (Muldavin 2007). As I have sought to draw on political ecology theories for my analysis, i.e. the changing ways of understanding power and power relations in governing the environment, the construction of environmental knowledge, and multi-scalar analysis, I have sought to operationalise the concept of environmentalisation in relation to these ideas. My operationalisation involves three types of analysis: environmentalisation of the state, reshaping of state-society relations, and (re)territorialisation.

Environmentalisation of the state is the first type. The analysis relates different groups of thoughts on China’s political structure and analytics of government to explore how governmental power challenges or works with the old forms of sovereign and disciplinary power to configure the process of environmentalisation. What I have shown in this study is that, unlike many developing countries, the Chinese state demonstrates considerable power by launching environmental initiatives. This is similar to what it is called an
authoritarian model of environmentalism, or “environmental authoritarianism” (Gilley 2012), which has the advantage of producing a rapid and centralised response to environmental threats. My findings have identified similar features to the authoritarian model such as exclusion of public participation, dependence on expert knowledge and bureaucratic decision-making, institutionalisation, and centrality of existing structures of state domination. However, instead of evaluating the effectiveness of the authoritarian model as environmental policy analysis often does, I choose to unpack the process – to learn about what has changed with the state practices in the process of environmentalisation. Instead of using terms such as “environmental state” and “state environmentalism”, I adopt the notion of “environmentalisation of the state” so as to highlight my focus on the transforming ways of doing, broader than institutional changes. Drawing on Foucault’s idea of “governmentalisation of the state” (Dean 2010:267), the notion of ‘environmentalisation of the state’ refers to a long-term trajectory by which the exercise of sovereignty in the environmental domain comes to be articulated through the regulation of populations and individuals.

An analytics of government directs me to look into the adoption of environmental discourses/knowledge, the embodied rationalities and logics, and the technologies and mechanisms that enable the incorporation of discourses/knowledge. My analysis has shown how grassland degradation is rationalised as a threat to the welfare of the population and has to be solved through regulating the behaviours of the population. Therefore, the environment has been transformed into a knowable and governable object; and technologies have been deployed for “governing at distance”. My analysis also shows that the emergence of ecological arguments is not separated from but rather simultaneously intertwined with political-economic arguments. The process of environmentalisation is a strategy linked to urbanisation, modernisation and industrialisation for governing rural transformation and economic growth. In the process of the Chinese state’s environmentalisation, some old ideologies continue to stand with new environmental discourses. Together they render rural land and people as objects and subjects of governmental actions. Typically, despite policy- makers reflecting on the destructive results of grassland reclamations driven by Mao’s ideology of ‘humans conquer the nature’ (Shapiro 2001), the current attempt to improve grassland continues to pursue a similar construction approach. Moreover, the direct technocratic interventions under the umbrella of the current notion of “ecological construction” seem to reflect the difference between socialist and liberal governmentality: China’s socialist governmentality thinks that “through the science of Marxism-Leninism it was possible not only to ‘know’ the object to be governed, but also to predict the precise outcome of any possible intervention” while liberal governmentality accepts a concept of limited government (Jeffreys and Sigley 2009:6-7).
In Foucault’s view, government does not replace sovereignty and discipline but rather “recasts (sovereignty and discipline) within this concern for the population and its optimisation, and the forms of knowledge and technical means appropriate to it” (Dean 2010:30). Therefore, I have sought to analyse the role of political structures and institutional changes in the light of governmental power: how the state re-organises its system and reforms its institutions are still considered important for structuring the trajectory but they are viewed within the frame of governing strategies. My analysis of the environmentalisation of the Chinese state suggests that this process generates its own characteristics when governmental power drives the old political structures (such as fragmented authoritarianism (Lieberthal 1997) and decentralisation (Economy 2004; Jiang 2006; Wu 2009; Xun and Bao 2008)) to generate new mechanisms, new relations and new dynamics within the multi-scalar state. In contrast to a common view in decentralisation studies that sees an absolute decline in the central state power (Benewick 1998; Brown et al. 2008), I argue that, in the field of environmental governance, the central state has actually retained a centralised role through practicing governmental strategies such as producing guiding discourses/knowledge, setting up approaches, making master plans, formulating rules and determining technologies. Its role is not as a detailed instructor but a distant supervisor. Bureaucratisation and professionalisation are the means to facilitate the practices of governmental strategies, although tensions and conflicts induced by redistribution of power and resources between administrative units at different scales and across scales reflect the high presence of the fragmented political structure.

