Sustainable Households: Environmental Policy and Everyday Sustainability

Final report to the Swedish Environmental Protection Agency from the SHARP research program

SHARP (Sustainable Households: Attitudes, Resources and Policy) is a five-year multi-disciplinary research program on household behaviour and environmental policy. In this report the main results as well as the policy implications from the research are summarized.

The objectives of the research have been to: (a) investigate the role of households and household behaviour in achieving environmental policy objectives; (b) analyse the constraints that households face when performing environmental activities, and how they organise and integrate these activities in daily life, given these constraints and given their environmental attitudes and values; and (c) clarify the circumstances under which environmental policy instruments will be effective and perceived by households as legitimate.

The research is methodologically based on a combination of context-dependent studies (such as time diaries, in-depth interviews, field experiments etc.) and broader studies based on large data bases and survey studies directed at a large representative sample of households. The majority of the empirical studies focuses on conditions in four Swedish municipalities: Göteborg, Huddinge, Piteå, and Växjö.

The research was conducted during the time period 2003–2008, and has been funded by the Swedish Environmental Protection Agency and the research council Formas. The program comprises six social science projects, which involve researchers from Luleå University of Technology, Linkoping University, Umeå University and the University of Karlstad.
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Foreword

Households play an essential role in Swedish environmental policy. Consequent upon the ever increasing focus on individual responsibility for environmental problems as internationally adopted through Agenda 21, Swedish environmental policy has an explicit objective to increase and maintain active, individual responsibility for the environment.

The Swedish Environmental Protection Agency financed SHARP (Sustainable Households: Attitudes, Resources and Policy), a research program in the social science, with a view to studying: how environmental policy impinges on the everyday lives of households; the controlling factors behind households' environmental choices; and which implications can be derived for designing future policy instruments. The SHARP program received additional funding from the Swedish Research Council Formas.

The final report was written by SHARP researchers and edited by the program coordinator, Professor Patrik Söderholm (Luleå University of Technology). The researchers are solely responsible for the contents of the report, which does not necessarily reflect the opinions of the Swedish Environmental Protection Agency.

The present report builds on a translation of the original Swedish report. The translation has been conducted by Proper English.

Stockholm, November 2011
Swedish Environmental Protection Agency
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Sammanfattning


Detta innebär sammantaget att samhällsvetenskaplig forskning om hushållens miljöbeteenden inte blir meningsfull såvida inte normer, värderingar, attityder samt de hinder som hushållet möter i vardagen analyseras integrerat. En mångvetenskaplig ansats är dessutom nödvändig för att nå ökad kunskap om hur svenska hushåll uppfattar och agerar efter olika styrmedel och politiska målsättningar. SHARP-programmets målsättningar har varit att:

- undersöka den roll som hushållen och hushållsmedlemmars vardagsbeteenden spelar för att uppnå miljöpolitiska målsättningar;
- analysera de hinder och drivkrafter som kringgärder miljövänliga aktiviteter i vardagen, samt undersöka hur hushållen väljer att integrera dessa aktiviteter i vardagslivet givet de hinder och attityder som hushållsmedlemmarna ger uttryck för; samt
- klargöra under vilka omständigheter olika miljöpolitiska styrmedel kan vara effektiva samt uppfattas som legitima utifrån hushållens perspektiv.

Forskningen har undersökt miljöpolitikens generella utformning och dess betydelse för hushållens vardagsaktiviteter men har också fokuserat delar av de empiriska undersökningarna på tre specifika aktiviteter: källsortering, inköp av ”gröna” produkter samt färdmedelsval. Metodologiskt bygger forskningen – till skillnad från många tidigare studier – på en kombination av kontextnära studier (t.ex. tidsdagböcker, djupintervjuer, fältexperiment) samt bredare undersökningar baserade på t.ex. stora databaser samt ett antal enkätstudier riktade till ett stort antal representativt utvalda hushåll.

I syfte att stärka såväl den akademiska som den praktiska relevansen av den forskning som bedrivits har en referensgrupp (expertpanel) kopplats till SHARP-programmet. Referensgruppen har bestått av externa vetenskapliga
forskare, representanter för Naturvårdsverket, samt tjänstemän från fyra noggrant utvalda kommuner: Göteborg, Huddinge, Piteå och Växjö. De empiriska studierna fokuserar starkt (men inte fullt ut) på hushåll och styrmedel i dessa fyra kommuner. Denna avgränsning har möjliggjort en djupare analys av de lokala kontexter och utrotsättningar i vilka de olika styrmedlen ofta implementeras, men den har också erbjudit möjligheter att diskutera forskningsresultaten med tjänstemän som dagligen jobbar med de aktuella frågorna.

Denna rapport sammanfattar de viktigaste resultaten och lärdomarna från forskningsprogrammet samt ger en inblick i de vetenskapliga studier som genomförts under programperioden (2003–2008). Nedan presenteras de viktigaste policylärdomarna från forskningen; dessa presenteras dels i en övergripande del och dels i en aktivitetsspecific del. De generella lärdomar för en miljöpolitik med hushållen i blickfånget som programmet identifierat är bl.a.:

- Möjligheten att styra hushållen (direkt) via tvingande lagstiftning är begränsad. Medborgarna betraktar visserligen inte alltid personlig integritet och självbestämmande som överordnad miljöskyddet, men vagt formulerade och allmänt hållna miljökrav har konsekvenser för rättsäkerheten och därmed också för legitimiteten.
- Rätten fyller däremot en viktig funktion genom kontroll av aktiviteter som utförs av andra än hushållen men som har stor betydelse för hur dessa agerar från miljösynpunkt, såsom företags tillverkning och marknadsföring av kemikalier och kommunernas fysiska planering.
- Förekomsten av sociala och personliga (moraliska) normer spelar en viktig roll för att förklara miljövänligt agerande på hushållsnivå (se också nedan), men samtidigt finns det gränser för hur mycket ett uttalat fokus på individuellt ansvar kan åstadkomma miljöanpassningen av samhället. Kollektiva åtgärder – t.ex. investeringar i infrastruktur och fysisk planering – är nödvändiga för att underlätta ett miljövänligt beteende på hushållsnivå. Miljömedvetenheten är i allmänhet relativt hög hos hushållen, men strukturer och resurser saknas ofta.
- Den sociotekniska kontext (t.ex. samhällsplanering) som kringgärder hushållens vardag har idag – och har också historiskt haft – en tydlig inverkan på svenska hushålls konsumtionsmönster, och detta stärker behovet av en miljöpolitik som utreder och belyser möjligheterna att påverka denna kontext. En effektiv politik för hållbar utveckling bör således rikta uppmärksamheten på hur flera olika politikområden (t.ex. bostadspolitik, penningpolitik, trafikpolitik) påverkar – direkt eller indirekt – hushållens vardagsbeteende.
- Såväl ekonomiska som moraliska förklaringsfaktorer är viktiga för att förstå hushållens vilja att göra miljövänliga val i vardagen; det är samtidigt viktigt för politiken att undvika situationer där dessa två motiv ’rängra undan’ – utan snarare förstärker – varandra.
- Enlig ovanstående anledning kan policypaket, där flera styrmedel samverkar, vara ett bra sätt att fånga upp den i personlig moral
grundade motivationen att ta ett miljöansvar samtidigt som nödvändiga resurser tillförs. Detta bör inte minst vara viktigt då det gäller samspelet mellan ekonomiska och informativa styrmedel där betydelsen av personligt ansvarstagande kan lyftas fram samtidigt som tydliga ekonomiska incitament ges.


- För att kunna förena olika dimensioner av hållbar utveckling såsom den sociala och den ekologiska måste hänsyn tas till såväl vem som förväntas genomföra föreslagna aktiviteter, som hur de genomförs i hushållet. Detta innebär bland annat att inte heller miljöpolitiken kan frigöra från frågor som rör jämställdhet mellan könen.

Det finns flera sätt på vilka miljövänliga hushållsaktiviteter kan främjas. I rapporten lyfter vi fram en del generella lärdomar för införandet av explicita politiska åtgärder, men det är också viktigt att ta hänsyn till de specifika förutsättningar som kännetecknar olika typer av aktiviteter. Följande policyimplikationer från forskningen inom SHARP förtjänar att nämnas:

- Problemmvedutenhet, en positiv syn på den egna förmågan att påverka utfallet, social påverkan, och rimliga uppoffringar utgör viktiga faktorer som – i kombination – påverkar hushållens vilja att ta ett personligt ansvar för miljön i vardagen samt utföra relaterade aktiviteter. Dessa resultat gäller såväl källsortering och inköp av miljömärkta produkter som hushållens färdmedelsval, och styrkan i dessa faktorer kan till stor del förklara varför hushållens aktivitet skiljer sig väsentligt åt mellan dessa tre områden (t.ex. varför hushållen är duktiga på att källsortera men sämre på att åka buss).

- I fallet med källsortering har moraliska styrmedel samt en väl utbyggd infrastruktur viktiga roller att spela för att skapa engagement bland hushållen. Ekonomiska incitament (t.ex. viktbasierade avgifter) samt ytterligare infrastrukturella åtgärder som underlättar källsortering i vardagen (t.ex. fastighetsnära insamling) är generellt sett effektiva för att åstadkomma ökad källsortering.

- Riktade informationsinsatser mot nyanlända invandrare och yngre personer kan vara effektiva. Informativa styrmedel kan också dra nytta av de resultat som visar att om människor tror att andra hushåll är duktiga på att källsortera tenderar man själv också att vara det. Även på kommunnivå finns tecken på sådana positiva spridningseffekter. Information som lyfter fram t.ex. duktiga bostadsområden kan således öka källsorteringen totalt.

- Vi bör vara försiktiga med att dra för långtgående paralleller mellan den relativa framgång som kännetecknar källsorteringen i Sverige och potentialen för att uppmuntra till aktivt ansvarstagande på andra områden. Källsorteringen upplevs vara enkel att integrera i
det dagliga livet, medan andra åtgärder (t.ex. reducerad bilanvändning) ställer långt större krav på förändringar i det sätt som hushållen valt att organisera sin vardag.

- Det finns gränser för hur långt man kan nå i miljöarbetet med hjälp av miljömärkning. Denna typ av styrmedel innebär ofta en stark individualisering med stora krav på egna bedömningar medan miljöfrågan ofta förutsätter kollektiva ställningstaganden. Utbudet av varor spelar dessutom en minst lika viktig roll för att andelen miljömärkta varor ska öka.

- Det är väsentligt att hushållen är övertygade om att deras val av miljömärkta varor faktiskt spelar roll i sammanhanget, både att de påverkar besluten hos de relevanta aktörerna (t.ex. elbolagen) och att dessa beslut också leder till miljöförbättringar. Den nuvarande frånvaron av ett sådant förtryck och utbudet av miljöerättigheter är mycket viktiga för att hushållen vill köpa miljömärkt elektricitet.

- I vissa fall är det mer effektivt att göra konsumtionen "grönare" genom att förbättra varor på gemensamt snarare än individuellt ansvar. Det kan ofta vara mindre komplicerat att bygga upp acceptans för sådana system (så länge alla förvántas bidra) än att förlita sig på individuella, frivilliga val. Hushållen accepterar i mångt och mycket att miljöfrågan handlar om kollektiva val, som i viss mån begränsar individens möjligheter.

- På transportområdet skulle ett tydligare agerande från stat och kommun bidra till att stärka de samhälleliga normerna i syfte att minskas bilanvändningen. Signalerna från samhällets sida behöver bli mer enhetliga. Starkare sociala normer är också viktiga.

- Bilanvändare upplever överlag att passande alternativa färdmedel saknas och det finns en negativ uppfattning om kollektiva färdmedel. Det är därför nödvändigt att kontinuerligt arbeta för att förbättra möjligheterna att använda alternativa färdmedel, såväl kollektivtrafik som cykel och gång.

- En effektiv – och ofta mer accepterad – strategi för att motverka en vanemässig bilanvändning är att kombinera förbättringar av alternativa färdmedel med så kallade push-åtgärder som direkt motverkar bilanvändningen.

- På transportområdet finns idag utrymme för att aktivera starkare personliga normer. Detta kan åstadkommas med individuellt anpassad information om t.ex. alternativa färdmedel, samt information som ökar hushållens problemedvetenhet, inte minst om de lokala miljöeffekterna av personbilstrafiken.

- Överlag finns det skäl att i politiken tydligare betona kopplingen mellan minskat bilresande och personliga motiv såsom förbättrat hälsa.
Summary

SHARP has been a five-year multi-disciplinary research program on household behaviour and environmental policy. It builds on three observations. First, the implementation of environmental policies requires people’s active involvement. Many of the existing and new environmental obligations are therefore expressed in household-related activities such as sorting of waste and the active choice of “green” products and services. Second, strong environmental attitudes and values are often claimed to be common among Swedish citizens, and in general people claim that they are willing to undertake a number of household-related activities that promote a sustainable environment. Still, these attitudes do not always translate into daily behaviour. Third, different policy instruments, such as information campaigns, fees and regulations, are used to make households behave in line with environmental policies and intentions. For such policy tools to become effective, however, politicians and practitioners need an improved understanding of how policies interplay with household values, attitudes and the constraints (in terms of time, money and knowledge) that they face in daily life. If a specific policy measure conflicts with household attitudes and/or their way of organizing, for example, recycling activities little will be gained.

In essence, the study of households’ ‘sustainable-promoting’ behaviour will not be meaningful unless norms, values, attitudes and the relevant constraints of the households are analysed in conjunction. A multi-disciplinary approach is thus necessary for gaining an improved understanding of how households perceive and, hence, comply with governmental policies and intentions. Since its inception the overall objective of the SHARP program has been to analyse the integration of household activities and attitudes into the forming of an environmentally sustainable society. Specifically, the program has aimed at:

- investigating the role of households and household behaviour in achieving environmental policy aspirations;
- analyzing the constraints that households face when engaging in environmental activities, and how they organize and integrate these activities in their everyday life given these constraints and given their environmental attitudes and values;
- using this information to clarify under what circumstances different policy instruments aimed at promoting activities that support a more environmentally sustainable society will be effective and perceived as legitimate.

Empirically the program has focused on three partly interrelated household activities: (a) waste sorting and recycling behaviour; (b) the active purchasing of green products; and (c) transport choice behaviour. Our overall methodological approach differs from many earlier studies in that it combines analyses based on intensive structuring, involving deep interviews time-diaries, and
travel diaries with more extensive information about attitudes, behaviour and constraints gathered via surveys from a large number of households and via statistical analyses of large databases.

In order to ensure both the academic and the policy relevance of the research conducted a reference group (expert panel) has been attached to the SHARP program. This panel has comprised external scientific representatives, two analysts from SEPA (Swedish environmental protection agency) as well as officials from four carefully selected municipalities; Gothenburg, Huddinge, Piteå and Växjö. The empirical investigations have been strongly (but not solely) focused on households in these four municipalities. This approach had added to the understanding of the local contexts within which environmental policy aspirations presently are being implemented, but it has also provided opportunities to discuss the research findings with relevant practitioners.

