SUSTAINABLE LIFESTYLES: TODAY'S FACTS & TOMORROW'S TRENDS

UNSUSTAINABLE LIFESTYLE TRENDS IN EUROPE food, housing & mobility as sustainability hot spots
TRENDS TOWARDS SUSTAINABILITY promising practices & social innovation
INFLUENCING BEHAVIOURS understanding diversity, context-dependency & change
ENABLING ENVIRONMENTS infrastructure, innovation, economy, research & policy
POLICY SOLUTIONS fostering prosperity & healthy sustainable ways of living

D1.1 Sustainable lifestyles baseline report

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SPREAD Sustainable Lifestyles 2050

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SPREAD
Sustainable Lifestyles 2050

ABOUT SPREAD SUSTAINABLE LIFESTYLES 2050

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CONTENTS

ABBREVIATIONS

CABS	Climate-adaptive building shells
CFL	Compact fluorescent lamp
CHP	Combined heat and power
CSCP	Centre on Sustainable Consumption and Production
CSO	Civil Society Organisation
DESIS	Design for Social Innovation and Sustainability network
EC	European Commission
EEA	European Environmental Agency
EEB	European Environmental Bureau
EPBD	Energy Performance of Buildings Directive
EPD	Environmental Product Declarations
EU-15	The 15 Member States of the European Union before May 2004 (AT, BE, DE, DK, ES, FI, FR, GR, IE, IT, LU, NL, PT, SE, UK)
EU-27	The current 27 Member States of the European Union (all of the above, plus BG, CZ, CY, EE, HU, LT, LV, MT, PL, RO, SI, SK)
FSA	Food Standards Agency of the UK government
GPP	Green public procurement
ICT	Information and communications technology
IPCC	Intergovernmental Panel on Climate Change
LOHAS	Lifestyles of Health and Sustainability
NGO	Non-governmental organisation
OECD	Organisation for Economic Co-operation and Development
PERL	Partnership for Education and Research about Responsible Living
SCP	Sustainable Consumption and Production
SCP/SIP	Sustainable Consumption and Production and Sustainable Industrial Policy
SDS	Sustainable Development Strategy
SEAP	Sustainable Energy Action Plan
SEP	Sustainable Everyday Project
TFSL	Task Force for Sustainable Lifestyles
UK SDC	Sustainable Development Commission of the UK government
UNCSD	United Nations Commission for Sustainable Development
UNEP	United Nations Environment Programme
WBCSD	World Business Council for Sustainable Development
WHO	World Health Organization
WSSD	World Summit on Sustainable Development

"Young people around the world are well aware of environmental challenges, but the connection between such challenges and their lifestyles is not clear to them. There is a great need to translate these challenges into actions and opportunities at the local and individual level, as well as to create a holistic and pragmatic vision of what a sustainable society is."
— **Fabienne Pierre,** *Programme Officer, UNEP*

"A big shift from the 20th century hyper-consumption, to a 21st-century age of collaborative consumption is under way. The convergence of social technologies, a renewed belief in the importance of community, pressing environmental concerns, and cost consciousness are moving us away from the old forms of consumerism toward one of sharing, aggregation, openness, and cooperation."
— **Rachel Botsman,** *Author and Founder, Collaborative Consumption, SPREAD project advisor*

EXECUTIVE SUMMARY

OUR PURPOSE

As a part of the SPREAD Sustainable Lifestyles 2050 project, this report provides a synthesis of research, leading policy and practice, and stakeholder views on potential pathways toward sustainable lifestyles. The purpose of this report is to provide the necessary background information to support the SPREAD social platform participants in creating a holistic vision of sustainable lifestyles in 2050 and recommendations for a plan of action.

Because of the significance of housing, transport, food, health and society, this report focuses on these key domains. It aims to better understand the relationships between lifestyles, the conditions that frame those lifestyles, and the resulting sustainability impacts in Europe today and into the future. In addition, it identifies promising practices from across Europe that have the potential to be examples of sustainable ways of living of the future. Existing visions, scenarios and roadmaps for more sustainable futures – from policy, research, business and civil society perspectives – are also examined in detail.

Lifestyles refer to the way we live our lives that allows us to fulfil our needs and aspirations. They serve as "social conversations", in which people signal their social position and psychological aspirations to others. Since many of the signals are mediated by goods, lifestyles are closely linked to material and resource flows in the society.

Sustainable lifestyles refer to patterns of action and consumption, used by people to affiliate and differentiate themselves from others, which: meet basic needs, provide a better quality of life, minimise the use of natural resources and emissions of waste and pollutants over the lifecycle, and do not jeopardise the needs of future generations. Sustainable lifestyles reflect specific cultural, natural, economic and social heritage of each society (Mont 2007).

MAIN THEMES IN THIS REPORT

1. **Unsustainable lifestyle trends in Europe: Food, housing and mobility as sustainability hot spots**
2. **Trends toward sustainability: Promising practices and social innovation**
3. **Influencing behaviours: Understanding diversity, context-dependency and enabling change**
4. **Enabling environments: Infrastructure, innovation and multi-level, multi-stakeholder change processes**
5. **Policy solutions: Fostering prosperity and healthy, sustainable ways of living**

UNSUSTAINABLE LIFESTYLE TRENDS IN EUROPE: THE HOT SPOTS

Sustainable consumption is related to the purchase, use and disposal of products and services. Sustainability in lifestyles is a broader concept and includes activities such as interpersonal relationships, leisure activities, sports and education as well as, but not limited to, material consumption. Lifestyles are based on past and current consumption and production patterns and are intricately interwoven with people's everyday choices and practices (Mont 2007).

Modern European lifestyles are unsustainable in many ways and are based on overproduction and overconsumption; putting too much pressure on our natural resources and imposing negative environmental, economic, (individual and collective) social and health impacts. Understanding consumption patterns and their resulting environmental and social impacts has been a major focus of recent research in Europe. Highlights of research findings concerning consumption impacts that are driven by lifestyle choices include:

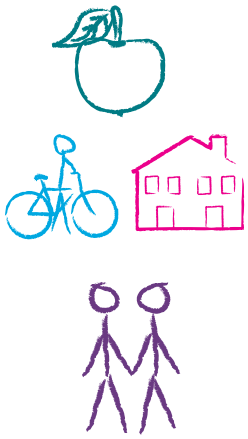
- Together, final consumption of food and drink, private transportation and housing are the source of 70-80% of Europe's environmental impacts (Tukker and Huppes 2006).
- Meat and dairy consumption alone account for almost one quarter (24%) of all final consumption impacts – by far the largest share in the food and drink sector (Weidema et al. 2008).
- Domestic heating, water consumption, appliance and electronics account for 40% of Europe's total energy consumption (with space heating alone accounting for 67% of household energy consumption in the EU-27) (EEA 2010).
- Car ownership in the EU-27 increased by more than one third (35%) between 1990 and 2007 (EEA 2010). Over one third of the world's 750 million automobiles are owned by drivers in the EU (IEA 2010).
- In the EU-27, approximately 60% of adults and over 20% of school-age children are overweight or obese. Coronary heart diseases (CHD), which are often associated with fatty foods and smoking remain the single most common cause of death in the EU (WHO 2011).

Understanding the factors that influence individual behaviour in favour of sustainable patterns (with a priority focus on the impact hot spots identified above) requires a broader understanding of individual lifestyle contexts and the systems within which different individual lifestyles operate. It is these two areas: (1) understanding individual lifestyle motivators, influencers and triggers; and (2) the systems, infrastructure boundaries and enabling environments that drive the way we choose to live our lives that are the focus of the SPREAD sustainable lifestyles 2050 project and this baseline report.

Policy measures in these areas have tended to focus on environmental impacts of consumption and production processes and technology solutions, rather than on how and why people select and use products. On the consumption side, policy instruments mostly focus on the provision of information about products. Examples of economic instruments, such as taxes on luxury consumption items are extremely rare and inadequate in the light of growing social inequities.

The policy measures implemented to date have proven insufficient in the face of rising incomes, material living standards and the consequent aggregate impacts of consumption as well as the widening gap between rich and poor. A key factor in this dynamic is the widely held perception of well being as intimately linked to a high level of material consumption in the dominant consumer culture of the twentieth century.

TRENDS TOWARDS SUSTAINABILITY: PROMISING PRACTICES AND SOCIAL INNOVATION



Despite the prevailing unsustainable trends outlined above, a growing number of people are aspiring toward lifestyle changes that support increased sustainability, for themselves and for the societies in which they live. There exist a growing number of movements, initiatives, entrepreneurs and new business models that aim to facilitate sustainability in the way we consume, live and move. Some examples include:

- Shifts towards efficient consumption (wasting less), different consumption (shifts to high quality goods and services), and sufficient consumption (reducing material consumption) demonstrate opportunities for sustainable ways of utilising products and services.
- Collaborative consumption (sharing, swapping, trading, etc.) reveals a shift in preferences away from ownership of goods to "access" to goods and services and from being passive consumers to becoming co-producers of goods and services (e.g. urban farming; growing your own food).
- Household behaviour change to conserve energy and make investments in energy efficiency signals an increasing awareness and readiness to shift to more sustainable ways of living.
- Cities and municipalities are supporting modal shifts in transportation toward walking, cycling and public transit as well as new technologies, such as electric vehicles.
- Community and city action demonstrates the success of participatory approaches to sustainable, long-term living and mobility options such as eco-towns, sustainable city initiatives and Transition Towns.
- Promising synergies are emerging for health, equity and well-being through a re-examination of the way we live, eat and move.