The state has also sought to align the conduct of the local state with the state’s will through new mechanisms such as better institutionalisation, more quantifiable evaluation measurement and offers of fiscal transfers. By moving down the analytical optics towards the local scale, one can find that the practices of the local state are still primarily bound to repressive mechanisms. Ecological resettlement is first of all considered as a political task to accomplish and the political performances of local politicians are evaluated based on accomplishment of the quota for resettling people and enclosing rangelands, and the plans of the project per se. On top of that, offers of fiscal transfers provide the main incentive for the local state to welcome ecological resettlement projects to the area. This mechanism allows lower levels of government to be responsible for the upper levels even though at the same time the local state tends to be less accountable to the local society, which creates a problematic phenomenon of ‘floating government’ (Zhou 2006). Moreover, the local state refers to the upper level state’s environmental discourses and designation of the local area’s environmental function as a way of showing political compliance as well as a strategy for claiming the allocation of resources from above. These findings suggest that the central state not only depends on the authoritarian top-down approach to enforce its di-
rectives but also seeks to deploy neoliberal forms of governmental power to motivate and manipulate the lower levels of government to “exhibit appropriate behaviours” by creating external incentive structures (Fletcher 2010:173). However, the downside of the approach is that the project-based model induces problems of corruption, rent-seeking and short-sighted actions of ecological restoration.

The second type of analysis addresses the changing state-society relations because upon environmentalisation state-society relations are reconfigured around an axis of environmental resource management. This study shows that two structures, land tenure and the Hukou system, constitute the fundamental means for the state to control, regulate and differentiate the locals. On top of the structural mechanisms, the state agencies also endeavour to manage rural people and spaces in new ways, reconfiguring resources and relationships. Empirical findings demonstrate a dialectical reshaping of the state-society relationship: in multiple ways the state attempts to create, intervene and transform the subjectivities of the people meanwhile in varied ways the people seek to adapt, manoeuvre and take advantage of the state’s conduct. In the local projects, the local state attempted to transform pastoralists into modern subjects, first as modern dairy farmers, and then as modern urban citizens. Coercive force was rarely applied and the people were to some extent expected to be governed through regulated autonomy. Economic and social incentives were mainly used to facilitate the transformation but they were also supplemented by repressive strategies such as political mobilisation and threats of restricting resource use. These findings suggest hybrid practices of government in the socialist-neoliberal context of China, with both deployment of neoliberal governmentality which “seeks merely to create external incentive structures within which individuals, understood as self-interested rational actors, can be motivated to exhibit appropriate behaviours through manipulation of incentives” (Fletcher 2010:173) and authoritarian governmentality which aims to “operate through obedient rather than free subjects, or at a minimum, endeavour to neutralise opposition to authority” (Dean 2010:155).

By seeing migration through a power lens, the analysis of the household migration decision-making reveals that, embodied in varied levels of agency among the affected households, migration decisions were based on different forms of strategies. Many affected households tended to take advantage of the ecological resettlement policies to meet their social and economic interests, thereby confirming the effectiveness of neoliberal governmentality. Accordingly, such households somehow took on the same interests as the local government to promote development, especially in the first project. Although there were some seemingly resistant forms of action, these should be interpreted as strategic moves for negotiating better conditions. This is to say that, in the Chinese model of transiting to a market-based economy, there could be an ‘alliance’ between the state’s will and the people’s will to
pursue the vision of developmentalism. However, such an alliance was not stable but has been constantly shaped by the actual consequences of the developmental activities. The people are still likely to turn into resistant subjects but interventions may also create new desires for further interventions. Participant households in this study actually demanded continued interventions from the local state to improve their living conditions. Families facing difficulties in their daily lives after resettlement were especially dependent on the state’s provisions, mainly in the form of grassland compensation, and they looked for continued support from the state. A parasitic relationship between the people and the state seems to have grown. In this way, the dominant role of the state has turned out to be reinforced and strengthened. Some of the interviewees, both from participant households and non-participant ones, directly criticised ecological resettlement for causing loss of economic independence, impairing their ability to make a living, and loss of cultural pride.

I have also tried to understand the reshaping of the state-society relationship through exploring the construction of environmental knowledge. As I have mentioned, the production of environmental discourses/knowledge is very centralised; and the local state has a very small role and interest in it. Perceptions of the grassland degradation problem among local pastoralists however demonstrate a sharp contrast to the state’s discourses. On top of that, pastoralists have also, for a long time, developed different ways of coping with grassland degradation and adverse weather. Therefore, local pastoralists refused to accept the state’s position on ecological resettlement as an effective measure to restore grassland and they did not think environmental factors represented an (important) consideration in their decision on participating in the projects. In this regard, the pastoralists’ ways of understanding the environment have hardly been transformed by the state’s discourses/knowledge. Nevertheless, in a related matter, the sense of household boundaries in the minds of pastoralists has been helped to grow by the continued use of technologies such as certification, mapping, identification of boundaries in the field, and fencing, all of which are intended to territorialise rangelands.

The last aspect that I have analysed to capture the reshaping of the state-society relationship is the re-inclusion of participant households in pastoralism after ecological resettlement. Contrary to the policy-makers’ assumption that moving people out of the pastoral areas would reduce the pressures on grassland use, my empirical findings show that participant households have been able to continue their involvement in pastoralism. The various strategies they have deployed suggest the agency of the people to adapt to and transform the process of environmentalisation.