This report summarizes the main research findings and policy implications of the program, and provides some background information on the research studies conducted during the program period (2003–2008). The policy implications from the research are presented below and we have chosen to divide these into one general and one activity-specific section. The general lessons for environmental policy targeting household behaviour include:

- The potential for direct legal enforcement and control of households’ activities is likely to be limited. A lot of Swedes believe that sometimes environmental protection needs to be prioritized before personal integrity and freedom of choice. Nevertheless, the law provides mainly generally held environmental requirements and vague formulations, and for this reason strict legal enforcement may impede legal security and reduce policy legitimacy.

- By contrast, the law plays an important role in the control of activities carried out by others than households but indirectly affecting household behaviour from an environmental point of view, such as industrial production and marketing of chemical products and physical planning of infrastructure, waste deposits etc.

- Social and personal norms play an important role in explaining the prevalence of environmentally friendly activities (see also below), but at the same time individual responsibility has its limits. Collective measures – e.g. investment in infrastructure as well as physical planning measures – are often needed to promote environmentally friendly activities for which otherwise the personal sacrifices become too burdensome.

- The consumption patterns of Swedish households are – and have been – strongly influenced by different (often government-promoted) socio-technological systems. This strengthens the importance of investigating the possibilities to influence the physical contexts in which household consumption takes place, including the role of other policy areas (e.g. housing policy, monetary policy, traffic policy).
- Economic and moral motives tend to play important roles in influencing households’ choice to undertake environmentally friendly activities; it is important to avoid situations in which these two motives ‘crowd-out’ – but rather strengthen – each other.
- For the above reason different policy instruments could preferably be presented in ‘policy packages’ rather than in isolation. This is likely to be particularly important in the case of economic and informative policy instruments, where the importance of individual norms could be highlighted while at the same time providing explicit economic incentives.
- The daily lives of households are strongly time- and context dependent, and it may therefore be worthwhile to – as far as possible – provide tailor-made environmental information to households.
- The social and ecological dimensions of sustainable development must be addressed in combination. Household activities involve “negotiations” at the household level concerning, not the least, who does what and how. One important implication of this is that environmental policy also involves important gender issues.

The promotion of environmentally friendly behaviour at the household level can be done in a number of ways. A few general lessons for policy are highlighted in the report, but often policy makers must also address the activity-specific circumstances. The results from the SHARP Program suggest the following policy implications:

- Problem awareness, a positive perception of one’s own ability to affect environmental outcomes, social influences and reasonable sacrifices are factors that – in combination – induce people to take active individual responsibility for the environment and undertake any related activities. These results apply equally well to waste sorting, the purchasing of labelled products and choice of transportation mode. The strength of these factors largely explains why individual action differs a lot across these three areas.
- In the case of household waste sorting activities, strong personal norms are prevalent and the physical infrastructure is often in place to facilitate households’ efforts. Economic incentives (e.g. weight-based waste collection fees) and facilitating measures (e.g. property-close collection systems) have clear positive impacts on recycling rates.
- Targeted information campaigns in the recycling field towards young people and newly arrived immigrants could be effective. Overall future information campaigns could also make use of the fact that the perception of intensive recycling activities in other households (and even municipalities) tends to have positive ‘spill-over’ effects. Informing about positive outcomes in specific neighbourhoods could thus induce increases in overall recycling activities.
• One should be careful in drawing strong parallels between the relative success of many household recycling programs and the potential for encouraging active individual responsibilities in other areas (e.g. reduced car use). Waste sorting typically involves limited personal sacrifices, and can easily be integrated into the current ways of organizing the daily activities of households.

• The potential for using environmental labels of products and services as a means to promote sustainable consumption patterns may be limited. The cognitive demands of individual choices become significant while the greening of products largely is a collective undertaking involving – not the least – producer initiatives.

• An important strategy to promote households’ purchase of “green” products involves convincing – e.g. through information campaigns – individuals that their choices matter for environmental outcomes. The current lack of such conviction represents an important explanation for why household participation in green electricity schemes is so low.

• In many cases (e.g. green electricity) it is more effective to achieve more sustainable consumption patterns by emphasizing shared rather than individual responsibilities. It is often less complicated to convince people about the presence of positive environmental outcomes (as long as all are required to participate), and households often accept collective solutions even though these also limit the individual freedom of choice.

• In the transport field, the difficulties experienced in bringing about reduced car use among Swedish households depend largely on mixed signals from policy makers both nationally and locally. Stronger societal and social norms are therefore needed in this area.

• Households who use cars often express that they lack suitable alternative means of transportation, and they perceive public transport systems as unattractive. This suggests that consistent efforts to improve the possibilities to employ other modes of transportation (e.g. bicycle, train, bus etc.) are necessary.

• An effective – and often more accepted – way of reducing habitual use of car transport is to combine push- and pull-strategies, i.e. actively implement policies to discourage car use while at the same time facilitating the use of alternative modes of transportation.

• There is also room for activating stronger personal norms for reduced car use. Important strategies could preferably involve targeted information campaigns about, for instance, alternative transport modes, as well as information that raise households’ problem awareness, not the least about the local environmental impacts of car use.

• Overall a stronger emphasis on the relationship between reduced car use and personal motives – not the least improved personal health – could prove effective.
Research towards sustainable households: an introduction

Research program background, objectives and design

Households play an essential role in Swedish environmental policy with regard to both national and local political strategies. Several studies have shown that while Swedish households express widespread environmental awareness in many contexts and readiness to assume environmental responsibility, that readiness is not always translated into action. Against that backdrop, there is a need for deeper understanding of: (a) how households choose – or choose not – to integrate sustainable activities in daily life; and (b), how policy instruments are received depending on household values and the constraints that may surround such activities.

This report summarises the main research findings and general lessons learnt from SHARP, a multidisciplinary research program whose aim was to contribute greater science-based knowledge about these issues. The program was funded by the Swedish Environmental Protection Agency (Swedish EPA) and the Swedish Research Council Formas, for a period of five years, 2003–2008. The general objectives were to:

- Investigate the role of households and household behaviour in achieving environmental policy objectives;
- Analyse the constraints that households face when performing environmental activities, and how they organise and integrate these activities in daily life, given these constraints and given their environmental attitudes and values;
- Clarify the circumstances under which environmental policy instruments will be effective and perceived by households as legitimate.

The research studied the general design of environmental policy and how it impinges on households’ daily activities, but also focused on parts of empirical studies of three specific activities: recycling, purchasing green products, and transport choice. The research is methodologically based on a combination of context-dependent studies (such as hourly diaries, in-depth interviews, field experiments) and broader studies based on large databases and survey studies directed at a large representative sample of households. The majority of the empirical studies focused on conditions in four Swedish municipalities: Göteborg, Huddinge, Piteå, and Växjö.

The program was monitored to ensure the academic and practical relevance of the research by an expert panel made up of representatives of the Swedish EPA, the four partner municipalities and researchers from universities in Sweden, Denmark and Great Britain. The following people were part of the SHARP program expert panel for part or the duration of the program:
• Erika Budh, Ph.D, Environmental Economics Unit, Swedish EPA, Stockholm
• Jonas Christensen, J.D., Ekolagen, Uppsala
• Andrew Dobson, Professor of Political Science, Keele University, England
• Lars Drake, Associate Professor, Environmental Economics Unit, Swedish EPA, Stockholm (now with the Swedish Chemicals Inspectorate)
• Annika Friberg, Agenda 21 Coordinator, City of Göteborg
• Cecilia Mattsson, PhD Eng., Implementation and Enforcement Department, Swedish EPA
• Johanna Pettersson, Agenda 21 Coordinator, Municipality of Huddinge
• Helena Shanahan, Professor Emerita, Department of Food, Health, and Environment, Göteborg University
• Henriette Söderberg, Associate Professor, City Office, City of Göteborg
• John Thogersen, Professor of Economic Psychology, Aarhus School of Business, Denmark
• Lars Wenn erstål, Environmental and Public Health Manager, Municipality of Växjö
• Erik Westin, Implementation and Enforcement Department, Swedish EPA
• Åsa Wikman, Environmental Inspector, Municipality of Piteå

More information about research conducted within the SHARP program and the individual projects is available on the program website at www.sharpprogram.se and in the project appendices to this report.

Report content and outline

The purpose of this report is to present the main findings and environmental policy implications of SHARP research. The primary focus is thus on findings, rather than methodological questions. The report is divided into three main parts. The first section addresses issues related to environmental policy expectations on households and general policy legitimacy. What are the values and principles that are the basis of Swedish household-oriented environmental policy objectives, expectations, and prerequisites, and to what extent are these values accepted by citizens?

The second section of the report contains three chapters that illustrate in various ways the social and sociotechnological contexts in which the daily activities of households take place. The findings addressed here are based on things including (a) a historical study of household consumption patterns during 1958–2005 and the impact of various state systemic measures; (b), about 50 hourly diary studies and in-depth interviews with a total of
28 households; and (c) a study of lessons learnt from the founding of Sweden’s first ecovillage in the late 1970s.

The third section of the report sheds light on household behaviours and the impacts and acceptance of policy instruments in three areas: recycling, consumption of ecolabelled products, and transport choice. This section begins with an overview chapter that focuses on general incentives and constraints to sustainable activities, such as personal and social norms, problem awareness and sacrifices, and uses these aspects to analyse key differences between, for instance households’ recycling behaviours and transport choice. The next three chapters analyse each of the three activities in depth. These chapters present research findings that may help us understand why certain households choose – and others choose not – to make sustainable choices in everyday life, and what role various types of policy instruments may play in increasing the probability that households will perform these activities.

A number of boxes are presented in each chapter, which are intended to provide a basic understanding of the empirical research material on which the findings are based. These information boxes may be read separately or skipped without losing the context. The researchers who actively contributed to writing this report include:

- Christer Berglund, Assistant Professor, Department of Business Administration and Social Sciences, Economics, Luleå University of Technology (now with Vattenfall).
- Mats Bladh, Associate Professor, Technology and Social Change, Tema Institute, Linköping University.
- Louise Eriksson, Ph.D, Department of Psychology, Umeå University (now with VTI).
- Jörgen Garvill, Associate Professor, Department of Psychology, Umeå University (now retired)
- Hilde Ibsen, Associate Professor, Faculty of Social and Life Sciences, Environmental Science, Karlstad University.
- Carina Lundmark, Associate Professor, Department of Business Administration and Social Sciences, Political Science, Luleå University of Technology.
- Simon Matti, Assistant Professor, Department of Business Administration and Social Sciences, Political Science, Luleå University of Technology.
- Gabriel Michanek, Professor, Department of Business Administration and Social Sciences, Jurisprudence, Luleå University of Technology (now at Uppsala University).
- Annika Nordlund, Assistant Professor, Department of Psychology, Umeå University.
- Karin Skill, PhD, Technology and Social Change, Tema, Linköping
- Kristina Söderholm, Assistant Professor, Department of Business Administration and Social Sciences, History and History of Technology, Luleå University of Technology.
• Patrik Söderholm, Professor and Coordinator of the SHARP program, Department of Business Administration and Social Sciences, Economics, Luleå University of Technology
• Elin Wihlborg, Associate Professor and Assistant Coordinator for SHARP, Department of Political Science, Linköping University

All researchers who contributed to the program research over the years are listed in an appendix under each project. The appendices also explain the core research questions of each project and provide a list of publications and examples of outreach activities to spread the findings outside the academic world.

In 2010 the research team also published a scientific anthology at the Earthscan publisher entitled Environmental Policy and Household Behaviour: Sustainability and Everyday Life.
Households and Swedish Environmental Policy: Expectations and Prerequisites

The prerequisites for many current environmental policy objectives are unique, in that significant responsibility for performing environmental work and attaining policy objectives is found at the household level, especially in the many choices and activities that shape daily life. There is broad political and scientific consensus that the causes of current environmental problems, and thus many of the solutions to them, are found not only in the general policy decisions made by politicians at various levels or by the business community, but also in the myriad, workaday deliberations of individuals. The household, and ultimately the individual members who make up the household, thus have a key role in the practical effort towards ecologically sustainable development. Consequent upon the increasing focus on the individual in the context of environmental problems, as internationally established through Agenda 21, Swedish environmental policy also has an explicit objective to increase and maintain active, individual responsibility for the environment (see e.g. Box 1). But the need for collective solutions and thus widespread household participation implies a strong imperative to design policy so that it gains legitimacy among the public, meaning that prescribed views on things like the nature of the problems, possible solutions, allocation of environmental responsibility on a societal level or the design and use of environmental policy instruments are supported or at least accepted by the public. Policy legitimacy is a key prerequisite for the continued development of environmental policy in general and environmental law in particular, in accordance with the democratic principles that call for fundamental popular support for the direction of policy.

Households and environmental law

Environmental policy influences society and attempts to attain the stated objectives through the use of policy instruments. As views on the sources of environmental problems have changed, a number of instruments have been directed at individuals with a view to directly and indirectly influencing their activities in the household. Both economic and informative instruments are extensively used to spur changes in household activity patterns. The instruments are designed within Swedish environmental policy with a dual purpose: to present a sustainable alternative as more advantageous to the household (“pull strategies”) and to exacerbate the negative impact of practicing unsustainable activities and thus reduce their prevalence (“push strategies”). In general, the former policy instrument design tends, at least from a short-term perspective, to be perceived as more acceptable due to the connection to voluntary
compliance, even if the positive impacts on the environment are not necessarily as distinct, and for the same reason.

The most tangible form of political control is environmental law, which in connection with the development of environmental policy has gained new targets for its environmental requirements, including members of households. To a certain extent, legal development thus reflects the understanding that reality has become increasingly complex and a great many sources of various magnitude and nature affect environmental status, even if households were not entirely absolved from responsibility in earlier law. For instance, central environmental control in the 1969 Swedish Environmental Protection Act was aimed primarily at industrial operations, but the law imposed environmental standards for all uses of land and water at risk of pollution and similar disruptions, thus including household uses. The same can be said about the chemicals laws enacted in 1973 and 1985; control focused on manufacturers and importers, but environmental standards were also directed at other handling, such as household use of chemicals. However, the Environmental Code of 1999 further expanded Swedish household-oriented environmental law, with clear connections to the principles expressed in Agenda 21. In order to promote the Code’s sustainable development objectives, control should focus not only on monitoring and control of pollution, chemicals, waste, interference with the natural environment etc. but also on resource flows. In order to achieve an ecocyclical society, the Code imposes requirements for recycling and reuse and on conservation of materials, raw materials and energy. These requirements cross virtually all sectors of society and are thus also applicable to household activities.

Box 1: Good citizens are expected to take active environmental responsibility, even within the private sphere of the household

“We must take advantage of the potential found in the household sector with regard to the effort towards sustainable development. The individual’s actions are very important. For that reason, the development of modified behaviour patterns among households should be supported.”

“In order to attain sustainable consumption patterns … consumers must understand that there is a connection between their actions and the environmental, social and economic development of society.”

“Changes in lifestyle and living habits and new or revised values will be required to achieve changed consumption patterns.”

What kinds of legal environmental standards can households encounter? Historically, households have been affected by environmental regulations primarily when a particular behaviour in the individual case has been deemed a risk to human health and the environment. And such is the case today. Waste management is one example. To prevent littering and pollution, the main rule requires households to surrender waste that must be removed by the municipality or a producer. The handling of chemical products is another example. Certain chemicals (like DDT) are banned entirely, while others may only be handled by professionals or under special conditions. A third example is the construction and modification of buildings and civil works, as well as other interference that entails a significant modification to land or a body of water.