Social innovation is a process where civil society actors develop new technologies, strategies, ideas and/or organisations to meet social needs or solve social problems. Social innovation is not limited to one specific issue or domain and can include microcredit, municipal services, community development, innovative social entrepreneurship, new models of travelling or working.

The SPREAD project has chosen to examine in detail the four key lifestyle impact areas of consuming (food, household and leisure consumer products), living (the built environment and homes), moving (individual mobility and transport), and health and society (health, well-being, ageing, and equity). The table below illustrates key challenges and impacts, and promising sustainability trends and practices within each of these four lifestyle impact areas.

Table 1 Key challenges and promising practices for more sustainable ways of living

Lifestyle area	Key challenges and impacts	Promising sustainability trends and practices
Consuming	High or rising environmental impacts due to: ▪ Food and drink consumption, in particular meat and dairy ▪ Increasing long distance transportation of goods, particularly import of non-seasonal and exotic foods ▪ Increasing use of chemicals in food production and increasing consumption of processed food	▪ Increased awareness of sustainability issues among many European citizens ▪ Emergence of collaborative consumption (sharing, lending trading, swapping) ▪ Growing availability and demand for eco-efficient or organic/ecological products and foods ▪ Growth of urban farming ▪ Movements toward consumption reduction (e.g. meat consumption)

Living	High or rising environmental impacts due to: ▪ Increasing number of households (e.g. more single-person households) ▪ Increasing individual living spaces ▪ Increasing consumption of energy and water despite recent energy efficiency gains in household appliances ▪ Growing number of electricity consuming appliances and devices in households ▪ Rebound effects	▪ Growing availability and demand for environmentally friendly appliances ▪ Increasingly successful energy efficiency efforts in private households ▪ Increasing awareness and behaviour change for energy and water conservation ▪ Emergence of energy-efficient, passive and energy-positive housing ▪ Emergence of innovative urban planning approaches ▪ Cities or neighbourhoods that support sustainable living
Moving	High or rising environmental impacts due to: ▪ Increasing numbers of passenger cars ▪ Oil dependency (a consequence of passenger car use) ▪ Increasing mobility needs related to urban sprawl and urban structures that favour car use (e.g. shopping facilities in the urban periphery) ▪ Rising air travel and cheaper air fares	▪ More efficient transportation technologies, such as electric vehicles ▪ Growth in car sharing services that show a shift away from private ownership to collaborative consumption ▪ Increasingly successful efforts to stimulate modal shifts toward walking, cycling or public transportation ▪ Strategic urban planning to decrease mobility needs and make sustainable modes of transport safer and accessible
Health and society	High or rising health impacts, such as: ▪ Increasing levels of obesity and heart disease associated with poor diets and inadequate lifestyle choices ▪ Increasing of respiratory and heart diseases associated with poor housing conditions ▪ Increased availability and low prices for highly processed, unhealthy food products High or rising social inequity: ▪ Per capita environmental impacts are considerably higher in high income groups than in lower income groups ▪ Low income groups are more affected by adverse sustainability effects (e.g. climate change, local air pollution, rising energy prices) ▪ High income groups are more likely to have healthier diets	▪ Growing awareness and better information on healthy diets and lifestyles (e.g. labelling) ▪ Increased availability and demand for local, ecological and seasonal food ▪ Initiatives that promote walking, cycling and limit cigarette smoking in buildings ▪ Increasingly successful efforts to integrate health and equity considerations into policy making and urban planning

To enable large-scale transitions to sustainable lifestyles current promising practices point to two important areas for further work:

- **Understanding and supporting individual behaviour change; and**
- **Creating enabling environments and infrastructure that stimulate and support more sustainable ways of living.**

To influence modern consumer culture a final and very important dimension of future work is to identify opportunities to shape non-material aspirations for people by engaging the media, trend-setters, celebrities and businesses that are experienced with steering consumer culture that have an interest in supporting and shaping a post-modern sustainability culture.

INFLUENCING BEHAVIOURS: UNDERSTANDING DIVERSITY, CONTEXT-DEPENDENCY AND ENABLING CHANGE

Current sustainable action strategies rarely acknowledge the diverse needs, desires and motivations of individual people. Strategies tend to be "single issue – single solution" approaches and often focus on technological innovation or policy solutions in isolation. Initiatives often target a separate industry, the public sector or households without taking into consideration the trade-offs and compromises that are required for people to pursue sustainable ways of producing, working or living.

Successfully changing behaviour depends on understanding people and the diversity of lifestyles and access to sustainable lifestyle options. There is a growing body of knowledge on processes for behaviour change and the factors that influence the success of these processes.

Key success factors include:

Acknowledging and nurturing diversity by providing a broad range of solutions and options:
Changes toward sustainable lifestyles involve behaviour changes across age and socio-economic groups and across population segments with varying levels of knowledge, awareness, and interests. Successful sustainability initiatives are those that go beyond the "one size fits all" approach and try to understand how to motivate and enable change among different groups. This requires solutions and combinations of solutions to fit specific contexts and target groups that are not necessarily easily transferred from one situation, setting or domain to another one.

Making it easy by adapting the context to support sustainable lifestyles:
Long-term change toward sustainable lifestyles can be achieved by making it easier, cheaper, and more enjoyable to make sustainable choices by developing appropriate infrastructure and devising context-specific solutions in the framework of enabling institutions.

One example of facilitating sustainable choices is the idea of "nudging", encouraging rather than compelling people, which implies learning about how people think and designing environments that embed or normalise sustainable options.

Nudging through various types of non-intrusive and non-coercive policy interventions is an emerging trend in European policy making.

Systemic and holistic approaches through multi-stakeholder involvement: Research on change processes highlights the need for stakeholder participation and a focus on end-users (both for technology and policy). This is needed to enable the development of instrument packages that are tailored to contexts and that use a range of tools (regulatory, economic, information) to influence diverse stakeholders and target groups.

If a mainstreaming of sustainable lifestyles is to be achieved, considerably more will be required than local innovation and small-scale initiatives that trigger shifts to more sustainable individual behaviours. Current unsustainable behaviours are often "locked-in" due to existing infrastructure and systems of provision, such as in transportation or energy supply. This emphasises the role of integrated multi-level and multi-stakeholder approaches in creating enabling environments that facilitate sustainable lifestyles and long lasting change.

Participation refers to mechanisms to empower those affected by a decision and other relevant actors to participate in decision-making processes. Participatory decision-making can take place along political, technological, ethical, cultural, social, judicial and other decision-making processes.

ENABLING ENVIRONMENTS: INFRASTRUCTURE, INNOVATION, ECONOMY, RESEARCH AND POLICY

Enabling behaviour change and lifestyle options that will support a sustainable future will require innovation, cooperation and participation at all levels of society's policy, production and consumption systems to create the necessary infrastructure and change in the very way we perceive progress and individual success.

Infrastructure

- **Sustainable neighbourhoods, communities and cities are emerging through co-creation and participation.** Buildings, public space and urban infrastructure are important to enable sustainable lifestyles, for example through increased energy efficiency, reduced car use and more social and community activities. Compact, complex and efficient cities with strong social cohesion promote sustainability and well-being and are being created through participatory multi-stakeholder urban planning approaches.
- **Roadmaps for future lifestyles are being developed within sectoral approaches.** Visions and scenarios of sustainable futures have been developed by a range of actors in recent decades. These efforts have focused on different sectors, societal actors and approaches.

Co-creation is a strategy where those who are affected by a development (e.g. investors, firms, governments, citizens) interact, share, learn and develop technologies, products, concepts, services, or neighbourhoods in such a manner that value is created for all.

Innovation

- **Small-scale initiatives are important test-beds for large-scale sustainable solutions.** Strategically implementing and networking among small-scale initiatives can create an environment that supports large-scale change by connecting relevant stakeholders and groups, such as from the policy or business domain.
- **Both social and technical innovation is an important driver for change.** Technical innovation creates opportunities for sustainable lifestyles and is the subject of significant attention from policy makers, the research com-

munity and businesses. However, it is social innovation that can and does stimulate and sustain lifestyle changes through, for example, new online or offline communities or networks that share knowledge, ideas, tools, solutions and experiences. Social entrepreneurs and designers are important change agents in the search for sustainable lifestyles.