The third type of analysis I depend on to operationalise the concept of environmentalisation highlights (re)territorialisation. Territorialisation is used in this study to designate spatial practices which (re)order territorial spaces.
Vandergeest and Peluso argue that “all modern states divide their territories into complex and overlapping political and economic zones, rearrange people and resources within these units, and create regulations and delineate how and by whom these areas can be used” (1995:387). Although Foucault defines the shift of focus from territory to population as one of the characteristics of modern government, geographers argue that geo-power, “an ensemble of technologies of power concerned with the governmental production and management of territorial space”, is still a fundamental prerequisite of bio-power (Ó Tuathail 1996:7; Rose-Redwood 2006:470). My findings demonstrate (re)territorial processes at different scales as part of environmentalisation. The territory of western China is first of all positioned by the central state as a provider of ecological services to the east and the national territory; and Inner Mongolia is positioned as an ecological security shelter. Regional and local governments have actively embraced such positioning. Pastoral spaces as part of western China are accordingly redefined from a production base to primarily a source of environmental values. Zoning, the main technique that the state deploys to operationalise ecological construction, organises old and new technocratic fixes to bring new ways of categorizing, regulating, and managing land and human activities in the rural/pastoral spaces. Various types of zoning in making master plans, programmes and strategies, for example, ecological function zoning, zoning in Beijing-Tianjin Sandstorm Source Control Programme, and zoning in Xilingol League’s Weifeng Zhuanyi Strategy, have facilitated territorialisation in the construction of environmental knowledge.

Territorialisation at the local level proceeds through reconfiguring of land tenure, household rangeland boundary and property rights relations. Land privatisation embodies technologies and mechanisms to “control what people do according to detailed land classification criteria” (Vandergeest and Peluso 1995:412). The boundaries between household rangelands are established by a map in the plan of rangeland management after ecological resettlement, by maps in household rangeland certificates, and by use of fencing and border marks in the field. Territorialisation has thus occurred both in the visible and material forms to drive the division and fragmentation of the pastoral landscape, and also in the invisible forms to construct environmental knowledge and to alter the shape of territory in the minds of pastoralists.

A multi-scalar analysis of environmentalisation

This study has sought to demonstrate that environmentalisation is an accumulative top-down process across multiple scales. To human geographers, scale is not an ontologically given category, not a preordained hierarchy for ordering the world, but a constructionist framework, “a contingent outcome of the tensions that exist between structural forces and the practices of hu-
man agents” (Marston 2000). In this study, scale is used in several ways to assist a multi-scalar analysis of environmentalisation. First of all, scale is used to reveal the multiplicity of the processes that shape and constitute social practices at different levels of analysis. The empirical chapters have followed a classical way of using scale both in political ecology (Blaikie and Brookfield 1987) and political science (Lieberthal 1997) to present the general process of ecological resettlement as a structured flow from the top to the bottom of the political hierarchy. They outline the multi-scalar construction of grasslands as a national environmental resource, depending on policies of western development, rural development and land management. Such a presentation also helps to spatialise governmentality and to specify the social-structural location of governing.

However, within this framing way of using scale, I also seek to deepen understanding of the relationship between different scales. Thus, secondly, I draw attention to practices at certain scales which are intended to alter the inter-scale relationship. For example, I analyse how the discourses of an ecological threat/security scenario have driven the reconfiguration of relationships between the local and the centre, between western China and the east, between Inner Mongolia and the national capital, and between the periphery and the core. Thirdly, I address how inter-scalar dynamics are both manifested in the coherence and disjunctures between scales. Environmentalisation depends on the co-working of practices at different scales to progress, for example, as is explained in the previous section, territorialisation advances through plans and knowledge construction at national and regional scales, and also through building a land property regime at the local scale. Also important is that disjunctures, mismatches and even contradictions constitute part of the process, which may create barriers for governing at a distance and may impede the progress of environmentalisation. Environmentalisation is largely driven by phenomena and forces outside local pastoral production rather than locally based environmental initiatives. More specifically, for example, the mismatch between the environmental discourses/knowledge of the state and that of the local pastoralists explains the pastoralists’ refusal to accept the state’s positioning of ecological resettlement as an effective measure for restoring grassland. It also explains the insignificant role of environmental considerations in household migration decision-making in contrast to the assumed driving force of grassland degradation that obliges pastoralists to move. Fourthly, although the general process of environmentalisation is top-down, there are also bottom-up flows which are induced by the incentive mechanisms set up by the upper levels. As I have demonstrated in Chapter 5, the regional levels of government have produced corresponding discourses to actively adapt to the central government’s environmental rationalities and discourses on grassland degradation and the position of the region so as to receive a larger amount of funding for the region.
Implications of environmentalisation for sustainable development

This study suggests that environmental policy is reshaping the pastoral area of China through transforming ways of governing pastoral space, pastoralists and grasslands. Nevertheless, the pastoral seems to persist. In a broader national context, this study could be taken as an illustration of what is happening in rural China (for other emerging studies see, for example, Chen 2013). In the global context, the findings of this study suggest similar consequences of the environmentalisation of rural spaces in both developing and developed countries, the main one being marginalisation of rural communities (Acselrad 2010; Benjaminsen and Svarstad 2008; Marsden 2004). Although the aim of this study is not to evaluate whether ecological resettlement is an effective measure for grassland restoration per se, the findings are intended to present the implications of environmentalisation for the environmental goods. My conclusion is that environmental goods are actually endangered by the process of environmentalisation due to the structures, approaches and interaction modes set up between the central state, local state and the affected people.