It is easy to understand that households are affected by environmental requirements when, as in the foregoing examples, one can identify a relatively tangible risk in the individual case. But what about when there is no such risk and it is mainly households as a collective that cause the risks, for instance in connection with the normal use of dishwashing and laundry detergents? In these situations, informative and economic instruments play a key role in moving household activity patterns in a more sustainable direction, which are in some cases based on legislation. In principle, however, mandatory legal instruments are also applicable in these situations, primarily through the general rules of consideration set out in the Environmental Code. These include requirements to take protective measures and other precautions, acquire knowledge about environmental risks, avoid chemical products (including dishwashing and laundry detergents, for instance) when there are less dangerous alternatives, conserve natural resources and energy, and recycle and reuse. Exemptions from these requirements are provided only when someone takes an isolated “measure” (as opposed to an “activity” that is continual or recurring, such as commuting by car to and from work), while the connection to the Code’s sustainability objectives is so vague that the measure is deemed “of negligible significance in individual cases.” Examples of such cases are the choice of housing and vacation/holiday pursuits.

Box 2: Censurable behaviour?

A man left a paper bag full of newspapers at a recycling station in central Luleå, next to an already overflowing container. He had previously tried to drop off the bag at another station, but the container was full there, too. The district court fined the man SEK 8,000 for littering. The court of appeal affirmed the conviction, but reduced the fine to SEK 500. (Northern Norrland Court of Appeal, 22 June 2006, case B 205-06).

Although the fundamental premise of the Environmental Code is that the standards must apply to everyone, closer analysis of the rules shows that there are probably very few cases in which intervention would be actualised when the environmental risk is due only to the behaviour of households as a collective. The reason for this is that the requirements of the Environmental Code may not be unreasonable, which in essence means that the environmental benefit of a requirement must primarily be weighed against the cost of compliance. In addition, the drafting history of the Code shows that other circumstances must also be ascribed importance with regard to how a behaviour is judged, such as that it is “generally acceptable,” and “personal privacy and freedom of choice” must be taken into account. Against this backdrop one can presume, even though the legal boundary is very vague, that supervisory authorities do not prioritise requirements aimed at households if there is no relatively tangible risk to human health or the environment in individual cases.

Alongside the requirements that environmental law imposes directly on household activities, households are often affected indirectly, when legal obligations are imposed on others. One important example of such a target is the municipality, since municipal planning decisions on building and other land use, for instance, affect the distances between neighbourhoods and workplaces and access to public transport. Likewise, municipal decisions on waste management plans as required by the Environmental Code affect households' options for recycling. Another example in which households are affected indirectly is the regulation of chemical products handling, where environmental requirements are directed primarily at manufacturers and importers. If the manufacture of a particular product is banned by law, it affects households' freedom of choice, just as requirements for disclosure of the environmental risks of chemicals make it easier for households to make environmentally conscious choices. The relatively new requirements on petrol stations to supply alternative fuels is a similar example in which household activities are affected indirectly by environmental law.

In summary, research carried out by SHARP shows that legislation has impact on households’ green behaviour in various ways. The law is often the basis of economic and informative policy instruments. Mandatory legal requirements aimed at municipalities and other addressees shape social structures and other frameworks for household choices and behaviours. On the other hand, it can be presumed that a mandatory legal requirement aimed at households is meaningful primarily when there is a tangible risk to human health or the environment in the individual case, and not when risks should be ascribed to the collective behaviour of households. The modest application of the law to the lifestyle choices of private households may be seen as an indication that policymakers prefer to use other types of instruments, rather than legislation, which is ascribed to the belief that individuals are relatively concerned about the environment and willing to voluntarily comply with policy directives, as well as rational respondents to economic instruments.
In addition, the reluctance to control directly via legislation may indicate a belief among policymakers that measures that clearly step away from voluntary compliance lack legitimacy among the public.

The legitimacy of the Swedish environmental norm

The design of environmental legislation may be regarded as the clearest practical expression of current environmental policy objectives, and thus also provides an indication of the general political perspective on environmental problems and possible solutions. The analysis of Swedish environmental policy documents (published 1994–2004) carried out within SHARP shows that there is a dominant environmental norm in Sweden that imbues household-oriented policy at the local and national levels. The overarching national policy documents, such as legislative bills and Government Communications, establish the official view on both the causes of the problems and their possible solutions, from which the environmental policy discourse in the municipalities surveyed by SHARP differs only to a minor extent. In this respect, national and municipal policy documents demonstrate clear consensus with the individual focus expressed in most international environmental agreements, particularly Agenda 21. The responsibility for attaining the ecologically sustainable society is described as equally shared among all individuals in Sweden, where all citizens have a duty to actively contribute to favourable social development by how they arrange their lifestyles. The picture of the good citizen thus incorporates active assumption of environmental responsibility in the private household sphere.

The Swedish environmental norm also reveals a view of citizens and their commitment to the environment that corresponds with the abovementioned application of the law, aimed at regulating households’ environment-related duties and responsibilities. While the general policy rhetoric presumes that citizens possess a certain measure of awareness and readiness to assume responsibility for the environmental consequences of their daily actions, it also presumes they are in need of a friendly push in the right direction, in order to clearly see their own best interests and come to understand how this can be achieved in practice. However, the attendant picture of citizens as passive consumers of products and information entails tremendous responsibility for national and local authorities to indirectly guide citizens through information about how this environmental concern should be expressed: guidance as to which values should be defended and how priorities should be set, rather than opening the door to widespread, public deliberations about these matters. Education and information with normative undertones are thus described as key instruments for increasing household contributions to sustainable development. However, closer analysis of the more specific policy arguments related to household motivations shows that policymakers
consider both positive and negative economic incentives the primary methods for bringing about behaviour modification while maintaining the legitimacy of environmental policy.

Using environmental legislation as the basis for economic and informative control of household behaviours probably does not create any legitimacy problems in and of itself. But legitimacy becomes a critical issue when mandatory legal requirements are formulated in direct relation to household activities, since the requirements may be perceived as invasions of privacy. This is particularly so if the requirement is sanctioned with penal rules or the equivalent. The Environmental Code’s stricture to avoid using a chemical if there is a less dangerous alternative is an example of a penal provision that intervenes in the daily lives of households, and has been criticised on those grounds. The conflict between state control, whether direct or indirect, and personal freedom is scarcely mentioned in the policy documents covered by the analysis. As part of avoiding this potential conflict and to align with the picture of the citizen as a consumer first and foremost, Swedish policy documents instead consistently wrap the effects of environmental protection in financial terms, in the hope that this will strike a positive tone among the public.

However, research findings within SHARP reveal a distinct discrepancy between the image of citizens that emerges in official policy and the design of policy instruments and the image reflected by citizens themselves. Firstly, while personal freedom and self-determination are certainly prized by Swedish citizens, environmental protection is also prioritised when people weigh one value against another. Our study suggests that future environmental policy has good prospects for implementing effective environmental protection measures while remaining legitimate in the eyes of the public. Secondly, the discrepancy becomes apparent in the question of people’s motives for behaving in an environmentally friendly way when people explicitly assert that the morally based willingness to do the right thing has greater impact on motivation than financial rewards or punishments. With respect to the future design of policy and policy instruments for the long term, this finding implies that care should be taken to prevent unilateral focus on economic instruments and motives from pushing aside pre-existing moral convictions.

Finally, it is clear that environmental concern is relatively well-developed among Swedish citizens and that people have both the general and more environment-specific attitudes and values that support green behaviour. Policymakers should take this as an indication that structural changes of society that enable or facilitate assumption of personal responsibility for the environment may be more significant to reaching sustainability objectives than continued concentration on shaping opinion in a sustainable direction.

However, there is another legitimacy problem that arises in connection with mandatory environmental requirements, because such are in many cases vaguely worded in legal rules. One reason for this is that the legislature is incapable of regulating all environmental issues in detail; the reality is simply too complex and uncertain. A large number of known and as yet unknown situations in which environmental impact may be anticipated can be covered
through generalised requirements. The general rules of consideration in the Environmental Code are the most important example of such rules, which thus fill a key “coverage” function. However, vague requirements will inevitably come into conflict with due process, since individuals cannot clearly see the boundaries of the disallowed and thus cannot either predict when they may be subject to sanctions or official intervention. This conflict of interest is also found when the rules are applied to commercial activities, but is probably stronger when households are concerned, because households typically have fewer financial resources. There are thus important arguments against the widespread use of mandatory legal requirements aimed at households. One may presume that such requirements, as today, could become meaningful primarily when there is a relatively tangible risk to human health or the environment in the individual case. However, legislation should be able to fill an important function by facilitating households’ choices in favour of green behaviours and products. Towards that end, mandatory legal requirements could be imposed on municipalities, manufacturers, importers and other actors upstream from households.

There is a general need for legal development to manage this complexity, of which households are one component. Among other things, the substantive controls in the Planning and Building Act could be tightened with a view to building physical structures that prioritise accessibility for households (such as access to public transport or recycling facilities) and thus promote green behaviour. Environmental quality standards set the limits for what the environment can tolerate, limits that apply to everyone, not least the impact originating with households. However, Swedish law lacks effective instruments for implementing these standards vis-à-vis various actors. The action programs especially, which cover all actors whose activities have environmental impact as a collective, need to be clearer and more effective. Adaptive environmental planning – the New Zealand Resources Management Act is a fine example – may also be an instrument that allows comprehensive and integrative analysis and control of complex situations.

Swedish environmental policy expects households to play a central role in the continued effort towards sustainable development and to contribute to attaining environmental policy objectives by allowing active assumption of responsibility to inform the arrangement of daily activities. However, closer analysis of policy and legislation reveals some doubt among policymakers concerning the scope of obligations that can be directly imposed on members of households, not least from the perspective of legitimacy.

Policy implications

Taken as a whole, a combination of policy instruments in which access and resources for enabling more environmentally friendly behaviour are combined with concrete information about the environmental benefit of modified activity patterns clearly have good prospects for being accepted as legitimate by the
general public and thus contribute to laying the foundation for social development more beneficial to the environment. The key implications for environmental policy can thus be summarised in the following points:

- Opportunities to control households via (direct) legislation are limited. Even though citizens do not always regard personal privacy and freedom as more important than environmental protection, vaguely worded and general environmental requirements have implications for due process and thus also legitimacy.
- It is important to focus infrastructure and physical planning to promote green behaviour at the household level. Environmental awareness is relatively high among households in general, but infrastructures and resources are often lacking.
- Policy packages, in which several instruments interact, are an effective means to respond to morality-based motivations to take personal responsibility for the environment while providing the necessary resources. Attempts to depict the environmental issue only in economic terms are probably not strategy beneficial in the long term; instead, economic and informative instruments should be clearly complementary.
- There is scope for taking the step in policy away from guidance and information towards more clearly encouraging the development of politically skilled citizens.
A half century of household consumption patterns: government interventions and structural contexts

Introduction

Household consumption patterns are central elements of society’s relationship to the natural environment. Statistics Sweden has been using detailed household budget surveys to regularly track Swedish household consumption since 1958 (2,000–4,000 participating households in each survey). One aim historical research within SHARP was to utilise this input data to perform a special analysis of trends for the two groups of products and services that cause the highest emissions of greenhouse gases: transport and housing. These expenditure items also account for the sharpest increases over the period of 1958–2005 (see Box 3 below).

Box 3: Household consumption patterns, 1958–2005

The figure shows the average Swedish household’s expenditures distributed among various categories of products. The unit of measure is the Swedish krona at the 2005 value and all figures are based on Statistics Sweden's household budget survey (HBS) for the corresponding year.

Another research objective was to create greater understanding of the historical development of household consumption of housing and transport in the second half of the 20th century from a sociotechnological system perspective. The analysis shows that the Swedish government has through a number of policy areas and both directly and indirectly been intervening in household consumption since the 1950s, with significant complications for the environment. The government influence may be regarded as the more or less deliberate construction of systems that impinged on households’ daily lives and consumption of specific products. The sociotechnological systems of central importance to household consumption of transport and housing since the 1950s are: (a) Swedish post-war housing policy and related sociotechnological contexts; (b) the motorisation of society and associated sociotechnological systems; and (c) post-war rationalisation of retail distribution.

Transport and housing consumption from a historical perspective

Household expenditures for housing and transport have each increased by almost 300% in real terms since the 1950s (Box 3). Housing is now the biggest expenditure item for Swedish households; in the mid 20th century, food was the largest expenditure category. This is partly an effect of higher prices, but is also strongly dependent on changed housing preferences and changes over time in housing-related sociotechnological systems. The increase in transport expenditures reflects an extreme increase in consumption of transport by private car. The average mileage per person and day has increased from about 5 km to 30 km since the 1950s. Expenditures for car operation have thus been greater throughout the study period than expenditures for car purchases, despite relatively stable fuel prices and more fuel-efficient cars.

The Swedish government responded to the post-war housing shortage with a comprehensive social housing policy, which reached its zenith in the 1940s through the 1960s. The intent was to improve housing standards for Swedish households and eliminate overcrowding, as evidenced in several government reports, such as Höjd bostadsstandard [Higher housing standard] (1965), which also actualised the “Million Homes Program,” whose target was to produce 100,000 new housing units a year for ten years. The social housing policy had far-reaching effects on changing the sociotechnological systems related to housing consumption. Building had to be made more efficient in order to attain the goal of mass production of modern housing. The Swedish government contributed to this when it commenced a process in the 1950s to standardise housing standards and initiated research institutes and experimental activities. Combined with a comprehensive housing benefit policy, this development was a fundamental prerequisite for the steep rise in one-person households over the period. Generally speaking, Swedish post-war housing policy contributed a sharply increased number of housing units, vastly improved housing standard and, not least importantly, more spacious
housing. By extension, this contributed to the observed increase in housing expenditures, but it has also caused adverse environmental impact (such as higher energy consumption for heating and fewer economies of scale in food preparation).

The Swedish government’s influence on private homeownership and construction of single-family homes was more indirect than with respect to publicly owned multifamily dwellings. The single-family home boom in the early 1970s may be explained by factors including real wage increases and inflation that made taking out a mortgage advantageous, but may also be regarded as a reaction to decades of massive, standardised housing production. More so than multifamily dwellings, private houses could provide an avenue to express changes in fashion and make lifestyle statements. Sweden experienced a new single-family home boom in the mid 1980s, to which the government contributed more directly, albeit perhaps not exactly deliberately. Not least, this occurred in the form of a new monetary policy that included a deregulated credit market, which made it much easier to borrow. Increased private ownership, larger homes and modernised housing are clearly reflected in the fact that household expenditures for “interest” and “rent/fees” have multiplied several times over in real terms in the last fifty years, while household energy expenditures, for instance, “only” doubled.

The “housing estate” (housing development) approach was a central concept in Swedish post-war housing policy. The underlying idea was that housing estates would foster civil solidarity through a distinct division of areas to live in, town centres and industrial/business centres to work in. Everyone in the estate was meant to live within walking distance of the town centre and its grocery stores, libraries, schools, etc. Multifamily dwellings were usually required to reach the necessary density in the estate. In turn, the distinct division of the housing estate approach among various sectors promoted the private use of cars because the sharp boundaries between the various sectors of the town favoured the construction of inner and outer traffic systems with a grid of roads.