Economy

- **Our aspirations for prosperity are intrinsically linked to current patterns of economic growth (Jackson 2009).** The current situation is the result of two misconceptions upon which the current economic system rests. The first is the belief in unlimited natural resources and natural sinks capable of absorbing environmental pollution. The second misconception is the belief in continuous economic growth without limit (Daly 1977). For 200 years, these two assumptions have facilitated constant improvements in labour productivity at the cost of resources that are underpriced, and at a cost to the environment that is rarely priced at all.
- **Many actors in society now accept the need to redefine the current economic paradigm to take into consideration the environment, quality of life and well-being and to balance growth, profits and consumption.** Several multi-lateral initiatives have been launched recently by, for example, UNEP and OECD, to address the complex task of integrating economic and environmental considerations into Green Growth Strategies (Sukhdev 2009; UNEP 2009). Such "beyond GDP" discussions aim to develop measurable indicators to track the transition from consumption- to value-based societies based on, for example, health, education, sound governance, living standards and biodiversity. In terms of an individual's personal life this could imply a reduced focus on material wealth in place of greater engagement with the environment, with the well being of one's self and that of others (SPREAD consortium 2011).

Research

- **Research on the sociology of consumption indicates the need for a paradigm shift in thinking** about how to foster changes towards more sustainable lifestyles; from a focus on individuals, to a focus on wider communities and social norms and practices; from a focus on changing discrete behaviours to a focus on changing entire lifestyles, cultures and values; from a focus on top-down approaches and information provision to shared community approaches and leading by example (Breukers et al. 2009; Jackson 2005; Mont and Power 2010; Power and Mont 2010b).
- **To date, research priorities have not yet been reconciled with practice with an emphasis on the aspects of people and lifestyles.** The European Commission's DG Research has begun supporting socio-technical platforms, such as a SPREAD project, and societal networks alongside existing technical platforms to engage different stakeholders in the development of concrete research agendas and implement research strategies.

Policy

- **Effective policy and governance set the framework conditions for business and societal innovation.** There is a considerable body of evidence that hard policies such as regulatory and economic instruments can be effective at achieving policy objectives. Governments are beginning to take responsibility for discouraging or limiting unsustainable consumption options and are looking to develop new governance approaches to support effective implementation of sustainable lifestyle measures.

- **Green growth, de-growth and "beyond GDP" discussions suggest the viability of different models of measuring and creating wealth and prosperity** that rely less on resource and energy intensive consumption. However, to date EU and national level policy making has not meaningfully reflected these developments.
- **The emergence of integrated and cross-sectoral approaches to policy making aims to overcome policy silos** to address social equity, health, infrastructure as important elements for promoting sustainability.

Conclusions

Current consumption levels and lifestyle patterns require prompt and coherent action across stakeholder groups and sectors at the micro to macro scale. Most promising change processes and innovation that supports sustainable lifestyles involves a deeper understanding of lifestyle impacts, human behaviour and environments that foster change.

The findings of this baseline report resonate with relevant research literature and practical experience. Knowledge about the underlying drivers of current unsustainable lifestyles and how behaviour could be positively influenced is still in its early stages. A coherent, holistic and people-centred vision would be an important milestone on the road to sustainable lifestyles in Europe by 2050.

The SPREAD Sustainable Lifestyles 2050 project

The SPREAD Sustainable Lifestyles 2050 project is a European social platform that will operate between January 2011 and December 2012. Stakeholders from business, research policy and civil society have been invited to participate in the development of a vision for sustainable lifestyles in Europe in 2050. This process will develop a roadmap and pathways for immediate actions necessary to enable lifestyles with a reduced impact on the environment, while also delivering improved life quality and well-being for all by 2050.

The project aims to identify opportunities and innovation spaces for policy makers, business and society to enable sustainable living options that support a more sustainable future for all Europeans. Based on the outcomes of the social platform process, the SPREAD project will also formulate a research agenda that identifies further sustainable lifestyle research needs.

Table 2 Taking key themes forward within the SPREAD project

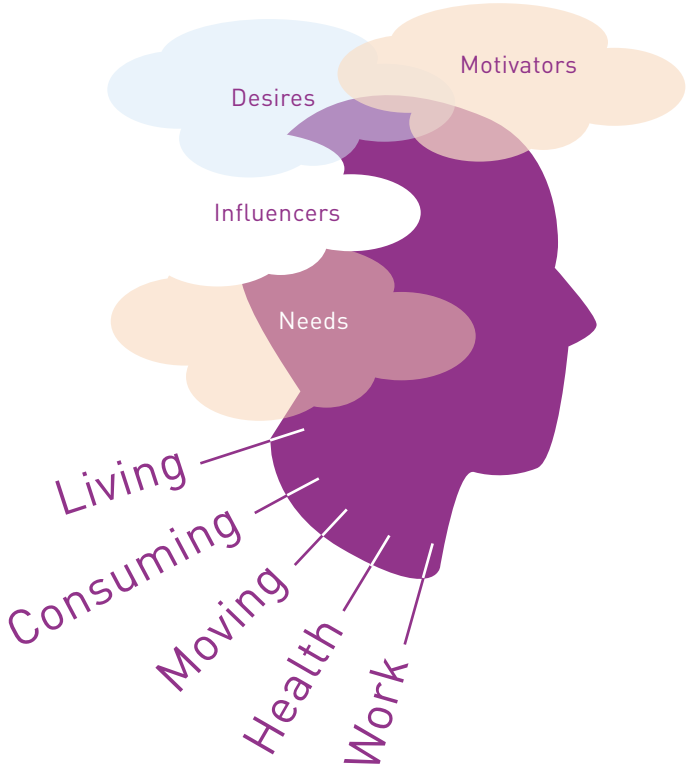
Key theme	SPREAD project output
Unsustainable lifestyle trends and impacts	Vision and futures scenarios for sustainable living in 2050
Promising practices for sustainable ways of living	Project emerging promising practices into the future and visualise resilient future practices
Understanding people's diversity and framing lifestyle changes	People's Forum
Technical, social, policy and business innovation that enables sustainable ways of living	Vision, pathways and action strategies for different stakeholder groups
Policy solutions and economic systems that foster prosperity and healthy, sustainable lifestyles	Agenda for future research needs for sustainable lifestyle solutions and (large-scale) implementation

To contribute to the vision of sustainable lifestyles in 2050, please visit our online community www.sustainable-lifestyles.eu/community.

INTRODUCTION – OUR LIFESTYLES ARE AT THE CENTRE OF OUR SUSTAINABLE FUTURE

- **Current lifestyles and consumption patterns are unsustainable**
- **Our aspirations for prosperity are intrinsically linked to current patterns of unsustainable economic growth**
- **Meeting our individual needs and desires within the limits of available resources is our collective challenge**

There are many factors that contribute to human behaviour and the choices each of us makes in choosing how we live. Our lifestyles reflect our sense of self, our world views and our values. Lifestyle is how we prefer to live, spend our time, interact with others, who these others are, where we live, where we vacation, where we shop and what we consume.



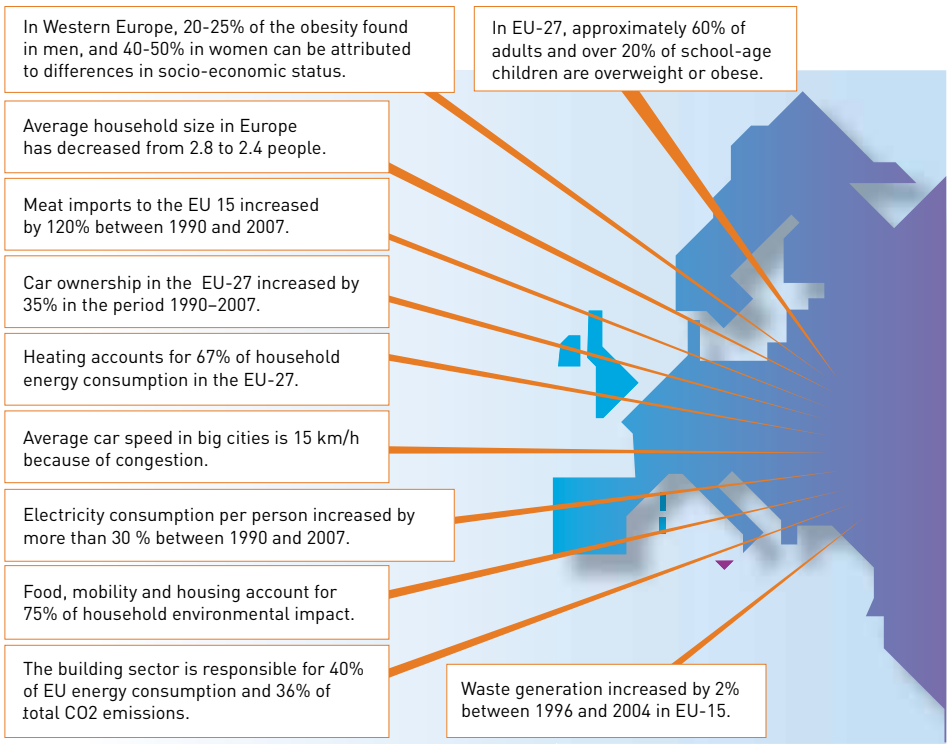
"Meeting the needs and desires of all citizens, while addressing the global megatrends which promise widespread resource constraints, scarcity and threats to well-being, is the major challenge of our future. We will need to act quickly to get us on track to more sustainable lifestyles for all by 2050."
— **Per Sandberg**, *Senior Manager, Accenture Management Consulting, Accenture Sustainability Services, SPREAD project advisor*

UNSUSTAINABLE LIFESTYLES AND CONSUMPTION PATTERNS

Lifestyles help to fulfil our needs and aspirations and function as "social conversations" through which we communicate our social position in society and our likes and dislikes to others. Much of this communication is mediated by the products we consume, the services we use and the possessions we keep. Therefore, lifestyles have tremendous impact on the flow of goods and services in society and are closely linked to production and consumption patterns and resource consumption in our societies.