The new mechanisms, new relations and new dynamics which seek to make a better governance system and ensure the implementation of environmental policy have not overcome all the barriers of the structural divides. They also risk the marginalisation of the environmental objectives in their implementation. In particular, the cadre performance evaluation and the fiscal transfers mechanisms drive the actions of lower levels of authorities to neglect the actual local environmental consequences. Local authorities tend to take quick but low quality approaches when implementing environmental policies. In my view, it is not a matter of what kinds of incentives are effective for closing the implementation gap as previous studies debate (Cai 2004; Laundry 2008; O’Brien and Li 1999; Ran 2013; Eaton and Kostka 2014) but rather the gap is an intrinsic problem of the authoritarian top-down system.

Environmentalisation has also created a contradiction between the place-based environmental concerns and place-based need of household livelihoods. On the one hand, the dependence on external technocratic interventions, management and resources tends to disempower the local people in decision-making on grassland-related resource use. The environmental concern is externalised. The locals are subjected to restrictive measures while the outsiders, authorities and experts enter to direct the constructive measures for improving the local environment according to systematised rationalities and knowledge. On the other hand, pastoralists’ observations of the local government’s rent-seeking and corrupt behaviours in the projects
make them sceptical about the projects’ concerns with claimed objectives of achieving grassland health and their livelihood improvement.

Moreover, the approach of moving pastoralists out of the pastoral areas actually has a risk of undermining the environment rather than restoring the environment because it promotes commodification of humans’ relations to natural resources. Commodification of land use challenges old practices of pastoralists based on social norms and arrangements. My study also suggests that the top-down approach of environmental policy may contribute to increasing the vulnerability of pastoralists, and their vulnerability may further undermine grassland health. As the analysis in Chapter 8 suggests, new patterns of rangeland use emerge reflecting the various ways that resettled pastoralists seek to be re-included in conducting pastoralism. While they are primarily driven by the need to secure their livelihood, the adaptive ways of using rangelands may undermine grassland health.

Above all, findings of this study suggest that the consequences of ecological resettlement raise new challenges to sustainable development. Some of the consequences may not be intended by the state but they are the consequences of policy practices (see also Jing 2007; Li 2007). Moreover, the unintended consequences also result from the choices and actions of the people while the latter have been conditioned and induced by the state’s new ways of disciplining and regulating its subjects.

**Direction of further research**

In this study, I have sought to combine my interests in environmental governance, migration and pastoralism and take a nuanced integrative approach to examine ecological resettlement. This choice means that I am open to possibilities of combining different methodologies and seek to cross-fertilise the fields. By drawing on theories from the three different themes and relating them to thoughts on political ecology, I have been able to generate new understandings along the following lines which could become the basis for further discussions in their relevant fields. Firstly, different forms of power nurture the environmentalisation of the Chinese state. A political ecology approach helps researchers to go beyond an institutional approach in analysing state power; it takes a critical view of the role of knowledge construction while knowledge facilitates the claimed shift to scientific environmental governance. Moreover, it is able to expose the disjunctures, mismatches and contradictions within the multi-scalar project of a modern state behind the seemingly quick, unified and smooth progress of environmental governance. The ideas behind the political ecology approach help to expand the way of thinking about state power in environmental governance and draw attention to the process, the ‘how’ question. The analysis of the relational dynamics at and across different scales suggests that such an analytical approach may
contribute new understanding of the restructuring of Chinese environmental governance. Secondly, the environment-migration relationship is socially and politically constructed. Given the subordination of the relationship to the environmentalisation process, household strategies in migration decision-making were especially associated with local manifestations of power. This study has proposed alternative conceptual and analytical approaches to explore the links between different factors and household migration decisions. Thirdly, land tenure has been used by environmentalisation as a means of territorialising the pastoral landscape and commodifying social relations. These effects undermine the very conditions required for mobile pastoralism to exist. However, the social principles of Mongolian pastoralism help to give resilience to the pastoral community as it adapts to the changing social environment. This study thus provides a new analytical angle to link the transformation of Mongolian pastoralism to socialist neoliberal modernisation.
Kina har under de senaste 20 åren försökt hitta former för hur ekonomisk utveckling ska kunna förenas med olika typer av hållbarhetsmål. Ett led i denna strävan har varit sjösättningen av storskaliga programme för ekologisk omstrukturering.