We can regard the post-war rationalisation of retail distribution as another contribution to the decentralisation of Swedish society, and thus to the increase in private use of cars over the period. In this area as well, the Swedish government has had significant impact, especially in the 1950s through promoting the trend towards more self-service shops. The abolition of controls on business establishment and gross pricing, amendments to food laws (which among else previously banned the sale of meat and produce on the same premises) and building and planning laws (that previously constrained the size of shops) were instrumental in rationalising retail distribution. The government emphasised the importance of labour savings in connection with self-service for the retail trade and society as a whole. By the end of the 1960s, a full 70% of Swedish food sales were distributed through self-service shops, the highest percentage in Europe at the time. The rationalisation also extended to the size and location of shops, which became increasingly larger and fewer in number. They were also located further out in the periphery of the city where
land prices were low. Warehouse-like shops could be built in these places, which enabled the most efficient distribution of goods in shops, just as the large car parks improved the efficiency of the final leg of distribution, that is, between the shop and the household.

The Swedish government has exacerbated the growth of car use through direct measures as well, such as standardising traffic planning. For instance, compliance with the 1968 “SCAFF” guidelines (“Guidelines for Traffic Planning Incorporating Safety Considerations”) was stringent in urban planning. A trend can also be seen in which car transport has become increasingly individualised over time, that is, people are travelling more often as drivers than as passengers.

Transport related to employment and childcare has increased as a percentage of total mobility since the 1970s, while transport related to shopping, social interaction/visiting and recreation has declined in relative terms. All of this corresponds well with the notion that mobility and transport consumption constitute a structurally created need, rather than some form of luxury consumption. Box 4 below shows the results of an analysis of the impact of various socioeconomic factors on Swedish household consumption patterns over time.

In summary, the research shows that the Swedish government has in several ways and through a number of different policy areas both directly and more indirectly contributed to the increased consumption of transport, especially car transport. It was not always the main purpose of the social housing policy and rationalisation of retail distribution to contribute such a marked increase in private use of cars due to greater distances between the home, work and shopping centres. The sociotechnological systems discussed here are, of course, only partial explanations to the steep increase in housing and transport consumption since the 1950s. Other central explanations include higher household incomes due to sharp rises in the percentage of gainfully employed women, which are in turn dependent upon major expansions in publicly financed childcare.

Policy implications
The preceding examples show that intervention has historically had significant impact on the sociotechnological context in which we consume. This opens vital paths for policy aimed at behaviour modification, although a fundamental condition is naturally that the government intent on motivating sustainable consumption is cognizant of its own historically determined role in the context. For that reason, the following key policy implications can be cited:

- The sociotechnological context in which people live their daily lives has historically had distinct impact on Swedish household consumption patterns, which reinforces the need for environmental policy that examines and explains opportunities to influence this context.
- Effective policy for sustainable development should focus attention on how multiple policy areas affect – directly or indirectly – household consumption patterns.
Box 4: The significance of socio-economic factors to consumption patterns

SHARP research has utilised Statistics Sweden’s Household Budget Surveys to analyse the impact of various socioeconomic factors on household consumption patterns. The statistical analysis was based on the variation between individual households and repeated for four survey years (1978, 1985, 1992 and 2003). The results for household consumption of transport, housing and foreign travel are shown below.

The figure indicates correlations that are statistically significant and relatively stable over time. The results show that households with a female head tend to allocate a smaller percentage of expenditures to car transport. This corresponds well with other research showing that women use the car less for recreational activities than do men (while men and women are equally frequent drivers when it comes to things like commuting to work and childcare). The results also show that for certain years, female presence has a positive impact on housing consumption and the percentage of expenditures allocated to foreign travel. The latter correlation applies to later years (such as 2003) and is consistent with marketing research that shows women often control family decisions to take charter trips, for instance.

There is a positive correlation between higher income and both transport and foreign travel for all years studied. The analysis also shows that there seem to be no signs of a saturation effect with regard to foreign travel; incomes must reach significantly higher levels before households choose to reduce their expenditure shares for foreign travel (and instead increase consumption of things like theatre and cinema-going). The expenditure share allocated to housing tends to decline as incomes go up.

The results indicate that households with older members generally spend relatively less money on foreign travel and car transport, but have higher housing consumption. Households with relatively high levels of education generally have higher consumption of foreign travel, while households with children travel abroad less frequently. The presence of children in the household also has negative impact on relative transport consumption but positive impact on housing consumption.

The correlation between urban households and transport consumption reveals interesting changes over time. The results for the 1970s and 1980s show a positive correlation, but the correlation is negative for 2003. Single-person households also tend to allocate a smaller expenditure share to transport, while consumption of foreign travel and housing is higher than for other households, in relative terms. The latter result is consistent with the observation that single-person households is generally less space and energy efficient than multi-person households where coordination of things like cooking and heating can be better utilised.
Everyday life in households and sustainable activities: a time-space issue

The SHARP program studied how households organise daily life in a qualitative, in-depth study. Focus was on how various activities promote or constrain sustainable action in daily life, and how structures and actors interact. Twenty-eight households were interviewed on two occasions and individual household members were asked to keep hourly diaries. Forty-five hourly diaries were kept and submitted and 64 household members were interviewed in a total of 48 interviews. The material was collected during 2004–2006.

Zooming in on the details and context of daily life

In the hourly diaries collected in the study, household members recorded how they eat dinner, shower, get to work and school, do the laundry and buy food. But what impact do these activities have on sustainable development? It became apparent through the study that general descriptions of how people do laundry, for instance, touch upon very specific details with environmental consequences, such as what kind of washing machine is purchased and used; how much energy it uses; what water temperature is used; whether detergent and fabric conditioner are used and if so, how much; how full the machine is loaded; whether laundry is dried in a tumble dryer or air-dried; and, finally, who does the laundry. These specifications make daily activities a complex matter to study in relation to sustainable development, since virtually every detail has an alternative that may be more sustainable or less so. As a result, researchers must zoom in on the details of everyday life. In addition to the tangible things that household members used to do laundry, the activity is affected, like so much else, by intangible norms related to cleanliness, femininity and masculinity, comfort, etc. Naturally, these are often intertwined in the sense that tangible things have been designed with these norms in mind, and can in turn reinforce or reproduce the norms. In the specific activity “doing laundry,” households are also dependent on water and electric power systems, and whether or not they want to choose more sustainable alternatives from eco-labelled products. Depending on whether household members live in a house or an apartment, they may have varied access to a privately owned washing machine and be reached by different information from the municipality about water, sewage and environmentally impacting activities.

The research shows that there are myriad sustainable alternatives that household members must consider, which can sometimes make it difficult to choose. This may be one possible reason why certain activities, such as recycling household waste, are performed to a greater extent than others,
although it is probably not the only reason. In summary, the level of detail occurs because it is not limited only to the activities household members perform, but also includes how they are performed and by whom. Thus, it is a matter of reshaping general and abstract objectives and proposals into concrete, everyday practices.

**Box 5: The time-space dependency of daily life**

A thick blanket of snow covers Piteå. It is late January, 2006. Pia gets up when the alarm clock rings at a quarter to eight. She watches her children ride away on their bikes to school. A little while later, her son calls and says he has left his PE kit at home. She takes the car and drives his things to school. When she gets home, she puts the coffee pot on the stove and then pours the coffee into a thermos so she won’t have to make any more for the rest of the day. Tidying up the kitchen is next on the list. She starts the dishwasher and goes into the bedroom, where she makes the bed and picks up the clothing scattered around. She takes the clothes and heads down to the basement to start a load of laundry. She catches sight of a Christmas floral arrangement she was given and takes it apart. She saves the amaryllis bulbs for planting in the garden next spring. She can imagine how beautifully they will bloom again next Christmas. She removes the tinsel and decorations from the arrangement and sets them aside to save and use again. After the decorations are tucked in a bag, she goes outside to give yesterday’s leftovers to the chickens, chuckling at how they fight over the spaghetti. She goes back inside and puts another load of dirty laundry in the washing machine and starts it. When she sees the machine is going, she gets dressed and packs her workout clothes. Gym bag in hand, she gets in the car and drives off to Step-In and exercises for an hour and a half at the gym. After her workout, she drives to the petrol station and fills the car, then on to the grocery store to shop. She chooses local products. Three hours after leaving home, she is back again. The washing machine cycle is finished. She puts the laundry in the tumble dryer and starts it. Once the laundry is spinning, she goes to the kitchen and eats a cold lunch. Full and content, she takes out her knitting and curls up on the sofa with it. After a few hours of knitting, her daughter Petronella arrives home from school, and she helps her with her violin lesson. Pia has planned to make a baked macaroni casserole for dinner, so she goes to the kitchen and prepares it once violin practice is done. While the casserole bakes, she goes down to the basement and loads the machine with yet another load of laundry. Then its time to hop in the car and drive to Petronella’s school for a parent/teacher conference. A little over an hour later, they are home again and Pia puts another load of clean, wet clothes into the dryer. “Another one!” she thinks. At seven-thirty in the evening, she can finally curl up again on the sofa to watch the film awards show on TV while she is making a bit more progress on the jumper she is knitting.

Although Pia was off work, she performed a variety of activities over the course of the day, alone or with her children and for herself or other members of the household. Källa: Skill (2006). Mellan grönt tänkande och vardagligt görande. En hushållsstudie om aktiviteter för hållbar utveckling i fyra svenska kommuner, Licentiate Thesis. Linköping University.

Different activity contexts may be controlled by discrete norms, requirements and “rationalities.” One person may have the ambition to act in a more environmentally friendly way and believe he or she should, but in specific situations, requirements can be weighed against one another and create conflicts between
objectives in which green behaviour does not always “win.” These conflict situations require further study, but as an example, a person may believe it is important to use public transport instead of her car, but in order to perform her civic duty in various environmental organisations and get to various meetings on time, the car might seem the only reasonable alternative. In another case, a mother may feel she wants to reduce consumption, but to be a good mother, she may buy products for her children anyway, because they want them. On a more general level, the conflict situations depend on how the three dimensions of sustainable development – ecological, financial and social – interrelate.

Obligations to act green

As mentioned, the personalisation of responsibility for the environment has put focus on how individuals behave. It is said that since private activities have environmental impact, we all have personal responsibility for changing our lifestyles by acting in a more environmentally friendly way. It is also claimed that awareness of environmental problems helps individuals modify their behaviour to reduce its negative environmental consequences. In this study, household members were first asked to describe the environmental problems they believe exist in the world, and then asked what they thought they could personally do, through their household activities, to prevent those problems.

Household members made a distinction between local and global environmental problems. The global environmental problems they described were climate change and ozone depletion, rainforest deforestation, acidification, desertification, ocean eutrophication and extinction of species. People regarded these environmental problems as linked to local environmental problems only to a very limited extent. The local environmental problems had to do with littering, exhaust fumes they believed affected their personal health by triggering allergies or headaches, smoke from the neighbours’ wood-burning heating systems and, in a few cases, that species had become extinct. The study showed that household members’ descriptions of environmental problems can be categorised in three ways:

- Problems they have personally experienced (e.g. headache, allergies).
- Symbolic problems they have learnt about and are aware of (like deforestation in the Amazon). These problems are called symbolic not because they do not exist, but in relation to how household members have become aware of them from secondary sources like the media or campaigns by environmental organisations.
- Problems they have personally noticed (e.g. litter, fish that have disappeared, exhaust fumes leaking in through windows).

All these categories can affect their personal actions in connection with various consumption opportunities, for instance. Global environmental problems, which usually end up in the second category above, are more often described
as remote and vague than local problems they have personally noticed or experienced, which may affect how they reason about their responsibility for environmental problems and their personal right to a good environment. One conclusion is that household respondents emphasise their responsibility for the environment, but hardly anyone mentioned their right to a good environment. Nor did they talk about having directly created a poorer environment for other world citizens, although many stressed that they have an impact on workers in other countries who produce the products that household members buy. In this context, it should also be mentioned that, on the contrary, several people stated that they believe poor environmental standards in other countries have adverse impact on the Swedish environment (“environmental nationalism”).

Negotiating reasonable and effective sustainable activities

Negotiations within the household concern which members of the household will do what and how household members decide which activities are relevant and effective (see for instance Box 6). Because the goals and interests of household members may vary, the focus was on “household members” as actors, rather than “households.” Negotiations may be expressed explicitly or implicitly and involve factors including gender-based division of labour.

Box 6: Negotiating reasonable household activities

**Vanja** (Woman, 40, mother of two, Växjö)
“I feel a little like a villain sometimes because I drive so much, but we recycle as much as we can.”

**Börje** (Man in his 30s, father of three, Huddinge)
“I’ve found one [a recycling station] on the way to work I can use since I drive past it anyway. You shouldn’t drive out of your way, after all, because then you’ve already lost everything (laughs), and it’s not so eco-friendly anymore. Then I might as well just throw it all in the bin.”


As mentioned, sustainable activities are characterised by their complexity. It can be difficult to determine what is more sustainable or less so, and this is always judged in relation to something else. Should one choose not to recycle if it requires energy and hot water to rinse recyclable containers, or if recycling stations are so far away that waste must be transported there by car? Is it more sustainable to buy locally produced food that required no transport, or to buy organically produced food that comes from remote locales and perhaps required more land area? Is it better to prefer public transport on buses
that run virtually empty, or to use ecodriving methods and drive thriftily? These are all concerns shared by participating household members in the interviews, and it is clear that the complexity sometimes leads them to do “the usual” because they simply cannot decide whether adopting the suggested sustainable activities would be effective. But the complexity can also lead household members to adopt a limited number of sustainable activities that they believe are “good,” recycling notable among them.

The social dimension of sustainable development focuses on who acts how, and involves factors including gender. The study cannot determine whether men or women as a group are more environmentally aware or concerned about the environment, but gender-coded household activities relevant to the environment were studied. While women are more keen on buying organic food, especially with the children’s health in mind, men have more knowledge about energy systems for the home and were able to discuss the consequences of various energy choices based on their environmental impact.

Environmental awareness

It clearly emerged in the study that all respondents mentioned the importance of “environmental awareness.” One way this was expressed is that all household members were aware of a variety of connections between daily activities and environmental impact. But it also became clear that there was no direct, linear connection between environmental awareness and green behaviour. Household members expressed that there is a “limit” for how far they are willing to go when it comes to translating their knowledge into daily actions.
However, their environmental awareness can give them a “bad conscience” when they do not do all the activities they are aware of which they believe have negative environmental consequences. In the context of daily life, they relate to two categories of people: those they depict as “fanatic” environmental activists who devote tremendous time and energy to green behaviour, and those who are “irresponsible,” especially people who litter or dump waste in nature. The descriptions reveal what the respondents believe is reasonable to do, motivated by the environmental situation, as well as the constraining and facilitating factors.

Dear Nature!
I am thinking a lot about you, just wanted you to know!
Warm regards!