Current lifestyles and consumption patterns are unsustainable. Consumption levels have increased six-fold since the 1960s. The global population has doubled, while consumption expenditures per capita have almost tripled (Lorek & Spangenberg 2001; Tukker, Huppes et al. 2006; EEA 2010b). Food and drink, housing, mobility and tourism are responsible for a large part of the pressures and impacts caused by consumption in the EU. Greenhouse gas emissions from each of these consumption domains are equal or greater than the 2050 EU target for all of these activities combined (ETC/SCP 2009).

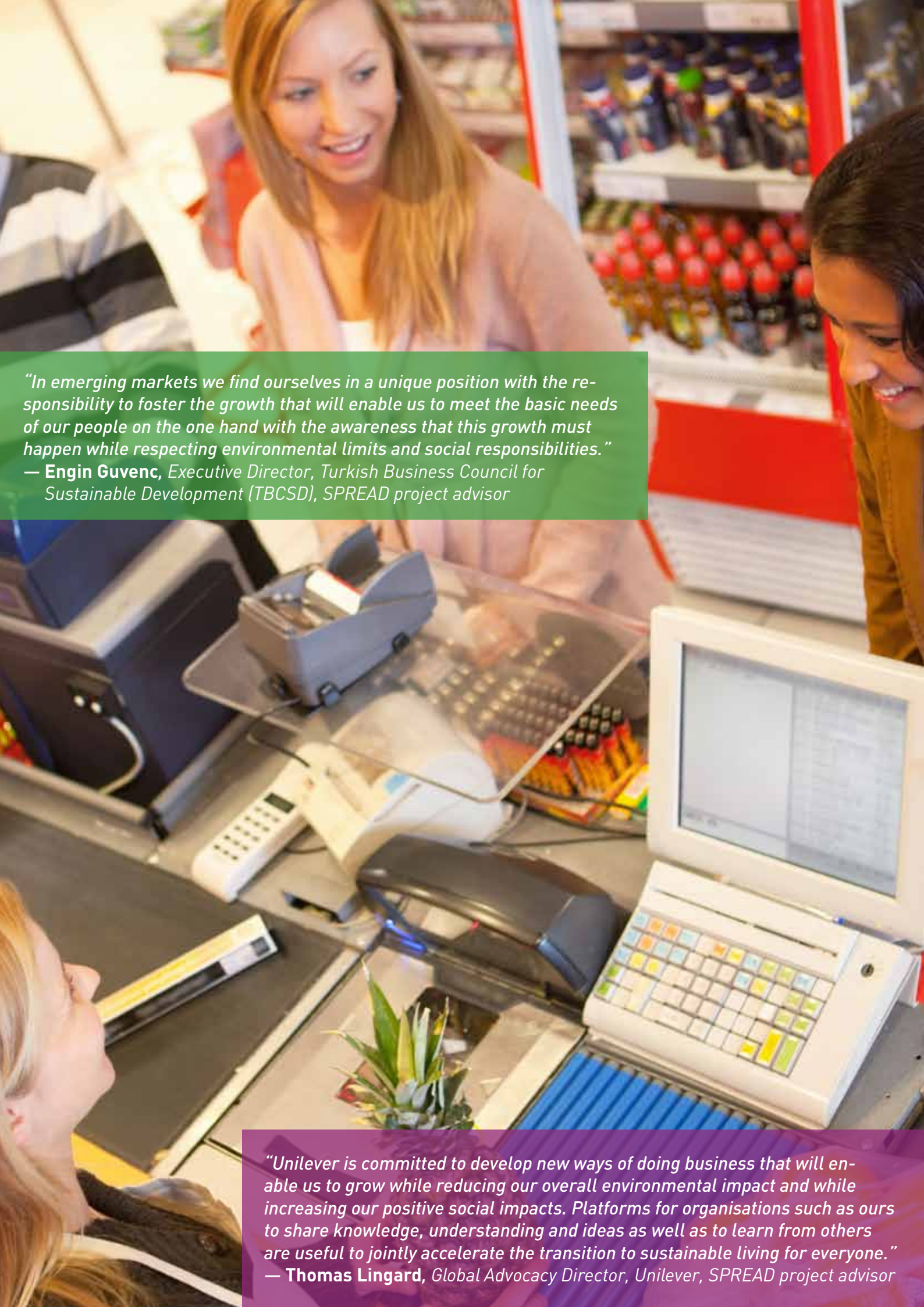
Figure 1 Examples of unsustainable consumption in Europe



LIFESTYLES AND THE INTERNATIONAL AGENDA

Global environmental protection, including consumption related issues, has been on the international policy agenda since the United Nations (UN) conference on the Human Environment in 1972. However, "despite more than 900 environmental treaties coming into force in the past 40 years, human-induced

Environmental degradation has worsened despite 40 years of effort to protect the global environment.



"In emerging markets we find ourselves in a unique position with the responsibility to foster the growth that will enable us to meet the basic needs of our people on the one hand with the awareness that this growth must happen while respecting environmental limits and social responsibilities."
— **Engin Guvenc,** *Executive Director, Turkish Business Council for Sustainable Development (TBCSD), SPREAD project advisor*

"Unilever is committed to develop new ways of doing business that will enable us to grow while reducing our overall environmental impact and while increasing our positive social impacts. Platforms for organisations such as ours to share knowledge, understanding and ideas as well as to learn from others are useful to jointly accelerate the transition to sustainable living for everyone."
— **Thomas Lingard,** *Global Advocacy Director, Unilever, SPREAD project advisor*

environmental degradation is reaching unprecedented levels" (GEC 2011: 1). It has become a much-quoted truism that consumption behaviour in developed countries must become more sustainable to address the enormous inequalities between rich and poor countries, while at the same time respecting environmental limits (UNCED 1992; WCED 1987).

LIFESTYLES AND THE ECONOMY

Our aspirations for prosperity are intrinsically linked to current patterns of unsustainable economic growth. The current situation is the result of two misconceptions upon which our current economic system rests. The first is the belief in unlimited natural resources and natural sinks that can absorb environmental pollution. The second is the belief in continuous economic growth (Daly 1977). For 200 years, these two misconceptions have led to constant improvements in labour productivity at the cost of underpriced resources and often unpriced environmental impacts, such as the loss of fresh air or clean water.

The current unsustainable situation is the result of two misconceptions:

- Unlimited resources
- Continuous economic growth

Many societal actors now contend that the current economic paradigm needs to be redefined to take environment, quality of life and well-being into consideration and to reconcile these needs with economic growth, profits and consumption. Several multi-lateral initiatives have been launched in recent years, for example, by UNEP and OECD, to address the complex task of integrating economic and environmental issues into Green Growth Strategies (Sukhdev 2009; UNEP 2009). "Beyond GDP" discussions aim to develop measurable indicators to evaluate the transition from consumption- to value-based societies with measures to evaluate, as examples, health, education, governance, living standards and biodiversity. In terms of an individual's personal life this could imply a shift from a focus on a narrow definition of material wealth toward a focus on personal and societal well being and engagement with the environment (SPREAD consortium 2011).

"Beyond GDP" discussions aim to develop measurable indicators to evaluate the transition from consumption- to value-based societies with measures to evaluate, health, education, governance, living standards and biodiversity

LIFESTYLES, POLITICAL AND BUSINESS AGENDAS

Governments and businesses are considering shifts toward more sustainable business models and the green economy as part of the transition to more sustainable economic models (UNEP 2010; WBCSD 2010). Green economy concepts link economic growth with environmental sustainability and advocate substantially increased investments in economic sectors that build on and enhance the Earth's natural capital or reduce ecological scarcities and environmental risks. Priority areas for investment include renewable energy, low-carbon transport, energy-efficient buildings, clean technologies, improved waste management, improved provision of fresh water, sustainable agriculture and forest management, and sustainable fisheries.