Hugo, G. (1996). Environmental concerns and international migration. In-
ternational Migration Review 30 (1):105-131.

Human Rights Watch (2007). ‘No one has the liberty to refuse’ Tibetan herders forcibly relocated in Gansu, Qinghai, Sichuan, and the Tibetan Autonomous Region. 19 (8), 77p.


Xun, L., and Bao, Z. (2008). Government, market and households in the ecological resettlement process: A sociological analysis of ecologi-


Yundannima (2012). *From ‘retire livestock, restore rangeland’ to the compensation for ecological services: State interventions into rangeland...*


Newspaper articles


Government of China documents
Central level


**Provincial level**


**Prefectural level**


**County level**


- (2008a). *The main problems in City Q’s population transfer work.* (In Chinese).


- (2006b). ‘One to one’ support and assistance employment and entrepreneurship implementation plan. (In Chinese).

Township level
## Glossary

<table>
<thead>
<tr>
<th>Chinese</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caoxu Shuangchengbao Zerenzhi</td>
<td>Rangeland and Livestock Double Responsibility System</td>
</tr>
<tr>
<td>Caoyuan Jianshe</td>
<td>Grassland construction</td>
</tr>
<tr>
<td>Caoyuan Shengtai Baohu Butie Jiangli Jizhi</td>
<td>Grassland Ecological Protection Subsidy and Award System</td>
</tr>
<tr>
<td>Chengxiang Yitihua</td>
<td>Rural-urban integration</td>
</tr>
<tr>
<td>Chengzhenhua</td>
<td>Urbanization</td>
</tr>
<tr>
<td>Difang</td>
<td>Local</td>
</tr>
<tr>
<td>Fenhu</td>
<td>Sub-household</td>
</tr>
<tr>
<td>Fangsha Zhisha Ban</td>
<td>Desertification Prevention and Control Office</td>
</tr>
<tr>
<td>Ganbu</td>
<td>Cadre</td>
</tr>
<tr>
<td>Huabei</td>
<td>North China</td>
</tr>
<tr>
<td>Hukou (Bu)</td>
<td>Hukou (book)</td>
</tr>
<tr>
<td>Jiating Lianchan Chengbao Zerenzhi</td>
<td>Household Responsibility System</td>
</tr>
<tr>
<td>Jianxu, Zenglv, Zhuanren, and Zengshou</td>
<td>Reducing livestock, increasing green, moving people and increasing income</td>
</tr>
<tr>
<td>Jieduanxing Jinmu</td>
<td>Periodical Grazing Ban</td>
</tr>
<tr>
<td>Jinjing Fengshayuan Zhili Xiangmu</td>
<td>Beijing-Tianjin Sandstorm Source Control Programme</td>
</tr>
<tr>
<td>Jinmu Shesi</td>
<td>Grazing Ban and Pen-Raising</td>
</tr>
<tr>
<td>Kaotian Chifan</td>
<td>Being dependent on the sky for food</td>
</tr>
<tr>
<td>Kexue Fazhan Guan</td>
<td>Scientific outlook on development</td>
</tr>
<tr>
<td>Kuai</td>
<td>Functional unit</td>
</tr>
<tr>
<td>Liangzhuang Shuangying</td>
<td>Two changes and double wins</td>
</tr>
<tr>
<td>Nongmuye Jinzhi Kaifa Qu</td>
<td>Agricultural and Pastoral Development Forbidden Area</td>
</tr>
<tr>
<td>Qianchun Fupin</td>
<td>Thousand Village Poverty Alleviation</td>
</tr>
<tr>
<td>Shengtai Anquan (Pingzhang)</td>
<td>Ecological security (shelter)</td>
</tr>
<tr>
<td>Shengtai Ban</td>
<td>Ecology Office</td>
</tr>
<tr>
<td>Mongolian</td>
<td>English</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Gacha</td>
<td>Administrative Village</td>
</tr>
<tr>
<td>Haote</td>
<td>Natural village</td>
</tr>
<tr>
<td>Otor</td>
<td>A mobility strategy of coping with a variable and uncertain environment in Mongolian pastoralism.</td>
</tr>
<tr>
<td>Otindag</td>
<td>Hunshandake</td>
</tr>
<tr>
<td>Sumu</td>
<td>Administrative township</td>
</tr>
<tr>
<td>Surug</td>
<td>A strategy of contracting out livestock in Mongolian pastoralism.</td>
</tr>
</tbody>
</table>
## Appendix 1: Cited interviewees