To: Nature


Policy implications

One important conclusion is that daily life for households is strongly dependent on time and space, and their responses to various environmental policy instruments can thus differ considerably. Nonetheless, a few general lessons can be mentioned:

• Environmental policy needs to enhance facilitating factors and manage constraints. Households’ arguments and their internal negotiations are often based on the notion that push strategies (like petrol taxes) are only acceptable if they are combined with pull strategies (like improved public transport).

• Since households practice green behaviour primarily in contexts where there are facilitating systems for collective action (even if this occurs at different times and in different places), such systems should be created and maintained. Individual responsibility is predicated on collective solutions.

• In order to unite different dimensions of sustainable development, such as the social and the ecological, both who is expected to perform the suggested activities and how they are performed must be taken into account. This demands integrated policy analysis.
Sustainable living: thirty years of lessons learnt from Sweden’s first ecovillage

We have noted before how several policy decisions in the last 50 years have affected household opportunities for sustainable consumption. Many of these decisions and measures have, of course, had objectives other than environmental (such as social housing policy and transport policy), but an environmental movement blossomed in the 1960s and 1970s, and the political-ideological debate expanded to include environmental issues. Alternative movements arose during that period, which tried to move from words to action by cooperating to build ecologically sustainable communities. SHARP research has studied one of these early examples of “ecovillages” and followed up how the lives of the “ecovillagers” have been affected by their active choice of a sustainable lifestyle. A study of this nature provides valuable lessons for application in environmental efforts.

Emergence of a growth versus environment debate in the 1970s

The 1970s were dominated by a number of developmental trends, some of them contradictory. On the one hand, economic growth and the emergence of the welfare state had given people in the western world a high material standard of living. The institutional and political development model was based heavily on growth and material consumption to maintain and generate even more excess. On the other hand, the 1970s were also characterised by burgeoning alternative movements, which argued that prevailing trends and associated lifestyles were not sustainable in the long term. These movements grew especially after the first oil crisis in 1973, and growing environmental awareness took hold in the industrialised countries. The 1970s were also an era in which the idea of global solidarity garnered increasing attention in the western world, with Sweden no exception.

Swedish politicians were thus confronted with two separate paths to development: higher economic growth or the “anti-growth” approach, with the latter based on the limits imposed by the population and supply of natural resources. The growth approach was generally supported by “the establishment,” while the alternative approach was propagated by counter-cultural groups who were critical of the waxing culture of consumerism. At the same time, there was lively debate in Sweden even among “the establishment” about alternative paths to development and environmental issues, for instance
within the political parties, especially the Social Democrats. The debate ema­nated from worries about the risks that attended the modern society and the new global issues of access to natural resources, population growth and environmental destruction. These issues and the widening gap between poor and rich countries were highlighted in government inquiries and other con­texts in the 1970s.

Walking the talk: lessons learnt from the ecovillage of Tuggelite

The preceding discussion shows that conditions existed in the 1970s for the emergence of ecologically sustainable forms of housing. The political debate cast the spotlight on environmental issues and there was greater understanding of the environmental problems created by non-sustainable consumption pat­terns. However, our study of the first “ecovillage” in Sweden, its growth and history, shows that it is possible for ordinary citizens to actively try to influence development.

The debate on alternative paths to development in the 1970s inspired a group of researchers in Göteborg to build a village in Karlstad based on ecological principles. The scientists were most interested in energy use and hous­ing, but they also wanted to create something that enhanced social co hesion. The planned village never became a reality, but a number of the people who were active in the project adopted the idea and established a new group, whose focus was to build resource-efficient homes with good living conditions. With financial support from the Municipality of Karlstad, they built the first ecovillage in Sweden, Tuggelite.

The people who moved to Tuggelite made an active choice to build resource-efficient houses, and the buildings were called “experiments” by the media. Latrine systems or compost systems were installed instead of flush toilets, to reduce water consumption. Another motivation for doing this was that the people believed the municipal sewage system represented an environ­mentally poor solution. However, after some considerable time had passed, the alternative systems were abandoned and now all households in the estate have conventional flush toilets. Today, the people of Tuggelite have also aban­doned their negative opinion of the municipal sewage system, which is now con­sidered better than the original system. Heating systems were based on pellet burners and the houses were also built to utilise “passive solar energy.” All households sorted and recycled waste and participated in the neighbourhood compost system. However, Karlstad implemented a recycling system in the area in 2007 and the group elected to participate.
Box 8: "Not in my backyard"

The experimental nature of the ecovillage was linked especially to the use of compost toilets and pellet-burning heating systems. Discussions with the municipality were fruitful and the Tuggelite group was granted funding to develop these systems. However, one key condition was that it must be possible to connect them to the municipal sewage system if necessary in the future. Otherwise, the planning phase was characterised by great uncertainty, not least due to vehement protests from residents in nearby neighbourhoods. A number of homeowners established a protest group, for instance, which opined:

“We feel the project as it has been explained would have almost exclusively negative impact on us. For that reason, we are going to do everything in our power to prevent or delay its implementation in the proposed locale.”

There were a number of different arguments against the project. Opponents claimed that the view would be ruined and that transports would increase due to increased use of passenger cars. People also feared environment-related problems such as foul-smelling gases and smoke from the toilets and pellet burners. But the most adamant arguments were linked to social apprehensions. The neighbourhood was populated mainly by households in single-family homes, and the protest group claimed that the municipality had promised them that the land would remain undeveloped and/or be developed with more single-family homes or a school.

“We feel cheated, now that we have invested in buying homes in what we believed would be a neighbourhood of single-family homes. The information officer promised there would be nothing here other than single-family homes, or possibly a school, a playing field and a local shop on the field. They know perfectly well what kind of social and other problems come with rental housing – buildings rife with vandalism, burglary and malicious mischief. Why should we have to sit and look at their clotheslines? Those terraced houses shouldn’t be let into a neighbourhood of single-family homes either.”

A protest was finally sent to the Swedish Government, but it was rejected.

These characteristics made living in Tuggelite generally more sustainable than other households during the same period. But there were also differences over time in how households in Tuggelite adapted their daily lives to ecological principles. Interviews with five of the original households who still live in Tuggelite show, for instance, that a great deal of attention has been given to organic food. The households often bought organic vegetables from local farmers in the 1980s, but as certified organic foods become more common in the shops, purchases from the retail outlets increased. The households have also actively campaigned for the shops to increase their ranges of organic products, and according to them, they have been successful in these endeavours. A majority of the households still limit their use of cars and use public transport and bicycles instead, for which their stated motivations are both environmental and health reasons.

Most of the households who still live in the area are faithful to their original values from the 1970s, but they conceded that their main task now is to maintain what they have built up and they admit the energy and active commitment that characterised the group in the 1970s has tapered off. Most
of the children who grew up in Tuggelite, and are now adults, say that they have heavily adopted their parents’ environmental behaviours and values. They emphasise that green behaviour has become a habit for them, and that they try to contribute as much as they can within the constraints of daily life.

Policy implications

The outgrowth of Tuggelite was based extensively on the homogeneous ideological background and composition of the founding group. Most of them already knew one another, were highly educated and had been active in the anti-nuclear power movement. There was a strong desire to “walk the talk,” to create an alternative to the prevailing “throw-away” society and build a neighbourhood on their own terms. Taken as a whole, the lessons learnt from Tuggelite include:

- Ambition, capacity and knowledge are key characteristics for reshaping daily life and independently translating concern for the environment into habitual behaviours. Tuggelite represents a “bottom-up” initiative in which people took active responsibility for the environment and social cohesion.
- Lessons learnt from Tuggelite also show that environmental efforts are both an individual and a collective responsibility. The building of Tuggelite was strongly dependent on support from municipal politicians and civil servants. In this way, even a small group can make significant progress in adapting to a sustainable society, but more far-reaching development towards sustainability will require even broader public action.
Driving forces and constraints to sustainable household behaviour

A simple model for analysing sustainable household behaviour

One important objective of the SHARP program was to identify and analyse incentives and constraints to sustainable household behaviour. This section describes a model that includes a number of fundamental factors that were the focus of special study within SHARP. The model is based on individual opportunities to practice green behaviour and is aimed at shedding light on the reasons individuals perform or do not perform various green behaviours. Likewise, it constitutes a basis for understanding the actions that can be taken to influence household behaviours in a direction that benefits the environment. The model is briefly presented below and thereafter discussed in relation to the empirical studies conducted in three areas relevant to the environment: waste management, consumption of green products and transport choice.

What distinguishes most demands for personal environmental responsibility is that they require personal sacrifices of some kind in the form of money, time, or perhaps less convenience. They benefit the common good in the form of a better environment, but the direct benefit to the individual is often minor. The decision to behave in an environmentally friendly way may be regarded as the outcome of a norm activation process. Norms are informal rules for how people should behave in a given situation (“ride your bicycle to work,” “sort all waste for recycling after meals,” etc.). However, costs related to the behaviour and habits that can facilitate or constrain green behaviour are also highly significant (Figure 1).

Figure 1: Green behaviour as the outcome of norm activation and the significance of costs and habits.
Norms may vary in type, and it is important to differentiate between *social* and *personal* norms. The former are norms sanctioned by others, while personal norms are those sanctioned by oneself. In order to achieve sustainable private consumption, influence from others must be accompanied by norms that the individual has “made her own” and which make her feel personal responsibility – a moral obligation – to act in an environmentally friendly way. If environmental policy is to be based on norms and morality, it is thus vital to design policy instruments that can *activate* personal norms. Figure 1 shows that various beliefs about the significance of individuals to solving environmental problems can activate a personal norm. General environmental awareness is important, such as the knowledge that humans cause environmental problems and awareness of the severity of various types of environmental problems. It is also important that people feel their personal significance to solving environmental problems, such as feeling that they can make a difference by adopting more environmentally friendly behaviours and that they have a responsibility to act in a more environmentally friendly way.

An (activated) personal norm is felt as a sense of moral obligation to act; that is, the individual feels he or she has a moral obligation to “act green”.

Personal norms may be general or specifically related to a certain type of green behaviour. Accordingly, the individual’s personal norms may vary in intensity for different types of green behaviours. A personal norm acts as a motivation *for* green behaviour and individuals who have a strong personal norm to act green thus tend to do so to a greater extent than those whose personal norms are weaker. Social norms, that is, how other households act in relation to the environment and the expectations of family and friends on the individual, also influence the individual’s personal norms, since the social norms can be internalised and thus become part of the expectations the individual has upon herself. Social norms can also have a direct influence on green behaviour because they inform people what is socially acceptable behaviour.

Many green behaviours entail some kind of sacrifice from the individual; that is, there are a number of costs attached to the green behaviour. The costs are often strongly dependent on time and context (for instance, in relation to recycling). People may for example feel green behaviour is expensive, inconvenient or a hassle, and those costs may be a significant barrier to green behaviour in households. Since many everyday behaviours are regularly repeated in similar situations, habits are formed to make daily life easier. The behaviour then becomes automatic and the individual does not think deeply about his behaviour. Habitual sustainable actions thus make green behaviour easier for the individual. However, habitual non-sustainable actions constrain change because behaviour is then controlled by habit rather than inner motivation to act green.

This thus shows that even if the individual is motivated to act green by reason of a personal norm, the perceived costs or strong habits of non-sustainable action may prevent the behaviour from actually being performed. The model presented in a simplified form in Figure 1 was the theoretical basis...
for most of the empirical studies of private household activities conducted within SHARP. The findings of these studies are described in greater detail in the following report, but we can explain here how we can use the model to understand why household behaviours vary from one activity to the next. We concentrate on three environmentally relevant areas: recycling, consumption of green electricity, and transport choice.

Waste sorting and recycling
Recycling exemplifies an area where Swedish households currently exhibit very high activity and the model above can be used to explain this positive outcome. Swedish households manifest a high degree of problem awareness and feel they are playing a meaningful role in achieving sustainable waste management. These factors are particularly important to explaining the differences in recycling activity among Swedish households. There are strong social norms in this area, and a majority of households feel a personal norm – a moral obligation – to recycle. Households that feel other households are taking active personal responsibility for increased recycling tend to do the same.

The force of habit is strong in this area, but in a positive direction in this case. Our studies show that recycling is a well-integrated part of daily life for a majority of households and that many feel the perceived sacrifice is relatively minor. However, the studies also show that measures that promote recycling (such as curbside collection) and make such behaviours more profitable (such as weight-based waste collection fees) both contribute to increased recycling. Thus, both economics and morality – and especially the two combined – augment our understanding of the relatively high levels of recycling in Swedish households.

Green electricity consumption
Ecolabelled, “green” electricity generally costs more than conventional power, but the price premium has been relatively low, in many cases just a few öre per kilowatt hour. Despite this marginal sacrifice, only a very small percentage (1–2%) of Swedish households have made an active choice to buy green electricity. Our studies within SHARP show that the prevalence of norms plays a key role in understanding why certain households express willingness to buy green electricity (and others do not). The stronger the personal norm households express with regard to green purchases on the electricity market, the more likely they are to accept the price premiums offered by electricity suppliers.

However, this effect is weakened by the widespread belief that choosing the green alternative makes no positive difference. Almost half the studied households agreed wholly or partially with the statement: “If I choose to buy green electricity, it is by no means certain that it will stimulate increased production of green electricity.” This shows that there is general scepticism in this area, not necessarily about the product concept as such, but perhaps more towards other groups in society and what they are doing to promote the pro-
duction of green electricity. Although about one third of respondents believed that they at least partially had a personal responsibility for promoting green electricity, most believed the burden of responsibility fell even more heavily on the government and energy companies. Many also expressed little confidence that these actors are currently meeting their responsibilities.

In light of this, we can understand that there is also uncertainty about the ability to influence electricity production in a greener direction through personal choices, as long as other groups in society shirk their responsibility. The ability to make a difference proved to be a very important factor in understanding why most households do not choose to buy green electricity. In contrast to the recycling case, information about how other households act in the electricity market had no influence on willingness to buy green electricity. One possible explanation is that household purchases of electricity are difficult for outsiders to observe, unlike for instance their recycling behaviours.

Travel mode choice

The car is used for a high percentage of our daily trips and several factors must be considered in order to understand the incentives and constraints to more sustainable travel. Studies within SHARP show that the private use of cars is perceived as a serious environmental threat, globally, locally and for individuals personally. People are also aware that their own car use is an environmental problem. On the other hand, few social norms exist which decree that individuals should reduce their car use and only about half of households with access to cars feel a personal norm to reduce car use.

It is also clear that there are costs and sacrifices attached to reducing car use, for instance, alternative transport modes are perceived as too time-consuming or troublesome to use. People have often been using cars for a long time and many have developed a habit of using the car. This contributes to constraining the use of more sustainable alternatives. Research findings within SHARP thus show that there is high awareness that private car use is an environmental problem and that in some cases there is also a personal norm to reduce car use. At the same time, things like social norms, habits and costs constitute constraints to sustainable travel. Unlike recycling, for instance, there are thus several key factors that impede active individual decisions to reduce personal car use.