Leading businesses have started to re-align their business models to leverage the potential opportunities of a pollution-constrained and less resource dependent world. Sustainable business models aim to minimise social and environmental impacts, optimise efficiencies and develop new markets for sustainable products and services in response to the emerging global megatrends of climate change, resource depletion, combined with the need to alleviate poverty and improve health and well-being.

SUSTAINABLE LIFESTYLES AND CONSUMPTION PATTERNS

Sustainable lifestyles are ways of living that allow people to meet their personal needs and aspirations, while allowing current and future generations to do the same. **Meeting our individual needs and desires within the limits of available resources is our collective challenge.** This means, among other things, minimising natural resource consumption and emissions of waste and pollutants while ensuring equal access to education, health and other services.

Since lifestyles reflect the specific cultural, natural, economic and social heritage of each society, more sustainable options to live our lives will not only depend on people's personal needs and desires but also on their specific environments (Mont 2007). Understanding what influences and motivates the way we live, as well as what we hope and dream for the future, helps to provide different options for ways of living that support a more sustainable future.

Equity, access to resources and quality of life for all are major challenges for the future.

"Greening" the economy and fostering sustainable business is an important step, but the technological and efficiency solutions proposed to date will not solve the problems of inequity, access to resources and the provision of a satisfactory quality of life for all. Increasing consumption levels still clearly outpaces technological efficiency improvements and needs to be specifically addressed.

Demand-side management, technological as well as social innovation and innovative types of collaborative consumption are necessary to secure the long-term stability and prosperity of modern societies. Sustainability needs to be translated into our daily lives as easy and desirable lifestyle options. This report discusses each of these issues individually and each chapter can also be read as a stand-alone piece:

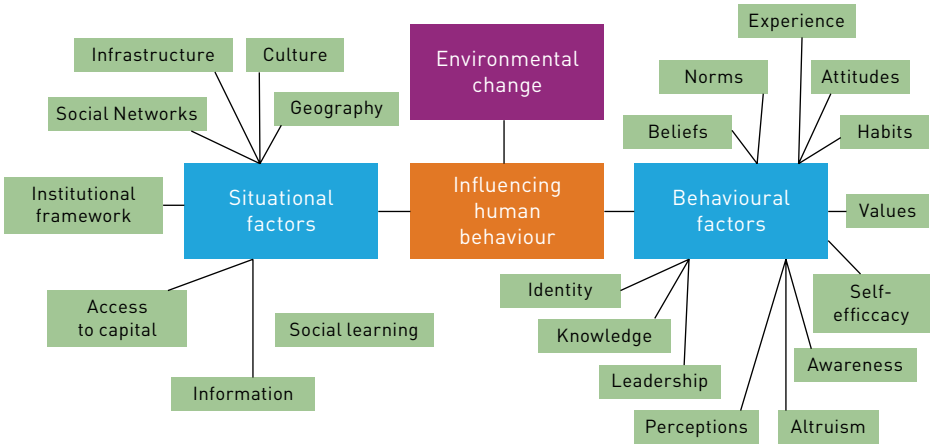
- Current definitions and views on lifestyles and sustainable lifestyles (*What are sustainable lifestyles?*).
- Relationship of European and global trends to lifestyles and consumption levels (*Global megatrends and European lifestyles*)
- Challenges and opportunities to change in the four lifestyle domains of consuming, living, moving, and health and society (*Challenges and opportunities for sustainable lifestyles*).
- Mechanisms to stimulate, motivate and support resilient lifestyle change (*SPREADing sustainable lifestyles*).
- Management of multi-actor and multi-level transitions, such as the mainstreaming of sustainable practices, including changes of norms and values, and overcoming current "locked in" unsustainable behaviours (*A framework for change*).
- Examples of global, EU and national-level policy initiatives that address sustainable lifestyles and a discussion of available policy instruments to support lifestyle changes (*Policy initiatives for large-scale changes*).
- Examples of scenarios, visions and roadmaps developed by different groups of actors and research projects related to sustainable lifestyles (*Roadmap and research initiatives for large-scale changes*).
- An explanation of how the SPREAD project will take the main themes and findings of this report forward within the SPREAD Sustainable Lifestyles 2050 process (*Looking ahead: How the SPREAD project will use this baseline report*).

WHAT ARE SUSTAINABLE LIFESTYLES?

Many actors and factors influence human behaviours and lifestyles.

It is difficult to translate what sustainability issues like global climate change, deforestation, water stress and the loss of biodiversity mean for our everyday lives and the decisions we make about how we live, move and consume. There are many factors contributing to human behaviours and lifestyles (Figure 2). Understanding these factors informs the development of sustainable lifestyle solutions that address human motivations and barriers at the individual and society-wide levels.

Figure 2 Situational and behavioural factors influencing human behaviour



Source: Defra, Sustainable Lifestyles Framework, 2011.

This section highlights definitions from existing research to provide the context for a broader lifestyles debate. It finds that:

- **Lifestyles relate to our ways of "doing", "having", "using" and "displaying".**
- **Sustainable lifestyles aim to ensure that everything we do, have, use and display meets our needs and improves our quality of life while minimising the consumption of natural resources, emissions, waste and pollution and ensures that resources are safeguarded for future generations.**
- **Sustainability has three pillars: environmental, social and economic.**
- **Ideally sustainable solutions would not undermine choice or personal identity and rather open up new choices for many.**

LIFESTYLES

Definition of "lifestyle":
- What we do and have and all related material objects or systems
- Our deliberative and non-deliberative choices and actions (behaviours)
- "Social conversations" through which we associate or distinguish ourselves from others

Lifestyles relate to our ways of "doing", "having", "using" and "displaying", our behaviour and all of the related products, objects and infrastructures (Røpke 2009: p. 11). Lifestyles are intimately linked to consumption, with many of our "signals" about ourselves mediated by and tied to our consumption of goods and services which in turn influences the material and resource flows in society. In other words, our lifestyles drive our levels and patterns of consumption.

Our lifestyles are a matter of choice as well as habit that are embedded in, shaped by (and shape) our entire context: our social, cultural, technical, economic, political, institutional and geographical surroundings and all of the actors in those surroundings.

Ways of "doing" and "having"
Our lifestyles comprise our daily practices, such as taking a shower, cooking, working, taking care of others, watching TV, driving or shopping and the things we do less often, such as buying a refrigerator or car, hosting a party, attending the cinema or going on holiday.

Our lifestyles also include what we own, with many products, objects and infrastructure enabling our daily and infrequent practices. Taking a shower, for example, includes everything from the water systems connected to our home, our water heating, the shower itself, the toiletries in the shower and other products we use, including beauty products and towels. Our lifestyles are also influenced by non-material issues such as our values, manners, and education.

Ways of "displaying"
Lifestyles are connected to identity. The way we choose, use and display goods has a symbolic value, helping us to express ourselves and our links to a particular social group or class (Edgar and Sedgwick 1999). Lifestyles serve as "social conversations" where we associate with or differentiate ourselves from others. Our ways of displaying are connected to how we grew up, what we learned, like and know, and what those around us are doing. We may buy the same groceries and follow the same cooking recipes as our parents, or go on holidays with the same group of friends.

Ways of "being shaped"
Lifestyles shape and are shaped by social, cultural, technical, economic, political, institutional and geographical surroundings.

We do not always have freedom of choice about our own lifestyles. Our choices can be blocked or shaped by the kind of products or infrastructure available to us, including politics, institutions, laws and regulations. We may, for example, want to use public transport more often, but lack reliable and convenient services – so we keep using our cars.

SUSTAINABLE LIFESTYLES

There is no commonly agreed definition of a sustainable lifestyle. The most widely cited definition is that of the Westminster Centre for Sustainable Development that defines sustainable lifestyles as:

> *"patterns of action and consumption used by people to affiliate and differentiate themselves from others, which: meet basic needs, provide a better quality of life, minimise the use of natural resources and emissions*

of waste and pollutants over the lifecycle, and do not jeopardise the needs of future generations" (CfSD, 2004).

Definition of **"sustainable lifestyles"** (CfSD, 2004):

people's "patterns of action and consumption [...], which
- Meet basic needs,
- Provide a better quality of life,
- Minimise the use of natural resources and emissions [...],
- Do not jeopardise the needs of future generations"

This definition builds partly on the definition of the United Nations Brundtland Commission which saw sustainable development as:

"development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987).

The UN World Summit 2005 report identified three pillars of sustainability: environmental/ecological, social and economic. Each of these three are closely linked to lifestyles and provide useful indicators of their level of sustainability.

Environmental or ecological sustainability is concerned with the environmental impact of production and consumption. Many indicators have been defined elsewhere[1], including levels of carbon and other emissions, levels of water and air pollution, land use, deforestation and biodiversity. Protecting the environment from the negative impacts of our current behaviour is the only way to protect the livelihoods of current and future generations.

The three pillars of sustainability (UN, 2005):
- Environmental
- Social
- Economic

Social sustainability spans equity and security, diversity and social cohesion, health and well-being. It aims to ensure equity of access to social resources.