<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Gender</th>
<th>Age</th>
<th>Educational level</th>
<th>Participant of ecological resettlement project</th>
<th>Place of residence</th>
<th>Time of interview (s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alberg</td>
<td>Male</td>
<td>34</td>
<td>Primary</td>
<td>No</td>
<td>City Q</td>
<td>8th May 2008</td>
</tr>
<tr>
<td>Baolido</td>
<td>Male</td>
<td>43</td>
<td>Secondary</td>
<td>Yes</td>
<td>Pastoral village</td>
<td>17th May 2008</td>
</tr>
<tr>
<td>Betu</td>
<td>Male</td>
<td>40</td>
<td>High school</td>
<td>Yes</td>
<td>City Q</td>
<td>8th May 2008</td>
</tr>
<tr>
<td>Chahairma</td>
<td>Male</td>
<td>25</td>
<td>Secondary</td>
<td>No</td>
<td>Pastoral village</td>
<td>13th May 2008</td>
</tr>
<tr>
<td>Daewji</td>
<td>Male</td>
<td>37</td>
<td>Primary</td>
<td>No</td>
<td>City Q</td>
<td>3rd May 2008</td>
</tr>
<tr>
<td>Gaewa</td>
<td>Female</td>
<td>55</td>
<td>Primary</td>
<td>No</td>
<td>Pastoral village</td>
<td>13th May 2008</td>
</tr>
<tr>
<td>Chobetla</td>
<td>Male</td>
<td>18</td>
<td>Secondary</td>
<td>No</td>
<td>City Q</td>
<td>13th May 2008</td>
</tr>
<tr>
<td>Liadina</td>
<td>Female</td>
<td>46</td>
<td>Primary</td>
<td>Yes</td>
<td>Pastoral village</td>
<td>14th July 2008</td>
</tr>
<tr>
<td>Manglai</td>
<td>Male</td>
<td>59</td>
<td>No</td>
<td>Yes</td>
<td>Pastoral village</td>
<td>12th May 2008</td>
</tr>
<tr>
<td>Qoqge</td>
<td>Female</td>
<td>64</td>
<td>No</td>
<td>Yes</td>
<td>Pastoral village</td>
<td>17th June 2008</td>
</tr>
<tr>
<td>Sarina</td>
<td>Female</td>
<td>51</td>
<td>Primary</td>
<td>Yes</td>
<td>Recettent</td>
<td>17th June 2008</td>
</tr>
<tr>
<td>Sitiin</td>
<td>Female</td>
<td>59</td>
<td>Primary</td>
<td>Yes</td>
<td>City Q</td>
<td>13th May 2008</td>
</tr>
<tr>
<td>Shube</td>
<td>Male</td>
<td>53</td>
<td>Secondary</td>
<td>No</td>
<td>Pastoral village</td>
<td>18th May 2008</td>
</tr>
<tr>
<td>Tasl ligao</td>
<td>Male</td>
<td>61</td>
<td>No</td>
<td>Yes</td>
<td>City Q</td>
<td>24th May 2008</td>
</tr>
<tr>
<td>Temuer</td>
<td>Male</td>
<td>32</td>
<td>Primary</td>
<td>No</td>
<td>Pastoral village</td>
<td>13th May 2008</td>
</tr>
<tr>
<td>Wuiji</td>
<td>Male</td>
<td>29</td>
<td>High school</td>
<td>No</td>
<td>Pastoral village</td>
<td>15th September 2011</td>
</tr>
<tr>
<td>Wunma</td>
<td>Female</td>
<td>34</td>
<td>Primary</td>
<td>No</td>
<td>City Q</td>
<td>12th May 2008</td>
</tr>
</tbody>
</table>

*Primary equals to 6 years education, secondary equals to 7 to 9 years education, and high school equals to to 10 to 12 years education.*
## Appendix 2: Non-cited interviewees