Final remarks

The preceding discussion shows that the incentives and constraints presented in Figure 1 are essential to understanding why Swedish households are generally good at recycling household waste, but poorer at buying green electricity and leaving the car at home for private household travel (see also Box 9). For instance, our research shows that relatively few feel a strong personal norm for buying green electricity, which can be largely explained by relatively low prob-
lem awareness and a negative view of their personal capacity to influence the environmental outcome by making active choices. This is a key explanation to why few households choose to buy green electricity. Willingness to reduce household car use is also limited, but problem awareness is higher here and most believe their own behaviour has significant impact on the environment. Here, the limited use of alternative transport modes can mainly be explained by the personal sacrifices required. In the recycling case, the corresponding sacrifices are often perceived as marginal, and high problem awareness, strong social norms and a positive view on the capacity to make a difference to the environment has led to most households feeling a strong personal norm to recycle.

**Box 9: Norms and individual capacity to influence environmental outcomes**

The figure below shows how households in four Swedish municipalities responded to a number of statements pertaining to personal norms (“I feel personal responsibility...”), social norms (“People who are important to me want me to …”), and their capacity as individuals to influence environmental outcomes. Households’ responses were coded on a five-point scale, where “5” indicated “agree entirely” and “1” indicated “disagree entirely.” The figure shows the average values for three household activities.

The most important implications for environmental policy may thus be summarised in the following points:

- **Problem awareness**, a positive view of personal capacity to make a difference, social pressure, and reasonable sacrifices are important factors that – in combination – influence household willingness to take personal responsibility for the environment in daily life.

- There are limits to how far one can progress in environmental efforts if focus is put on individual norms, especially when the sacrifices are perceived as substantial (see also below).
Household recycling: a matter of morality and convenience

One central purpose of the research on household recycling was to arrive at an understanding of the incentives and constraints that explain why – or why not – households choose to recycle. Only when we have expanded knowledge about these factors will we have solid grounds for designing (or changing) policy instruments related to household waste. The empirical analysis was based on the notion that individuals are driven by norm-based motives (such as desire to take personal responsibility) and financial motives (convenience, proximity, etc.).

Why do Swedish households recycle?

The question of incentives and constraints behind household recycling was studied using statistical analyses based on household surveys and data on the actual collection of household waste in Swedish municipalities. One important finding from both types of studies is that financial incentives and facilitating infrastructure have tangible, positive impact on recycling. The analyses show for instance that households with access to curbside collection generally report more extensive recycling of packaging waste, and in municipalities where curbside collection is prevalent, collection levels for plastic packaging are higher than in municipalities that do not offer this service. The empirical studies also show that municipalities that have: (a) weight-based waste collection fees; (b) high density of recycling stations; and (c) provide collection of sorted waste also have higher collection levels than other municipalities. Taken together, these findings thus show that policy measures aimed at facilitating household recycling in various ways have clear impact on the behaviour. Explicit economic incentives that make it more costly to not recycle seem also to affect the outcome in various municipalities (see also Box 10).

Generally speaking, there are few purely economic incentives to recycle and measures that make the work easier for households are only necessary – but not sufficient – conditions for stimulating increased recycling. Our research findings confirm that it is also important to activate norms, and the households studied generally feel a strong personal norm – a moral obligation – to recycle. However, the strength of the personal norm varies among individuals and this is an important explanation as to why some households recycle more than others. The social norms are also relatively strong (see e.g. Box 9), but differences in the intensity of these norms explain the variations among household ambitions to recycle only to a very small extent. These findings should primarily be interpreted as evidence of covariation between social and personal norms. Norms related to recycling are generally thoroughly internalised and a large percentage of household members are driven to recycle by “their inner voice” rather than direct influence from other people or public agencies.
Box 10: Collection of plastic packaging in Swedish municipalities

The figure shows a number of factors that tend to influence collection levels (kg per capita) of households’ used plastic packaging. The results are based on econometric analysis of outcomes in almost all Swedish municipalities.

- Increases if the municipality (a) employs weight-based collection fees; (b) has many drop-off stations per person; (c) has property-close collection schemes; and (d) is inhabited by environmentally aware citizens.
- Tends not to be affected by (a) demographic factors (population density, urbanization rate etc.); (b) income level; (c) political party in power; and (d) the age structure of the municipality.
- Decreases if the municipality (a) has a high share of immigrants; and (b) employs regional collection entrepreneurs (rather than municipal or national entrepreneurs).

The findings also point out the importance of proximity and financial incentives for households. But they also show that the cost structure encountered by collection contractors does not affect the outcome in the municipalities. One important reason for this is that the remuneration paid to contractors for their work varies among municipalities, and is higher in sparsely populated areas. Accordingly, municipal waste collection is not cost-effective. The results also show the occurrence of spill-over effects between nearby municipalities in the sense that if one municipality has a high collection percentage, the same tends to hold true in nearby municipalities.


However, the research also shows a strong correlation between household beliefs about the behaviour of other households: households that believe other households recycle frequently tend to do the same. This can be explained by several factors; one reasonable interpretation is that others’ behaviour functions as a moral compass indicating whether the individual should take personal responsibility for a particular issue. It also feels more meaningful and fair to recycle if other people do it too. It is thus important that decision-makers who want to design policy instruments aimed at increasing recycling understand how personal norms can be activated.
Box 11: Household recycling: norm activation and sacrifices

The figure shows a number of factors that activate a personal norm for household recycling and how the prevalence of personal norms – along with other factors – affects household efforts to sort packaging waste (paper, glass, metal and plastic) for recycling. The results are based on a postal survey of households in Eskilstuna (65 percent response rate).

All solid arrows in the figure show a positive (and statistically significant) correlation between the variables. Among the findings are that legal and social norms activate personal norms, and that older and well-educated people are more likely to feel a personal norm to recycle. The intensity of the personal norm is important to explaining the recycling outcome at the household level, but so are other factors such as access to curbside collection and housing conditions. Households who live in apartments tend to recycle less than other households (e.g. due to less storage space and limited proximity to a car).

The dashed arrows in the figure indicate correlations that were empirically tested but no statistically significant correlations were obtained. The results show for instance that the age of household members has no direct effect on recycling behaviour, but instead an indirect impact, in that older individuals are more likely (all other things being equal) to adopt a personal norm to recycle. In other words, that older people recycle more than younger people seems to depend primarily on moral reasons, and not due to a lower alternative cost for their time. The research also shows that the infrastructural conditions do not affect the intensity of the personal norm, but that the more recycling is facilitated for households, the less significant the personal norm becomes to stimulating the behaviour. Thus, in a neighbourhood with extensive curbside collection, activating personal norms through e.g. information campaigns is not as important.

Our study findings show that individual problem awareness is important and that this can be influenced with information about the positive environmental impact of recycling materials, for instance. Another critical factor is that individuals feel their behaviour is significant to the outcome; for instance, households who do not feel that their recycling will stimulate increased recycling and/or lead to a better environment are also less likely to recycle. Problem awareness and the capacity to make a difference are key factors in understanding recycling of all packaging materials studied in detail (paper, glass, metal and plastic), but they seem especially significant in the case of plastic packaging. The results also show that positive news about e.g. increases in recycling levels can stimulate households to take even greater personal responsibility for recycling.

In summary, the results show clearly that household recycling is a matter of both money and morality. Information and infrastructural measures that facilitate recycling in the context of daily life are thus central policy instruments for stimulating recycling (and maintaining the current high level of activity). Information about the positive environmental impact of recycling, the individual's significance to the outcome, and knowledge about others' behaviour are particularly important. Economic incentives – such as weight-based collection fees – also have positive influence on recycling.

Recycling: an effective – and fun – way to take environmental responsibility

The sacrifices households make – not least in terms of time – to meet official requirements for recycling have been studied by other researchers and debated in the media. This issue is important for a number of reasons; in particular, it is essential that the sacrifices are perceived as reasonable in relation to the environmental benefit. If not, the legitimacy of the waste policy is reduced. In addition, a number of studies show that the method of valuating households’ alternative costs for the time they spend is critical to the outcome of economic analysis of recycling systems.

Our research shows that households often spend about 40–50 minutes a week to recycle, and that about one third of this time is spent transporting the waste to a recycling station. But a very high percentage (about 50%) feel that the sacrifices they make are small or even non-existent, while about 20% feel they are great or very great. One explanation for this result is that recycling is often a well-integrated activity in various “household projects” (such as meals) and it is generally easy to perform recycling activities in daily life (for instance, recycling stations are often located close to large shopping centres).

However, it is reasonable to assume households want to spend their time wisely, and the alternative cost of time is zero only in a hypothetical situation in which there is nothing else to use the time on. Voluntary contributions to other collective utilities are also crowded out by recycling. We have shown above that the prevalence of personal norms is an important incentive for households to recycle, despite all, and that these norms are generally firmly inter-
nalised. A large percentage of households state that they recycle because they want to see themselves as responsible people and many agree with the statement that “recycling is an activity that makes me feel good.” Our studies also show that only a small percentage (about 30%) are willing to pay a higher waste collection fee for someone else, such as the municipality, to take over transporting the waste, and the people who feel a strong personal norm are clearly under-represented in this group. This suggests that even if households’ time has a positive (>0) alternative cost, this is balanced against other perceived advantages to recycling (such as enhanced self-image). See also Box 12.

Box 12: Recycling and household sacrifices

According to economic theory, households’ alternative cost of free time is equal to the “reservation wage,” which is the lowest possible level that will induce an individual on the margin to trade free time for paid work. In practice, this sum is often measured as an hourly wage after tax. In Sweden, this is usually presumed to correspond to an hourly cost of about SEK 60–80. However, our studies show that if one elects to estimate the (net) cost of the time by instead asking households how much (maximum) they are willing to pay for the municipality to take over the responsibility, either for all sorting and recycling or for transporting the waste, one arrives at a significantly lower amount of about SEK 4–8.

The findings also show that willingness to pay is determined by several factors. Older people, women and apartment dwellers are generally less willing to pay, including those who express a strong internalised norm in favour of recycling. Of those who are unwilling to pay more to be relieved of responsibility for all or part of recycling, the majority state that they do not want to be deprived of the opportunity to do things they “are happy to do themselves.”


These findings show that recycling represents an area in which society has succeeded at internalising norms and creating the conditions for habitual green behaviour in daily life. From the household perspective, recycling is a cost-effective way to take environmental responsibility, which may explain why many households see few advantages to changing the division of responsibility. This is mainly good news, but there may be a downside. Households cannot be expected to take responsibility for all collective utilities and situations that may arise in the future in which technical and/or institutional innovations make it more economically efficient for other actors to take over responsibility for all aspects of waste management. In such a position, there would be reason for public agencies to activate new norms among households (such as riding the bus), but households may perceive the new division of responsibility as a great sacrifice. People would be giving up something they have learnt to like and be expected to do something else instead, which might be more difficult to integrate easily into daily life.
Box 13: Recycling according to material flows: the Eskilstuna trial

The Swedish EPA designated Eskilstuna as a trial municipality in 2007 for a new waste management system based on material flows. The objective was to study how collection is affected when households are invited/required to collect hard plastic and metal materials in addition to packages made of these materials (including items like dish brushes, saucepans and cutlery). The trial started in September 2007 and lasted until September 2008. Two survey studies of 800 households in Eskilstuna were performed within the SHARP program. The aim was to study household recycling activities, histories and attitudes before and after the materials collection trial. The figure shows responses to one question in which households assessed what percentage of their total hard plastic and metal waste they deposit at a recycling station or in curbside containers (if available). The results show that even before the trial, many households (about one third) sorted waste by material rather than by packages, and the responses after the trial show an increase in this behaviour.

The trial results also show that households report that they spent more time during the trial on recycling, and that they recycled a larger percentage of their metal and hard plastic packages, but also glass packages. Essentially no changes could be discerned with regard to perceptions of social norms, constraints, control, information, etc. Nor were there any changes in the perceived positive effects and sacrifices involved in recycling metal and hard plastic as a result of the new system.
Policy implications

The studies on recycling performed within SHARP lead to several key conclusions that may be used as a basis for policy measures related to waste management:

- Moralistic instruments play a key role in engendering household commitment to recycling; it is very important to maintain household confidence that recycling: (a) generally leads to positive environmental outcomes; and (b) that their personal contributions are meaningful in the context.
- Initiatives that target youth and recent immigrants may be useful. These groups recycle less than average, but there may be scope to increase their contributions using simple means.
- One key lesson is that positive contributions have spill-over effects: if one municipality recycles frequently, neighbouring municipalities tend to do the same, and if households believe that others in the same municipality recycle frequently, they tend to do likewise. This can be utilised in information campaigns that, for instance, showcase neighbourhoods where recycling works particularly well.
- Economic incentives – such as weight-based collection fees – and infrastructure measures that facilitate recycling in daily life have a clearly positive impact on the outcome, but these measures are most effective when they are part of a larger policy package that also contains targeted information to households.
- Recycling represents a good example of how public agencies can activate norms and establish the infrastructure that makes households want to act according to these norms and take active responsibility for the environment in their daily lives. However, we should be careful about drawing too far-reaching parallels to other areas in which the sacrifices are often more extensive. Recycling is generally perceived as easy to integrate in daily life, while other measures (such as reduced car use) impose much greater demands for changes in the way households have chosen to organise their lives.
The advantages and limitations of ecolabelling: historical crossroads and lessons learnt from green electricity

The research on ecolabelling as an instrument for sustainable consumption patterns first analysed the historical development of the three most common ecolabels in Sweden: “KRAV”, “The Swan” and “Good Environmental Choice”. In a number of in-depth studies, we also analysed the factors that influence households’ willingness to buy (or not buy) green electricity. Another study investigates the corresponding willingness to compensate the climate effect of carbon emissions by buying carbon credits.

Historical crossroads in the development of Swedish ecolabels

KRAV was born when the National Association of Alternative Farmers formed the Alternative Farming Control Association. The Swedish Cooperative Union, which joined KRAV only one year later, was a key mover. A reason with more long-term effect was the awakening of environmental concern in the 1960s and more specifically the “green wave” of the early 1970s, when during a brief period a significant minority of Swedes, mainly young people, moved to the rural countryside. The more radical among them wanted to go back to nature, including farming in “harmony with nature”. In actuality, the green wave swelled the ranks of already existing organisations. The Swedish offshoot to the anthroposophic movement rooted in the ideas of Rudolf Steiner in the 1910s, who advocated biodynamic farming among else, came about in 1944 with the Biodynamic Association (Biodynamiska Föreningen, BF). A few years later in 1951, the Natural Farming Association (Föreningen Naturenlig Odling, FNO) was formed for farmers who found it difficult to accept anthroposophy. BF, who were involved in taking the initiative to form KRAV, had their own label, “Demeter.” Many people were critical of distribution through the established retail trade and maintained the practice of direct delivery to customers and shops that Demeter stood for (and still does). While BF and Demeter represent the strictest organic rules, their sales are limited. The formation of KRAV entailed an expansion to include a wider customer base, but also the loss of “organic purity” in favour of alliances between the retail trade and industry.

We have thus seen a crossroads in organic farming and sales between the puritan and the “inclusive” paths represented by Demeter and KRAV, respectively. Another crossroads is found in connection with the establishment of the Swan label. The Swedish Society for Nature Conservation (SSNC) is an old
organisation and its membership grew strongly in the 1980s, from 85,000 to 150,000 between 1985 and 1987, reaching its zenith in 1991 with 206,000 members. This was a period when the environment was high on the agenda in Sweden. SSNC then initiated a new element in its activities, consumer pressure on producers. The organisation published a book in 1988, *Handla miljövänligt* [“Green Shopping”], which guided consumers to green products. The SSNC carried out promotions related to the book in the form of “The Green Week” and held discussions with grocery chains ICA, Coop and Axfood about ecolabelling. However, the SSNC postponed its launch because the organisation was also involved in working out the details of the Nordic ecolabel, the Swan.