Economic sustainability means resource efficiency as well as viable financial models and aims to satisfy people's current needs and wants, to ensure the same for future generations and to establish:

"human–nature relationships over the long-term and inherently uncertain future" (Baumgartner, & Quaas, 2010).

These three pillars are mutually dependent and the challenge is to move towards sustainable lifestyles where progress is mutually supportive of all three aspects of sustainability (UN, 2005). Many of the promising practices outlined in this report address more than just one of these pillars.

The lifestyle implications of these three sustainability pillars are that social, environmental and economic considerations would influence everything we do, have, use and display. This does not and should not mean we would face reduced choices but rather that a diversity of available choices support sustainable lifestyles. Many behaviours contribute to more sustainable ways of living. These include insulating our homes, reducing our consumption through product maintenance and repair, choosing eco-friendly products and reducing the impact of our travel by opting for less carbon intensive travel modes such as trains. Based on an extensive review of sustainable behaviours, the Department for Environment Food and Rural Affairs (Defra) has identified nine "headline", thirty "key" and various "sub" behaviours that address impact hot spots of our current unsustainable lifestyles (Table 2).

1 See for example the 2010 Environmental Performance Index released by Yale University and Columbia University (http://epi.yale.edu/Home) and the UNDP report on Millennium Development Goal 7 "Ensure Environmental Sustainability" (http://www.beta.undp.org/content/dam/undp/library/MDG/english/MDG_Report_2010_Goal7.pdf).

Table 3 Key behaviours for a sustainable lifestyle

Headline Behaviours	Key Behaviours	Sub-Behaviours				
Eco-improving your home (retrofitting)	Insulating your home	Installing loft insulation	Topping up loft insulation	Installing cavity wall insulation	Installing solid wall insulation	Installing double glazing
	Upgrading heating & hot water systems	Upgrading boiler				
	Fitting & using water saving devices	Upgrading to low flush toilet	Fitting water efficient shower head		Fixing dripping taps	
	Generating own energy by installing renewables	Wind	Solar / electric	Solar / water	Micro-CHP	Ground and air source heat pumps
Using energy & water wisely	Managing temperature	Fitting & using temperature controls				
	Washing & drying laundry using minimum energy & water	Line drying laundry	Using right amount of detergent			
			Switching to green energy tariff			
Extending the life of things (to minimise waste)	Maintaining & repairing (instead of replacing)	Keep electrical goods longer		Repairing electrical goods	Repairing furniture	Repairing clothes
	Giving new life to unwanted items e.g. furniture	Appliances & electrical goods	Using furniture reuse organisations, or services such as Freecycle, Ebay, etc			Clothes to charity shops
	Making the most of kerbside and local recycling services	Disposing safely of batteries, paint		Recycling textiles & clothes	Registering with Mail Preference Service	
Cooking and managing a sustainable & healthier diet	Choosing foods grown in season (in country of origin)					
	Increasing proportion of vegetables, fruit, and grains in diet (eating a balanced diet)					
	Cooking sustainable & healthier food					
	Wasting less food	Home composting food waste		Planning meals ahead		Storing for quality & safety
	Growing your own food					
Choosing eco-products & services	Using labelling to choose most energy & water efficient products					
	Choosing fairly traded, eco-labelled and independently certified food, clothing, etc.	Sustainable fish such as MSC fish	Sustainable wood such as FSC wood	Low impact clothes	Recycled products	Choosing without excessive packaging
	Borrowing, hiring or sourcing second-hand or recycled	Borrowing or hiring electrical goods	Choosing 2nd hand furniture		Choosing 2nd hand clothing	Using local hire / share & swap schemes for tools etc.
	Buying ethically when travelling					

Travelling sustainably	Making the most of cycling, walking, public transport and car sharing for short journeys				
	When buying or replacing a vehicle, take advantage of lower-emission models available				
	Making the most of alternatives to travel e.g. video conferencing				
	Making the most of lower-carbon alternatives to flying e.g. trains				
	Driving more efficiently	Combining trips	Using eco-driving techniques	Using eco-driving techniques	
Setting up & using resources in your community	Setting up car share and using car clubs				
	Installing community micro-generation	Swapping skills		Finding / using local shops	Working with community to grow food
	Sharing knowledge, skills, etc.				Comparing energy use within community
Using & future-proofing outdoor spaces	Gardening for biodiversity & environment	Creating an environment for wildlife		Using rainwater and a water butt	Home composting garden waste / Using peat free compost
	Enjoying the outdoors	Using your local green spaces			
Being part of improving the environment	Volunteering (with a local or national group)	Volunteering for local conservation project			Joining an environmental / conservation group
	Getting involved in local decisions	Taking part in local planning process			

Source: Centre of Expertise on Influencing Behaviour, Defra Sustainable Lifestyles Framework, 2011

A shift to sustainable lifestyles by 2050 should not require that individual consumers will always need to consciously consider social, economic and environmental implications in all choices and behaviours. Instead, the world in which we live should facilitate sustainable lifestyles as the effortless norm. How this can be achieved in different lifestyle domains and through behaviour change and supporting environments is discussed in later chapters. First, the next chapter illustrates some challenges and also opportunities – in the form of global megatrends – that European society is facing *en route* towards more sustainable lifestyles for all by 2050.

Ideally, the world in which we live allows sustainable lifestyles to become the effortless norm.

GLOBAL MEGATRENDS AND EUROPEAN LIFESTYLES

This chapter examines the impact of global megatrends on our lifestyles and the contribution of our lifestyles toward these trends. The table below illustrates global and European trends and associated lifestyle related sustainability opportunities.

Table 4 Megatrends and European Lifestyles

Section	Global trends	EU trends	Challenges for more sustainable ways of living	Opportunities for more sustainable ways of living
Population trends and urbanisation	▪ global population growth ▪ growing middle class ▪ urbanisation	▪ aging societies ▪ shrinking household size ▪ increasing number of households	▪ increased demand for health and social services ▪ stress on public finances in Europe	▪ dense living in cities can support more efficient living (e.g. smaller living spaces, less car use)
Climate change and health	▪ extreme weather events ▪ resource shortages ▪ migration and conflict	▪ rising health risks	▪ negative impact on mental and physical health ▪ people with low incomes are at higher risk	
Economic growth, jobs, time and well-being	▪ economic growth helps eradicate poverty and disease	▪ economic growth and subjective well-being have decoupled in many European countries	▪ higher incomes coupled with less free time can drive consumption-intensive lifestyles and higher stress levels	▪ sustainable economy ▪ "green jobs" ▪ providing alternatives to "consumer culture"

Accumulation of "stuff" and marketing	▪ household consumption is encouraged to drive economic growth	▪ debt levels are increasing ▪ labour costs are increasing, while product cost are decreasing	▪ sustainable and durable design, repair and reuse are not economical ▪ advertising instils desires for new products and services ▪ "greenwashing" ▪ proliferation of eco-labels is confusing	▪ need to rethink social costs of using personal credit to stimulate consumption ▪ green and sustainability marketing is a growing field
Technological and social innovation	▪ technological innovation at an unprecedented speed and level	▪ technological innovation at a high level and speed, contrasted with a slow speed of social innovation	▪ technological innovation drives consumer culture	▪ technological innovation drives energy efficiency and sustainability developments ▪ sustainable business models and social innovation support more sustainable ways of living