<table>
<thead>
<tr>
<th>No.</th>
<th>Gender</th>
<th>Age</th>
<th>Educational level</th>
<th>Gender of household head</th>
<th>Project 1</th>
<th>Project 2</th>
<th>Place of residence</th>
<th>Time of interview(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Female</td>
<td>35</td>
<td>Secondary</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Pastoral village</td>
<td>29th April 2008, 7th June 2008, 14th July 2008</td>
</tr>
<tr>
<td>2</td>
<td>Male</td>
<td>28</td>
<td>Secondary</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Pastoral village</td>
<td>1st May 2008, 7th May 2008</td>
</tr>
<tr>
<td>3</td>
<td>Female</td>
<td>49</td>
<td>Primary</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Pastoral village</td>
<td>1st May 2008, 7th May 2008</td>
</tr>
<tr>
<td>4</td>
<td>Male</td>
<td>45</td>
<td>Primary</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Pastoral village</td>
<td>1st May 2008, 7th May 2008</td>
</tr>
<tr>
<td>5</td>
<td>Male</td>
<td>35</td>
<td>Secondary</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Pastoral village</td>
<td>1st May 2008, 7th May 2008</td>
</tr>
<tr>
<td>6</td>
<td>Female</td>
<td>38</td>
<td>Primary</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Pastoral village</td>
<td>1st May 2008, 7th May 2008</td>
</tr>
<tr>
<td>7</td>
<td>Female</td>
<td>52</td>
<td>Primary</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Pastoral village</td>
<td>1st May 2008, 7th May 2008</td>
</tr>
<tr>
<td>8</td>
<td>Female</td>
<td>45</td>
<td>Secondary</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Pastoral village</td>
<td>1st May 2008, 7th May 2008</td>
</tr>
<tr>
<td>9</td>
<td>Male</td>
<td>45</td>
<td>Secondary</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Pastoral village</td>
<td>1st May 2008, 7th May 2008</td>
</tr>
<tr>
<td>10</td>
<td>Female</td>
<td>45</td>
<td>Secondary</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Pastoral village</td>
<td>1st May 2008, 7th May 2008</td>
</tr>
<tr>
<td>11</td>
<td>Female</td>
<td>30</td>
<td>Primary</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Pastoral village</td>
<td>1st May 2008, 7th May 2008</td>
</tr>
<tr>
<td>12</td>
<td>Male</td>
<td>37</td>
<td>Secondary</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Pastoral village</td>
<td>1st May 2008, 7th May 2008</td>
</tr>
<tr>
<td>13</td>
<td>Male</td>
<td>40</td>
<td>Secondary</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Pastoral village</td>
<td>1st May 2008, 7th May 2008</td>
</tr>
<tr>
<td>14</td>
<td>Male</td>
<td>48</td>
<td>Secondary</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Pastoral village</td>
<td>1st May 2008, 7th May 2008</td>
</tr>
<tr>
<td>15</td>
<td>Male</td>
<td>50</td>
<td>Primary</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Pastoral village</td>
<td>1st May 2008, 7th May 2008</td>
</tr>
<tr>
<td>16</td>
<td>Male</td>
<td>54</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Pastoral village</td>
<td>1st May 2008, 7th May 2008</td>
</tr>
<tr>
<td>17</td>
<td>Male</td>
<td>48</td>
<td>Secondary</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Pastoral village</td>
<td>1st May 2008, 7th May 2008</td>
</tr>
<tr>
<td>18</td>
<td>Male</td>
<td>58</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Pastoral village</td>
<td>1st May 2008, 7th May 2008</td>
</tr>
<tr>
<td>19</td>
<td>Female</td>
<td>48</td>
<td>Secondary</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Pastoral village</td>
<td>1st May 2008, 7th May 2008</td>
</tr>
<tr>
<td>20</td>
<td>Male</td>
<td>65</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Pastoral village</td>
<td>1st May 2008, 7th May 2008</td>
</tr>
<tr>
<td>21</td>
<td>Male</td>
<td>43</td>
<td>Primary</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Pastoral village</td>
<td>1st May 2008, 7th May 2008</td>
</tr>
<tr>
<td>22</td>
<td>Male</td>
<td>29</td>
<td>High school</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Pastoral village</td>
<td>1st May 2008, 7th May 2008</td>
</tr>
<tr>
<td>23</td>
<td>Female</td>
<td>40</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Pastoral village</td>
<td>1st May 2008, 7th May 2008</td>
</tr>
<tr>
<td>24</td>
<td>Male</td>
<td>84</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Pastoral village</td>
<td>1st May 2008, 7th May 2008</td>
</tr>
<tr>
<td>25</td>
<td>Female</td>
<td>43</td>
<td>Primary</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Pastoral village</td>
<td>1st May 2008, 7th May 2008</td>
</tr>
<tr>
<td>26</td>
<td>Female</td>
<td>43</td>
<td>Primary</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Pastoral village</td>
<td>1st May 2008, 7th May 2008</td>
</tr>
</tbody>
</table>
Appendix 2: Non-cited interviewees (cont.)