The Nordic Council of Ministers took the initiative to establish an ecolabel system in 1989. The project went slowly and the SSNC became impatient and complained that “industry” had been given substantial influence over the criteria for the label. At that time, the SSNC had adopted a confrontational strategy. By 1987, the SSNC had begun protesting the paper industry’s chlorine-bleached paper, which they said was poisoning lakes. They joined Friends of the Earth Sweden in drafting demands for chlorine-free paper, which were a success: chlorine discharges were halved between 1990 and 1993. The boycott of Via laundry detergent in 1991 garnered even more attention. Lever Brothers, which manufactured Via, was caught by surprise. Instead of discussions with SSNC, the company was facing a purchasing boycott. The action was very successful for SSNC, since Lever launched an entirely new detergent by 1992, and the whole range of detergents followed suit. The market share for ecolabelled laundry detergent increased from 1% to 90% between 1990 and 1995.

**Box 14: Sales of ecolabelled food**

The figure shows how COOP’s sales of three different types of food with the ecolabels Änglamark (roughly, “Angel Land”, Coop’s own brand) and KRAV have changed over time. The negative trend for bread and cereals is due mainly to that many bakers discontinued organic bread products after 2002. Despite the increases in absolute terms, ecolabelled products make up only about 2 percent of household expenditures on food (2006), and the percentage has remained relatively constant since the beginning of the 2000s.
After this crossroads, we gained two ecolabels, the Swan and Good Environmental Choice, for consumer staples other than food. This also meant that SSNC expanded its organisation with a section that developed criteria, certification and controls related to ecolabelling. While the Swan, or more accurately SIS Miljömärkning AB, has a well-planned method for drafting criteria and other standards for ecolabelled products and services, similar work is performed by SSNC with fewer resources. The work involved with ecolabelling always entailed some form of cooperation, primarily with the retail trade – without them, the organisations cannot reach out to a wide consumer base. And cooperation always involves compromise. SSNC’s choice to launch its own label, paradoxically enough, put the brakes on the organisation’s activism and campaigns. Lessons learnt in the campaigns of the early 1990s indicated the success of negative tools, that is, drawing public attention to harmful ingredients and encouraging boycotts. Ecolabelling is a positive tool aimed at guiding the consumer to benefit the relatively more sustainable producer. The former is probably as important as the latter.

Despite the successes within certain product groups and increases in ecolabelled sales after 2002 according to some reports, it must still be acknowledged that the market share for ecolabelled products is rather limited. The market share is only 2% and the sales percentage (in SEK) somewhat lower. Among other consumer staples, the market share is considerably higher at about 8%, and the sales percentage even higher, at about 20%. However, these percentages obscure significant differences when looking at individual product groups. The percentage of organic dairy products (consumption milk, acidified products and cream) for instance increased rather quickly from 1% in 1995 to about 7% in 2006 (see also Box 14). In particular, organic low-fat milk and eggs are big sellers, with market shares of 11–12%, compared to other organic foodstuffs.

Organic products are more expensive, but the price difference is unsurprising – organically grown foods should be more expensive because toxin-free farming yields smaller harvests, thus increasing the cost per unit of grain, and so on. But other research also notes the additional handling costs in stores, since organic products, often in small volumes, must be labelled and repackaged to be stored separately from conventional products. The additional cost to the consumer would be even higher if state subsidies for sustainable production were discontinued.

As well, there is probably some cross-subsidisation on farms with mixed production. Research within SHARP shows that consumers have little opportunity to make a difference through their choices. What the consumer can do is conditional to a great extent upon the infrastructure available, and a choice among products does not examine total consumption volume. The consumer’s choice of ecolabelled products is a tacit, positive choice that only rewards the relatively better product; it needs to be augmented with other ways to express environmental concern.
Why don’t Swedish households buy green electricity?

Households and businesses have been able to choose suppliers who offer green electricity since the deregulation of the Swedish electricity market in 1996. Many power traders offer electricity deliveries with the “Good Environmental Choice” label, which is administered by the Swedish Society for Nature Conservation. If a household chooses such a contract, they are also actively rejecting sources like oil, coal and nuclear power and contributing instead to greater use of sources like wind power and biofuels. Green electricity costs more than conventional power, but the mark-up has generally been relatively low, in many cases only a few öre per kWh. In spite of this, only a very small percentage (1–2%) of Swedish households has chosen to buy green electricity. Why?

The results of our studies show that almost half of all respondents were somewhat willing to pay a price premium for green electricity, but also show that households are price-sensitive. While 49% accepted a price increase of 2 öre, only 8% said they were willing to buy green electricity if the price increase was 10 öre per kWh. Households with electric heating express significantly lower willingness to buy green electricity.

The prevalence of norms plays a key role in understanding why certain households express willingness to buy green electricity. The stronger the personal norm households express with regard to green purchases on the electricity market, the more likely they are to accept the price premiums offered in the experiment. However, this effect is weakened by the widespread belief that choosing the green alternative has no positive impact. A full 48% of the respondents agreed wholly or partially with the statement: “If I choose to buy green electricity, it is by no means certain that it will stimulate increased production of green electricity.” This shows that there is general scepticism in this area, not necessarily about the product concept as such, but perhaps more towards other groups in society and what they are doing to promote the production of green electricity. Although about one third of respondents believed that they (at least partially) had a personal responsibility for promoting green electricity, most believed the burden of responsibility fell even more heavily on the government and energy companies. Many also expressed little confidence that these actors are currently meeting their responsibilities. In light of this, it is easy to understand the uncertainty about the ability to influence electricity production in a more sustainable direction by making personal choices as long as other groups in society shirk their responsibility. Information about how other households act in the electricity market played no meaningful role with regard to willingness to buy green electricity. One possible explanation is that household purchases of electricity are difficult for outsiders to observe, unlike for instance their recycling behaviours. One interesting finding, however, was that respondents who believed family members and close friends thought they should buy green electricity (“prescriptive social norms”) also expressed
greater willingness to do just that. In this case, pressure from others was thus most effective if it came from close quarters. To an extent, this limits opportunities to refer to the positive behaviours of others in public information campaigns.

The study cited above is based on households taking personal responsibility for paying a price premium for green electricity, but one alternative would be for public agencies to decide that the consumer collective as a whole must pay such a price premium. Sweden currently has an electricity certificate system based on precisely these principles. In one SHARP study, we investigated whether the factors that affect household support for green electricity vary depending on whether the factor is based on individual or collective responsibility. The results show that with respect to individual choice, it is especially important that households believe their choice has positive impact on production decisions by energy companies and on the environment. General environmental awareness is also key. If households are instead asked to support a collective undertaking to increase the production of green electricity, these factors become less significant and that which explains the differences between households is instead the prevalence of “fairness norms” (“I have a responsibility to contribute as long as others do too”). In other words, this shows that the design of policy measures aimed at increasing acceptance of green electricity must vary depending on whether the support is meant to be based on individual or collective responsibility. In the former case, activation of a personal norm is the key and moral policy instruments such as environmental information take on added importance.

Who wants to purchase carbon credits?
The impact of descriptive norms

Aimed at reducing carbon emissions, the European Union implemented trading in emissions allowances in 2005. At present, mainly companies trade in these rights (carbon credits), but the Swedish Society for Nature Conservation has started a service that makes it possible for consumers to buy carbon credits. If an individual chooses to buy a carbon credit, it means that some industrial facility within the EU must reduce its carbon emissions by one tonne, for instance by investing in new technology. In this way, the individual’s purchase contributes to reducing carbon emissions.

The results from one of our studies of students show that individual willingness to buy carbon credits is influenced largely by the same type of factors as in the cases of recycling and green electricity. Respondents who ascribed themselves personal responsibility for doing something about carbon emissions also expressed a general willingness to buy carbon credits. The prevalence of such a norm was stronger if respondents had high problem awareness of the climate issue, and were convinced that their purchases would lead to
actual reductions in carbon emissions. However, price was also an important factor, and willingness to pay dropped significantly as prices rose (see Box 15).

Since consumer purchase of carbon credits is a relatively new phenomenon in Sweden, we also studied whether the individuals in the study were influenced by information about what other individuals had declared themselves willing to pay for carbon credits. The results show that respondents who believed that people in general were willing to buy carbon credits (that is, 50% or 70% participation) were also more likely to express a personal norm for buying carbon credits themselves, compared to those who were told that the assessed participant percentage was low (10% or 30%). The more people believed others wanted to contribute, the more willing they were to personally contribute to reducing emissions via trading in emissions rights. This result is consistent with the idea that when the individual is uncertain about the degree of personal responsibility, she may relate to what others do: if they are contributing to the common good, the individual is more willing to do the same.

**Box 15: Individual willingness to buy carbon credits**

The figure shows a number of factors that activate a personal norm to buy carbon credits as an individual. Individuals who: (a) are female; (b) have high problem awareness of the climate issue; (c) believe that their choice has impact on emissions; and (d) believe that others are highly willing to buy carbon credits are also more likely to internalise a norm. Along with the price of the carbon credit, the prevalence of such a norm is critical to the choice to buy.

Policy implications

SHARP research on the significance of ecolabelling to household consumption patterns has been far from comprehensive, but a few key implications can nevertheless be identified:

- There are limits to the progress that can be achieved with ecolabelling. This type of instrument often entails strong individualisation, while the environmental issue often requires the collective adoption of attitudes.
- It is essential that households are convinced their choices actually matter in the context, both that they influence decisions by relevant actors (such as energy companies) and that these decisions lead to environmental improvements. Due to the cognitive demands that surround such considerations, it is unreasonable to expect the individual to be able to actively “force” ecolabelled products onto the market. The supply of products – and initiatives from responsible companies – is at least equally significant to increasing the market share of ecolabelled products.
- In certain cases, it may be possible to create a positive loop of increased participation by referring to other households that are active consumers of ecolabelled products. However, these opportunities are constrained by the fact that such purchases are often made privately and are not always visible to other households and consumers.
- In some cases, it is more effective to make consumption more sustainable by relying on collective, rather than individual, responsibility. It can often be less complicated to build acceptance for such systems (as long as everyone is expected to contribute) than to rely on individual, voluntary choice. Households largely accept that the environmental issue is a matter of collective choice, which to a certain extent constrains individual latitude for free choice.
Transport policy measures for more sustainable household travel

The SHARP program has studied opportunities and constraints to more ecologically sustainable household travel. More specifically, household willingness to reduce car use for daily travel and attitudes towards transport policy measures aimed at reducing negative environmental impact were studied in four empirical studies.

Environmental awareness, problem awareness and norms among households

Factors including general environmental awareness, problem awareness and norms among households were studied in two survey studies of a random sample of households in four municipalities (Piteå, Huddinge, Göteborg and Växjö) in 2004 and 2006. The findings show that households have a relatively high degree of general environmental awareness, women more so than men, younger people more than older, and the highly educated more than those with less education. There was no difference in this respect between households with access to cars and households without access to cars. Households also demonstrate a high degree of awareness of the problems caused by air pollution from use of cars. People perceive air pollution as a serious global threat, a somewhat less serious threat nationally and locally (in the municipality) and even less so as a personal threat. The findings show that the higher the level of general awareness, the more serious the perceived threat from the use of cars. We find that women, young people and highly educated people tend to perceive the threat as more serious than do men, older people and the less highly educated. With regard to air pollution as a local and personal threat, there are also differences between households that have access to cars and those that do not. Three out of four households that do not have access to a car agree entirely or partially that use of cars is a local threat and a personal threat, while only about half of households that have access to a car have the same view.

The results of the first survey show that less than half of households that have access to a car agree entirely or partially that they have a moral obligation to reduce their car use (a personal norm). This percentage increased to slightly more than half in the second survey. Only two out of five households with access to cars agree that society and central and local government authorities expect households to reduce their use of cars (societal norm) and that figure did not change between the first and second surveys. Very few people believe that people who are important to them want them to reduce their use of the car (social norm), which has not changed over time. However, we find that the percentage of households that are willing to reduce their car
use increased from slightly less than half in the first survey to slightly more than half in the second.

The findings also show that there are strong correlations between general environmental awareness, personal norms, societal and social norms on the one hand, and a desire to reduce the negative environmental consequences of car use on the other. The studies thus show that a large majority of households are aware of the problems caused by private car use, but somewhat fewer believe individuals should reduce their car use.

Perceptions of opportunities to reduce car use among households with access to cars

Opportunities to reduce car use were studied in a field experiment among households with access to cars in Piteå and Huddinge in 2005. The primary focus was the constraints and opportunities that households perceive with regard to reducing car use, how households’ habitual use of the car can be interrupted, and how various strategies for reducing car use are perceived by households with access to cars. Generally speaking, the results of the field experiment show that there are several constraints to sustainable travel behaviour, such as strong habitual car use, weak motivation to reduce car use, and external constraints. Among those who habitually use cars, car use can be reduced if they start to think critically about their travel behaviour and also have inner motivation to reduce their car use, for instance in the form of a strong personal norm. For that reason, it is important to interrupt habitual car use so that the inner motivation to modify the travel behaviour can be realised. Many car users also lack strong motivation to reduce their car use, and their inner motivation must be strengthened for them to voluntarily consider reducing their car use. Yet another problem is that many car users believe that external constraints prevent them from modifying their travel behaviour. As a result, they believe it is difficult to reduce their car use and a context that supported more sustainable travel behaviour would make it easier for these car users to make the switch.

When car users think about how they can reduce car use, their main consideration is opportunities to use alternative transport modes, such as public transport or riding a bicycle/walking. They do not consider other ways to reduce car use to any great extent, such as changing the destination or cancelling trips. When car users see opportunities to reduce car use, they prefer primarily to coordinate trips (for instance, shop on the way home from work), ride a bicycle or walk. They are more favourable towards using the car more efficiently than to switching to public transport or cancelling trips to reduce car use. However, none of the strategies to reduce car use are perceived as easy, and not using the car for shopping trips is perceived as the most difficult change to implement.
One general constraint to reducing car use is the belief that alternative modes of transport, primarily public transport, do not meet people’s travel needs. For instance, alternative transport is perceived as a poorer choice if one has a lot to carry and is also thought to take too much time and/or be too much of a bother to use. The results thus show that there are several contextual and psychological constraints standing in the way of reducing use of cars.

Measures intended to reduce the environmental impacts of private car use

Various types of measures can be taken to achieve more sustainable travel behaviour. Technical solutions and measures intended to modify household travel behaviours can both be implemented. Measures aimed at modifying travel behaviour are often categorised as “soft” or psychological measures (e.g. information and education) versus “hard” or structural measures (such as laws and regulations, economic instruments, changes to the physical environment).

A distinction can also be made between push strategies intended to make car use less attractive and pull strategies aimed at making the use of alternative modes of transport more attractive. Higher taxes on fossil fuels is a common push strategy, while improvements to public transport are a common pull strategy.