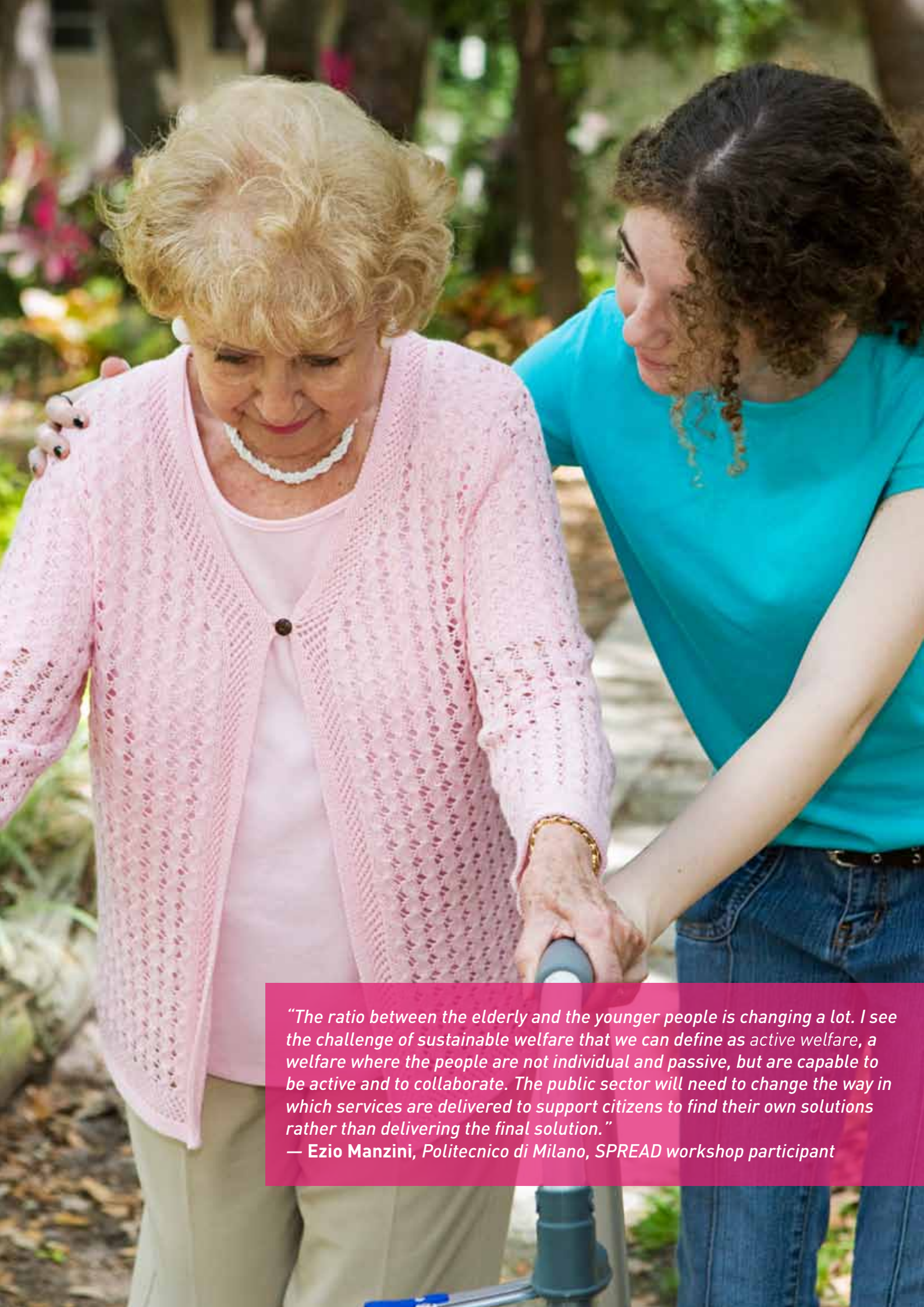
POPULATION TRENDS AND URBANISATION

Drivers of consumption:
- Global population growth
- Increasing living standards
- Ageing of the EU population
- Growing number of households

A key driver of macro level consumption is *population growth*. The world's population reached 7 billion people in 2011 (Eurostat and European Commission 2009) and is expected to grow to some 9 billion by 2050. All of these people will require their basic needs to be met, and a growing middle class will aspire to higher standards of living and improved life quality.

Together with global population growth (although not in Europe) increasing resource-intensity per capita leads to rising environmental impacts and pressures (Global Footprint Network 2009). Environmental problems have been traditionally associated with developed economies (Røpke 2009a). However, impacts are increasingly posing challenges to developing countries as production infrastructure moves to low-cost countries where Western high-impact lifestyles are, increasingly, being emulated.

In addition to population growth, changes in the *demographic structure* also affect consumption levels and patterns. The ageing population in Europe, for example, that is a consequence of lower birth rates and increased life expectancy shapes consumption (Eurostat and European Commission 2009). The ageing population is and will continue to place considerable stress on public finances in Europe (European Commission 2009) as more and more people depend on those who work. For every two individuals of working age in the EU there was one dependent person (a child or elderly person) in 2007. This ageing trend is



"The ratio between the elderly and the younger people is changing a lot. I see the challenge of sustainable welfare that we can define as active welfare, a welfare where the people are not individual and passive, but are capable to be active and to collaborate. The public sector will need to change the way in which services are delivered to support citizens to find their own solutions rather than delivering the final solution."
— **Ezio Manzini**, *Politecnico di Milano, SPREAD workshop participant*

set to continue with growing numbers of pensioners and falling number of workers. An ageing population has consequences for consumption, with increased demand for health and/or social services, retirement homes, health-care, and technologies targeted toward the needs of older people.

Another demographic trend that influences consumption is the shrinking *size of the average household*, and the resulting rise in the number of separate households, with increased demands for products and services (ODYSSEE database 2011). This is linked in part to the ageing population as older people increasingly live alone during their final years. In addition, high divorce rates, the reduced emphasis on family and the growing emphasis on the individual (with young people choosing to live independently from their parents) have all contributed to the growing number of households and, therefore, growing consumption (Eurostat and European Commission 2009).

More than 86% of the population in developed regions is expected to live in cities by 2050.

Over 86% of the population in developed regions is expected to live in cities by 2050 (UN DESA 2010). This figure is driven by population growth, migration, and employment opportunities. Increasingly dense city dwellings are expected to have significant impacts on our future health and well-being. On the other hand, dense living can impose a lower environmental impact because of opportunities to support efficient multi-family dwellings, smaller living spaces, less private automobile use and improved community cohesion.

CLIMATE CHANGE AND HEALTH

The Intergovernmental Panel on Climate Change (IPCC) estimates that malnutrition, diarrhoeal disease, cardio respiratory disease, infectious diseases and extreme weather events will increase as a result of climate change. People with low incomes are most likely to live in poor neighbourhoods, including "urban heat islands" with an increased risk of heat-stroke. Because of their circumstances, these people are more likely to be affected by dislocation, migration and homelessness all of which increase vulnerability to climate impacts.

Climate change will have direct and indirect effects on health in Europe. People with low income are the most likely to be affected.

Other factors that predispose people to vulnerability to climate impacts include living and working somewhere that is at high risk, social isolation, being old, being very young, and chronic illness (IPCC 2007). Climate change "will also increase health inequalities between and within countries. Deprivation increases vulnerability to climate change and climate change increases deprivation" (SDC 2010, p. 20).

ECONOMIC GROWTH, JOBS, TIME AND WELL-BEING

The environmental and social problems related to unsustainable consumption are often justified with the argument that a material-intensive society provides *well-being* and makes people happy. However, there is evidence that the consumption-based model of society is failing on its own terms.

GDP growth and levels of well-being and happiness are only linked to a certain threshold.

Recent studies that correlate economic growth expressed in GDP values with the subjective level of happiness articulated by people, or with the so-called Index of Sustainable Economic Welfare, demonstrate that while GDP growth continued across Europe in recent years, levels of happiness have either stagnated or even fallen (Marks, Abdallah et al. 2006).

In many parts of the world, economic growth and the associated growth in consumption are vital to eradicate poverty and disease and to satisfy basic human needs. Economic growth – up to a certain GDP threshold – is an opportunity to invest resources in the improvement of people's lives (Max-Neef 1995a). But once that threshold is passed, economic growth and subjective well-being – as expressed by the Index of Sustainable Economic Welfare, for example – are no longer linked.

A global survey of young adults on their visions for sustainable lifestyles was published by UNEP in 2011 (UNEP 2011 ongoing). First findings show that very few young people cited dreams of luxury and unlimited material comfort. These young adults portrayed optimistic visions for their lives in the future that included:

- The capacity to meet one's needs and reach a middle-class standard of living;
- A fulfilling job providing a sense of self-achievement;
- A successful family and social life;
- A clean environment.

Importantly, the UNEO survey indicates that young adults are seeking security: financial, social, environmental and personal.

Less working and more leisure hours have been proposed as one approach to reduce consumption.

People in economically rich countries are often stressed and work long hours with strained social ties as a consequence. Less free time in combination with higher incomes can result in increased consumption, with households buying time-saving energy-consuming devices, restaurant meals or toys for children to compensate for the lack of quality time spent with parents (Segal 2003). Children in the UK, for example, are among the unhappiest in the developed world according to a report by the UK Committee for UNICEF (UNICEF 2011). Working fewer hours for a reduced income and having more leisure time has been proposed as one way to address unsustainable consumption (Ausubel and Grubler 1995; Sanne 2005; Coote, Simms et al. 2010). However, it has been questioned whether the time gained would encourage a rebound effect or be spent on non-commoditised activities and consumption (Jalas 2002; Sanches 2005).

Well-being is shaped by material, social and human capital.

People from less affluent economies often have much stronger social networks that contribute to relatively high levels of life satisfaction (World Values Survey 2007). Well-being is shaped not only by material capital (natural, physical, and financial resources), but also by social and human capital (social networks, family ties, norms and morals).

A small but growing community of scientists, civil society organisations and activists recognise the need for a planned contraction of economies in richer nations to free up more "space" for countries that still require economic growth to meet basic needs and achieve a minimum level of human well-being (Degrowth.org 2010; Kallis 2011; Lorek and Fuchs 2011). Advocates of a planned contraction also stress the need to develop alternative development pathways for economies to avoid "meltdown" as a result of financial crises, as happened following the 2008 financing and banking crisis.

One pathway towards more sustainable societies under review is a guided "de-growth".