<table>
<thead>
<tr>
<th>No.</th>
<th>Gender</th>
<th>Age</th>
<th>Educational level*</th>
<th>Gender of household head</th>
<th>Participant of ecological resettlement project</th>
<th>Place of residence</th>
<th>Time of interview(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>27</td>
<td>Male</td>
<td>46</td>
<td>Primary</td>
<td>Male</td>
<td>Yes No</td>
<td>City Q</td>
<td>24th June 2008, 13th January 2009</td>
</tr>
<tr>
<td>28</td>
<td>Female</td>
<td>46</td>
<td>Primary</td>
<td>Male</td>
<td>Yes Yes</td>
<td>City Q</td>
<td>24th June 2008</td>
</tr>
<tr>
<td>30</td>
<td>Male</td>
<td>32</td>
<td>Primary</td>
<td>Male</td>
<td>Yes Yes</td>
<td>Resettlement Village S</td>
<td>10th July 2008</td>
</tr>
<tr>
<td>31</td>
<td>Female</td>
<td>45</td>
<td>Primary</td>
<td>Male</td>
<td>No No</td>
<td>Pastoral village</td>
<td>11th July 2008</td>
</tr>
<tr>
<td>32</td>
<td>Female</td>
<td>34</td>
<td>Secondary</td>
<td>Female</td>
<td>Yes No</td>
<td>Pastoral village</td>
<td>11th July 2008</td>
</tr>
<tr>
<td>33</td>
<td>Male</td>
<td>48</td>
<td>Secondary</td>
<td>Male</td>
<td>No No</td>
<td>Pastoral village</td>
<td>12th July 2008</td>
</tr>
<tr>
<td>34</td>
<td>Female</td>
<td>35</td>
<td>Primary</td>
<td>Male</td>
<td>No No</td>
<td>Pastoral village</td>
<td>12th July 2008</td>
</tr>
<tr>
<td>35</td>
<td>Male</td>
<td>35</td>
<td>Secondary</td>
<td>Male</td>
<td>No No</td>
<td>Pastoral village</td>
<td>11th July 2008, 15th September 2011</td>
</tr>
<tr>
<td>36</td>
<td>Male</td>
<td>50</td>
<td>Secondary</td>
<td>Male</td>
<td>No No</td>
<td>Pastoral village</td>
<td>30th April 2008, 10 July 2009</td>
</tr>
<tr>
<td>37</td>
<td>Female</td>
<td>62</td>
<td>Primary</td>
<td>Female</td>
<td>Yes No</td>
<td>Pastoral village</td>
<td>16th May 2008</td>
</tr>
<tr>
<td>38</td>
<td>Female</td>
<td>64</td>
<td>No</td>
<td>Female</td>
<td>No No</td>
<td>Pastoral village</td>
<td>15th September 2011</td>
</tr>
<tr>
<td>39</td>
<td>Male</td>
<td>59</td>
<td>Primary</td>
<td>Male</td>
<td>No No</td>
<td>Pastoral village</td>
<td>19th September 2011</td>
</tr>
<tr>
<td>40</td>
<td>Male</td>
<td>25</td>
<td>High school</td>
<td>Male</td>
<td>No No</td>
<td>Pastoral village</td>
<td>18th September 2011</td>
</tr>
<tr>
<td>41</td>
<td>Female</td>
<td>23</td>
<td>High school</td>
<td>Male</td>
<td>No Yes</td>
<td>City Q</td>
<td>9th May 2008</td>
</tr>
<tr>
<td>42</td>
<td>Male</td>
<td>40</td>
<td>Primary</td>
<td>Male</td>
<td>No No</td>
<td>Pastoral village</td>
<td>13th July 2009</td>
</tr>
<tr>
<td>43</td>
<td>Male</td>
<td>62</td>
<td>Secondary</td>
<td>Male</td>
<td>No No</td>
<td>Pastoral village</td>
<td>14th January 2009, 17 September 2011</td>
</tr>
<tr>
<td>44</td>
<td>Male</td>
<td>62</td>
<td>Secondary</td>
<td>Male</td>
<td>Yes Yes</td>
<td>Pastoral village</td>
<td>8th May 2008, 13 July 2009</td>
</tr>
<tr>
<td>45</td>
<td>Male</td>
<td>20</td>
<td>High above</td>
<td>Male</td>
<td>Yes Yes</td>
<td>Resettlement Village S</td>
<td>17th January 2009</td>
</tr>
<tr>
<td>46</td>
<td>Female</td>
<td>40</td>
<td>Primary</td>
<td>Male</td>
<td>No No</td>
<td>Pastoral village</td>
<td>1st July 2008</td>
</tr>
<tr>
<td>47</td>
<td>Male</td>
<td>55</td>
<td>Primary</td>
<td>Male</td>
<td>No No</td>
<td>Pastoral village</td>
<td>13th July 2009</td>
</tr>
<tr>
<td>48</td>
<td>Male</td>
<td>60</td>
<td>Primary</td>
<td>Male</td>
<td>No No</td>
<td>Pastoral village</td>
<td>13th July 2009</td>
</tr>
<tr>
<td>49</td>
<td>Male</td>
<td>57</td>
<td>Primary</td>
<td>Male</td>
<td>No No</td>
<td>Pastoral village</td>
<td>17th September 2011</td>
</tr>
<tr>
<td>50</td>
<td>Female</td>
<td>25</td>
<td>High school</td>
<td>Male</td>
<td>Yes No</td>
<td>Pastoral village</td>
<td>13th September 2011</td>
</tr>
<tr>
<td>51</td>
<td>Female</td>
<td>22</td>
<td>High school</td>
<td>Male</td>
<td>No No</td>
<td>Pastoral village</td>
<td>19th September 2011</td>
</tr>
<tr>
<td>52</td>
<td>Male</td>
<td>50</td>
<td>Primary</td>
<td>Male</td>
<td>No No</td>
<td>Pastoral village</td>
<td>19th September 2011</td>
</tr>
</tbody>
</table>

* Primary equals to 1 to 6 years' education, secondary equals to 7 to 9 years' education; and high school equals to 10 to 12 years' education.
Stockholm Studies in Human Geography


Note: Number 1–24 included in Acta universitatis Stockholmiensis.