The two surveys studied which measures were accepted by households with cars and the factors that affect acceptance. More specifically, we studied the degree of acceptance, perceived effectiveness and perceived fairness with regard to common measures. The results show that the greatest acceptance was expressed for improvements to public transport and investments to improve access for cyclists and walkers. There was also high acceptance for subsidies of renewable fuels. About half of households with access to cars participating in the second survey supported personalised information about public transport, while about one fourth supported a general information campaign studied in the first survey. Households with access to cars have a neutral attitude to expansion of central pedestrian zones, but a high percentage were opposed to higher taxes on fossil fuels. Generally speaking, measures that entailed improvement of alternative modes of transport were perceived as more effective and fairer than other measures. Higher taxes on fossil fuels were not perceived as particularly effective and, first and foremost, were perceived as unfair to the individual personally and to residents of the municipality.

Policy packages can be implemented simultaneously in order to increase acceptance and effectiveness. For that reason, acceptance of two measures combined in a policy package was studied in the second survey. The first policy package devoted higher carbon taxes on fossil fuels to improve public transport and in the second package, higher carbon taxes on fossil fuels were set aside to subsidise renewable fuels. The results showed that only one out of five households with access to cars was in favour of the package in which
the tax increase was combined with improved public transport. Somewhat more, one third of households with access to cars, were in favour of combining the tax with renewable fuel subsidies. Households with access to cars also believed it was more likely that they would switch to a car that runs on renewable fuel within one year if the tax on fossil fuels were increased in tandem with subsidies for renewable fuels, but the percentage was still relatively low compared to the number who would do so if the policy package was not implemented (23% compared to 6%). Both policy packages were perceived as unfair and not particularly effective, but both were perceived as fairer and more effective than higher carbon taxes alone.

**Box 16: Householder acceptance for various measures and policy packages**

The figure shows acceptance for various push and pull strategies and two policy packages in which a push strategy was used to finance a pull strategy. Generally speaking, acceptance for a push strategy such as a tax increase was low, but acceptance was somewhat higher for the policy package, while acceptance was higher for pull strategies.

Key: (a) Tax = increased tax on fossil fuels (such as petrol and diesel); (b) Public = increased subsidies of public transport in your municipality (such as cheaper tickets, more frequent service); (c) Renewable = Subsidies of renewable fuels (such as cheaper biogas, ethanol, RME); (d) Pedestrian C = Expanded central pedestrian zone in your municipality; (e) Information = increased focus on personalised information about public transport in your municipality; and (f) Bicycle/foot = increased focus on improved access for bicyclists and walkers in your municipality.

Source: Results from SHARP survey (2006), N = 616
For various types of measures to be accepted by households with access to cars, it is above all important that they are perceived as effective and fair. There is also support for the notion that push strategies, such as higher carbon taxes on fossil fuels, are accepted to a greater extent if the car user has a strong personal norm, while acceptance for a pull strategy, such as improvements of public transport, can be enhanced by high problem awareness.

A scenario-based survey study directed at a random sample of car owners in Växjö in 2007 supports the notion that a combination of push and pull strategies, that is, higher taxes on fossil fuels and improved public transport, leads to higher expected reduction in car use compared to isolated measures. As with the field experiment, this study showed that the reduction would primarily occur through making car use more efficient and switching transport modes. There were also some disparities between which strategies would be used depending on the measures that were implemented. If a tax increase was implemented, it was more likely that bicycle/walking would be used and, if public transport was improved or both taxes increased and public transport improved, it was more likely that public transport would be used to reduce car use.

Policy implications

Although general environmental awareness is relatively high among households with access to cars, the studies show that multiple strategies and policy packages are needed to alleviate constraints to sustainable travel behaviour:

• More distinct action from central and local government can strengthen societal norms in favour of reduced car use so that signals from society become more consistent. Social norms in favour of reduced car use should also be enhanced through various local initiatives in neighbourhoods, workplaces and the like.

• Since car users feel that alternative modes of transport are unavailable and think poorly of public transport, especially compared to the car, it is necessary to continually improve opportunities to use public transport, ride bicycles and walk. There is also high acceptance for such strategies.

• In order to counteract habitual car use and strengthen motivation to modify travel behaviour, it is important to combine pull strategies to improve alternative modes of transport with push strategies that constrain car use. When pull strategies are combined with push strategies, acceptance for the push strategy may increase and the combined strategy may lead to greater reduction of car use compared to the strategies in isolation.

• Psychological measures such as personalised information campaigns can be used to strengthen individuals’ motivation to modify their travel behaviour, for instance by focusing on the local and personal negative consequences of car use while emphasising the moral motivations for reducing car use. It is also necessary to increase awareness about how travel behaviour can be modified.
Box 17: Beliefs that affect acceptance of various strategies

The figure illustrates the beliefs that can explain acceptance for various transport measures. Both more general environmental beliefs, such as problem awareness and personal norms, as well as strategy-specific beliefs, such as perceived effectiveness and fairness, contribute to explaining acceptance of push and pull strategies. However, personal norms tend to be more important to acceptance of push strategies and problem awareness more important to acceptance of pull strategies.

Source: Results from SHARP survey (2006), N = 616

Box 18: What would households do if taxes on fossil fuels were increased?

The figure shows the likelihood that households with access to cars would use various strategies for reducing car use if a higher tax or a combination of higher tax and improved public transport were implemented (7 = very likely, 0 = not likely at all). The results show that households would most likely make their car use more efficient by creating trip chains and switching transport modes. It was somewhat less likely that households would carpool with others. The least likely outcome was that households would change their destinations or refrain from travelling.

Source: Results from scenario-based survey study in Växjö (2007)
(Higher tax: N = 92, Higher tax and improved public transport: N = 86)
Project 1

Households’ Response to Political Sustainability Aspirations – A Question of Policy Legitimacy (2003–2008)

Participants

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Core questions

The project analyses the correspondence between Swedish environmental policy and household values and attitudes to clarify the circumstances under which policies are perceived as legitimate. The project also aims to explain the effectiveness of policy instruments vis-à-vis households. Based on the values and attitudes of households, which instruments, such as regulations, fees and information, can be expected to be most effective towards building a sustainable society?

Methods and material

Among else, people’s values affect how Swedish environmental objectives are perceived and complied with at the household level. If people share the values on which environmental policy is based, it is said to have legitimacy, which favours the willingness to live as the policy prescribes. The first step in analysing the legitimacy of Swedish environmental policy is thus to identify the fundamental values and rules of conduct upon which it is based. This has been done by means of a thorough review of policy documents at the national and municipal levels. The next step is to analyse citizens’ fundamental values and beliefs about the environmental policy and associated control instruments, which has been done using two large surveys.
Publications


**Examples of program outreach**

Carina Lundmark presents the SHARP Programme at the Challenges and Prospects for Northern Development Conference, University of Lapland, 21–22 February 2008, Rovaniemi, Finland.

Simon Matti is interviewed about research within the SHARP Programme on Swedish Radio P1 Vetandets Värld, 7 February 2007.

Simon Matti presents research from the SHARP Programme at the Swedish EPA’s Environmental Journalists Seminar, 30 January 2007.

Simon Matti is interviewed in the magazine *Grus och Guld* about the paper ”Citizen or Consumer: The Dual Role of Individuals in Environmental Policy,” *Grus och Guld*, 2007.


Simon Matti invited as panel member/commentator in the radio show “Annandagsmorgon”, on the topic of pro-environmental behaviour, values and public policy. Swedish National Radio P1, April 13 2009.

Simon Matti invited speaker to Norrbotten County Council (Democracy Committee) on the topic of “the Significance of legitimacy in political decision-making”, October 14, 2009.
Project 2


Participants
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Core questions
The project is based on the hypothesis that although sustainable development is predicated on household involvement, lawmakers are normally unwilling to impose environmental requirements that control the daily behaviours of households in a coercive sense. The project discusses and tests the hypothesis from various angles.

Methods and material
The project will first study current law, primarily with regard to the programme’s three prioritised areas of focus (household activities). The question is to what extent the law promotes versus hinders household sustainability. The findings will serve as input for other projects in the programme. In this project, legal norms will be compared to moral norms (behaviours expected of households, expressed in policy documents, surveys, etc.). The comparative study will be performed in close cooperation with experts in the fields of law and political science. The legal project will also include a theoretical discussion of the role of law in relation to the everyday behaviours of individuals (households). This phase will include examination of standpoints on these issues in legal doctrine (with regard to both general jurisprudence and environmental law) and how personal behaviour is controlled by law other than environmental law.
Publications
Project 3


Participants
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Core questions
The project analyses the interplay between the daily actions of households and environmental policy. The aims are to understand how household members perceive their responsibility for creating and solving our shared environmental problems and to identify opportunities and barriers to persuading households to participate in building a more sustainable society.

Methods and material
As this study is activity-oriented, the methods used to collect the material have consisted primarily of interviews, accompanied by hourly diaries intended to capture the everyday context. In virtually all cases, household members were interviewed as a group in their homes. The hourly diaries were distributed at the initial interview and were signed the following week. Follow-up interviews...
conducted thereafter were based on the hourly diaries. A total of 64 household members were interviewed. The minimum age for keeping an hourly diary was twelve years. Forty-five diaries were collected.

**Publications**


**Examples of program outreach**

Skill, K., presentation “Mellan vardagligt görande och grönt tänkande” at the Swedish Teachers’ Union Conference, Lika för Lika, 8 March, 2008.


Skill, K., presentation of the SHARP Programme to the Women, Environment, Development Organisation (WEDO), New York, USA.
Project 4


Participants
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Core questions
The main aim of the project was to study the significance of financial and norm-based motives for households’ everyday recycling activities and their purchases of ecolabelled products. The latter component will focus mainly on household choices with regard to green electricity. The studies were primarily aimed at analysing the driving forces behind household choices in these two areas, followed by an assessment of the impacts of various types of policy instruments.

Methods and material
The empirical studies were based mainly on econometric analysis of self-reported behaviour, as identified in two large surveys of households in four Swedish municipalities and two smaller surveys of households in Eskilstuna and nationwide, respectively. The survey-based studies were augmented with statistical analysis of secondary data, including recycling statistics at the municipal level from Förpackningsinsamlingen and data from the “Household Budget Survey” (HBT) database from Statistics Sweden.
Publications


Ek, K., & Söderholm P. Shared or Individual Responsibility: Framing Effects in the Case of Public Support for Green Electricity, unpublished manuscript.


**Examples of program outreach**

Patrik Söderholm presents research on household recycling within the SHARP Programme at the Swedish EPA Environmental Journalists Seminar, 30 January 2007.

Patrik Söderholm presents key conclusions of SHARP research to the Piteå Municipal Council, 15 September 2008.

Kristina Ek & Patrik Söderholm’s research on green electricity is the lead story on the front page of Dagens Nyheter (full page on p. 6), 13 August 2007. The article was covered by several other national and local media outlets (e.g., Söderholm was interviewed on TV4).
Christer Berglund participates in a televised debate on the waste policy (Swedish Television, Channel 1; Gomorron Sverige); 2004.


Olle Hage; Sustainable Waste Management – the Case of Household Recycling, seminar and workshop given at the Russian Academy of Government Service in Moscow, Russia, March 29–30, 2010.


Olle Hage is interviewed about his thesis in local television and Radio (Nordnytt and Norrbottens radion), February, 2008

Olle Hage is interviewed about his thesis in national media (Lönsam Återvinning), spring 2008.
Project 5
Sustainable Transport in Households
(2003–2008)

Participants
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Core questions
The aim of the project was to study factors that can be presumed significant to household willingness to reduce personal car use for daily travel and to their attitudes towards transport policy measures intended to reduce the negative environmental impact of car use. More specifically, the project explored the following questions: (a) what impact do general environmental awareness, problem awareness and norms have on more sustainable travel behaviour?; (b) what are car users’ perceived opportunities and constraints to reducing car use? (c) how well are various transport policy measures accepted and what factors affect the degree of acceptance?; and (d) how is the intention to modify travel behaviour affected by various transport policy measures?

Methods and material
The project used the following research methods: (a) a survey distributed to a random sample of residents of four municipalities (Piteå, Huddinge, Göteborg and Växjö) in 2004; (b) a survey distributed to a random sample of residents of four municipalities (Piteå, Huddinge, Göteborg and Växjö), as well as elected officials and civil servants in the same municipalities, in 2006; (c) field experiments among car users in two municipalities (Piteå and Huddinge) in 2005; and (d) a scenario-based survey study distributed to a random sample of residents of the Municipality of Växjö in 2007.

Publications


Examples of program outreach


Nordlund, A. (2007). *Vilken är effekten av miljöinformation?* Lecture during the course ‘Humanekologi’, Umeå University (Summer University), Umeå.

Nordlund, A. (May 2007). *Vad påverkar oss till miljörelevant beteende?* Lecture during the course ‘Miljövetenskapliga strimman’, Umeå School of Environmental Studies, Umeå University, Umeå.


Project 6
From Consumerism to Sustainable Behaviour (2007–2008)

Participants
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Kristina Söderholm, Assistant Professor, History of Technology Unit, Department of Business Administration and Social Sciences, Luleå University of Technology, tel + 46 920 491541, e-mail: kristina.soderholm@ltu.se

Core questions
The main question of the project is how household consumption patterns have changed since the 1950s. This is explored through four sub-questions: (a) what trends have occurred in Swedish consumption and environmental policy?; (b) what long-term patterns can be seen in household expenditures for energy and with regard to product and transport choices; (c) what lessons are learnt through living in an ecovillage?; and (d) what lessons have been learnt from ecolabelled products?

Methods and material
The main empirical material comprised Statistics Sweden’s Household Budget Surveys, interviews with residents of an ecovillage and with representatives of various ecolabels. Additional material included various documents, such as government inquiries and evaluations and studies of ecolabelling.

Publications


Examples of program outreach
Hilde Ibsen gives a lecture on “Konsum og livsstil”, Municipality of Karlstad, 4 December 2007.
Hilde Ibsen gives a lecture on “Hållbart medborgerskap”, at Karlstad University, 28 January, 2008.
Hilde Ibsen gives a lecture on “Tuggelite og visjonene om en bærekraftig hverdag”, at Miljövetardagen, Karlstad University, 31 January 2008.
SHARP (Sustainable Households: Attitudes, Resources and Policy) is a five-year multi-disciplinary research program on household behaviour and environmental policy. In this report the main results as well as the policy implications from the research are summarized.

The objectives of the research have been to: (a) investigate the role of households and household behaviour in achieving environmental policy objectives; (b) analyse the constraints that households face when performing environmental activities, and how they organise and integrate these activities in daily life, given these constraints and given their environmental attitudes and values; and (c) clarify the circumstances under which environmental policy instruments will be effective and perceived by households as legitimate.

The research is methodologically based on a combination of context-dependent studies (such as time diaries, in-depth interviews, field experiments etc.) and broader studies based on large data bases and survey studies directed at a large representative sample of households. The majority of the empirical studies focuses on conditions in four Swedish municipalities: Göteborg, Huddinge, Piteå, and Växjö.

The research was conducted during the time period 2003–2008, and has been funded by the Swedish Environmental Protection Agency and the research council Formas. The program comprises six social science projects, which involve researchers from Luleå University of Technology, Linköping University, Umeå University and the University of Karlstad.