Referred to as a guided "de-growth" path, a planned contraction would include a transition from a focus on growth, GDP and material welfare (whether "green" or not) to a more social, sustainable and fair well-being. This means viewing the economy as one part of a broader system, with all economic activities dependent on environmental and social capital that should not be depleted. Economic

development would, therefore, be measured by its real costs and benefits and their fair distribution among individuals and across societies. Such a shift in culture, thinking, values and education would lead to new patterns of consumption and production focused on improving social aspects of well-being to provide a better quality of life and global prosperity.

A transition from a focus on GDP to social, sustainable and fair well-being is being reviewed.

A trend towards a sustainable economy that can be observed in the developed world today is the emergence of employment in the sectors that have been identified as addressing critical sustainability issues; so called "green jobs". UNEP estimates that the number of people employed in the renewable energy sector alone at 2.3 million worldwide. In the building sector it is projected that between 1.3 and 2.5 million people will be involved with the construction of energy efficient buildings by 2030, including green designers, architects, auditors and engineers (UNEP 2008).

Awareness about well-being, work, stress and environmentally-sound products is slowly growing among Europeans.

In economically advanced countries, awareness of health and environmental impacts of products is growing with a consequent growth in demand for organic and local food. A small, but increasing fraction of the affluent population is demonstrating post-materialistic values. People are searching for ways to break free from the adverse consequences of excess consumption such as the increasing pace of life, stress created by the treadmill of the "work and spend" cycle, an overflow of information and abundance of commodities, and the sheer lack of time to actually enjoy life.

ACCUMULATION OF "STUFF" AND MARKETING

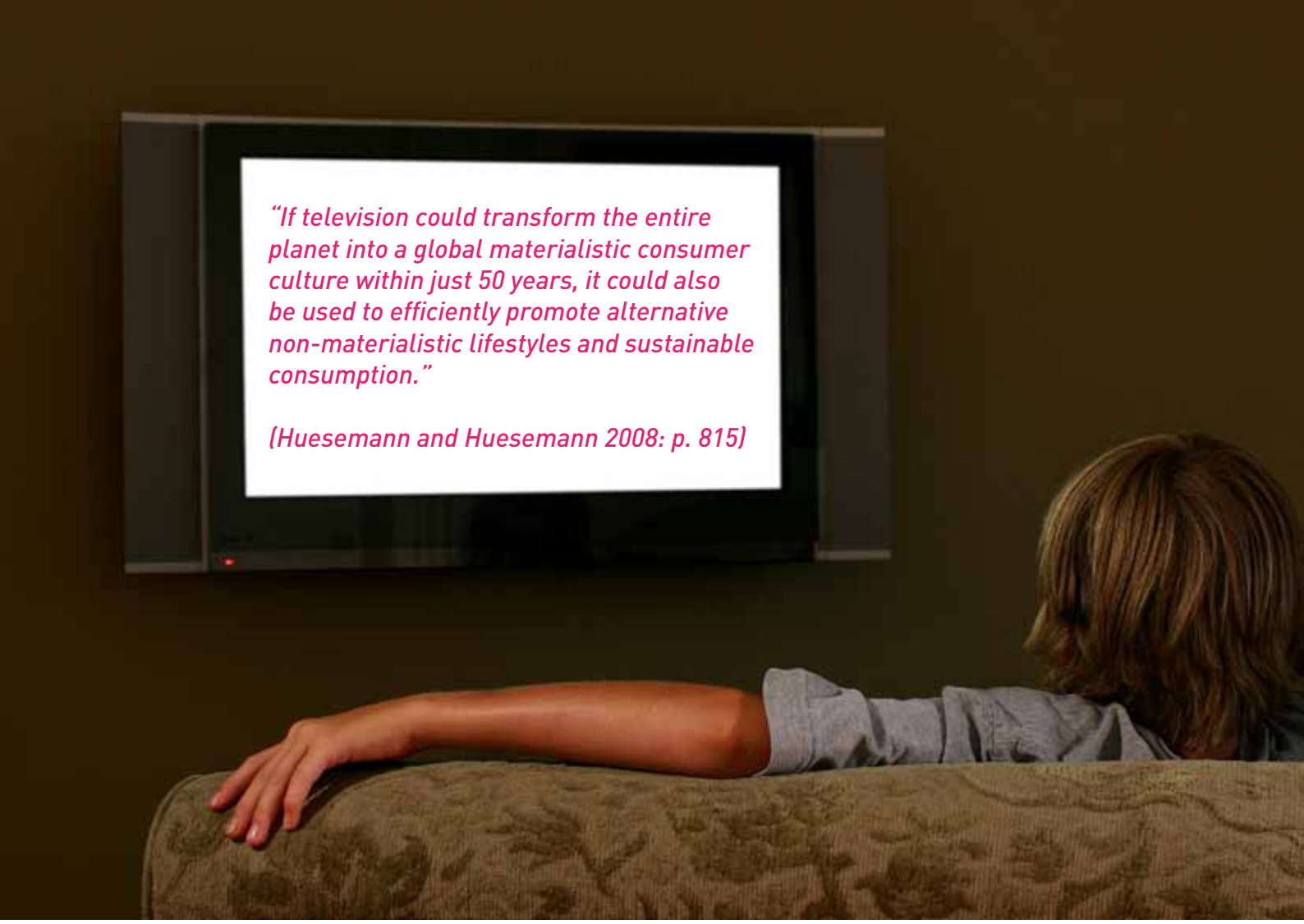
Household consumption has been encouraged by the availability of attractive *credit*. Research shows a direct correlation between residential home prices and consumption growth, with more and more people living on borrowed money using the value of their homes as collateral (Barata and Pacheco 2003; Lacoviello 2004). In recent decades, savings ratios have fallen in many European countries, with people preferring to *spend rather than save* for future needs. Although savings rose slightly in 2008 to 2010 as consumers reacted to the economic recession, a decline in savings can again be observed in most EU countries (OECD 2010).

Consumer culture drives rising consumption and debt.

Despite accelerating consumption levels, retailers and lenders have developed a wide range of payment methods providing consumers a high degree of flexibility to make purchases (Eurostat and European Commission 2009). This has led to an enormous accumulation of *consumer debt* in many countries (Cohen 2007), as became painfully clear in the recent credit crisis that led to the second wave of the international financial crisis. This highlights the need to rethink the social costs of the function of financial systems and the use of personal credit as a means of stimulating consumption (Michaelis 2000).

At the individual level, people spend money on products that were once regarded as luxuries and are now perceived as necessities in both developed and developing economies. There is a general trend to *accumulate "stuff"*.[2] It is not uncommon for EU households to have between 20 to 30 technological items (IEA

2 Referring to *The Story of Stuff* as told by Annie Leonard, addressing the current processes of resource extraction, production, distribution, consumption and disposal and pointing out the need for alternative ways to this linear unsustainable path (see http://storyofstuff.org/index.php)



2009a). Often, the purchase of a product requires or leads to the purchase of another set of items.

While the number of products on the market is increasing, their useful lifetime is decreasing (Cooper 2002). Sustainable and durable design, repair and reuse are not economical because of labour costs in developed countries while the comparative cost of new products is relatively low. Between 1981 and 1994 the price of a new television increased by just 20%, while the cost of repair work rose by over 150% (Consumers International 1998: p.20). Unsurprisingly, most consumers opt for replacement over repair.

Media, marketing and advertising play an increasingly important role in shaping consumer preferences and lifestyles (Worldwatch Institute 2010), and people's needs and wants (Mont and Power 2009). The advertising industry has been criticised for its messaging to children (Barber 2007a) and for re-developing gender differences to sell products customised for different target audiences. Marketers are today applying the findings of neuroscience to understand how consumer decisions are made (Belch and Belch 2007).

CELEBRITIES AND TREND-SETTERS FROM ACROSS THE WORLD ARE PROMOTING MORE SUSTAINABLE LIFESTYLES.

- Hong Kong movie star Jackie Chan has launched the "Jackie Chan New Day Environmental Protection Program" in Beijing.
- In 1998 Leonardo DiCaprio started the Leonardo DiCaprio Foundation to promote environmental causes. More recently, he has been working on a global-warming documentary "11th Hour" featuring interviews with global green leaders.
- Robert Redford has campaigned for Utah wilderness, promoted solar energy, convinced mayors to tackle climate change, and served 30 years on the board of the Natural Resources Defense Council.
- George Clooney launched Oil Change, a campaign to eliminate America's dependence on oil. To support the campaign he drives an electric car.
- Brad Pitt supports the emerging green-building movement; helped rebuild New Orleans in an eco-sound way, narrates a sustainable design TV series, and supports Ed Norton's Solar Neighbors Program.

Advertising and marketing can be powerful tools to create attractive visions of more sustainable futures and lifestyles, products and services. Many examples demonstrate the power of media and advertising in creating more sustainable societies (OECD 2008). Business leaders are beginning to recognise their role as influencers of choice in supporting consumer decisions in favour of more sustainable choices (WBCSD 2008).

Labels can inform and create trust among consumers.

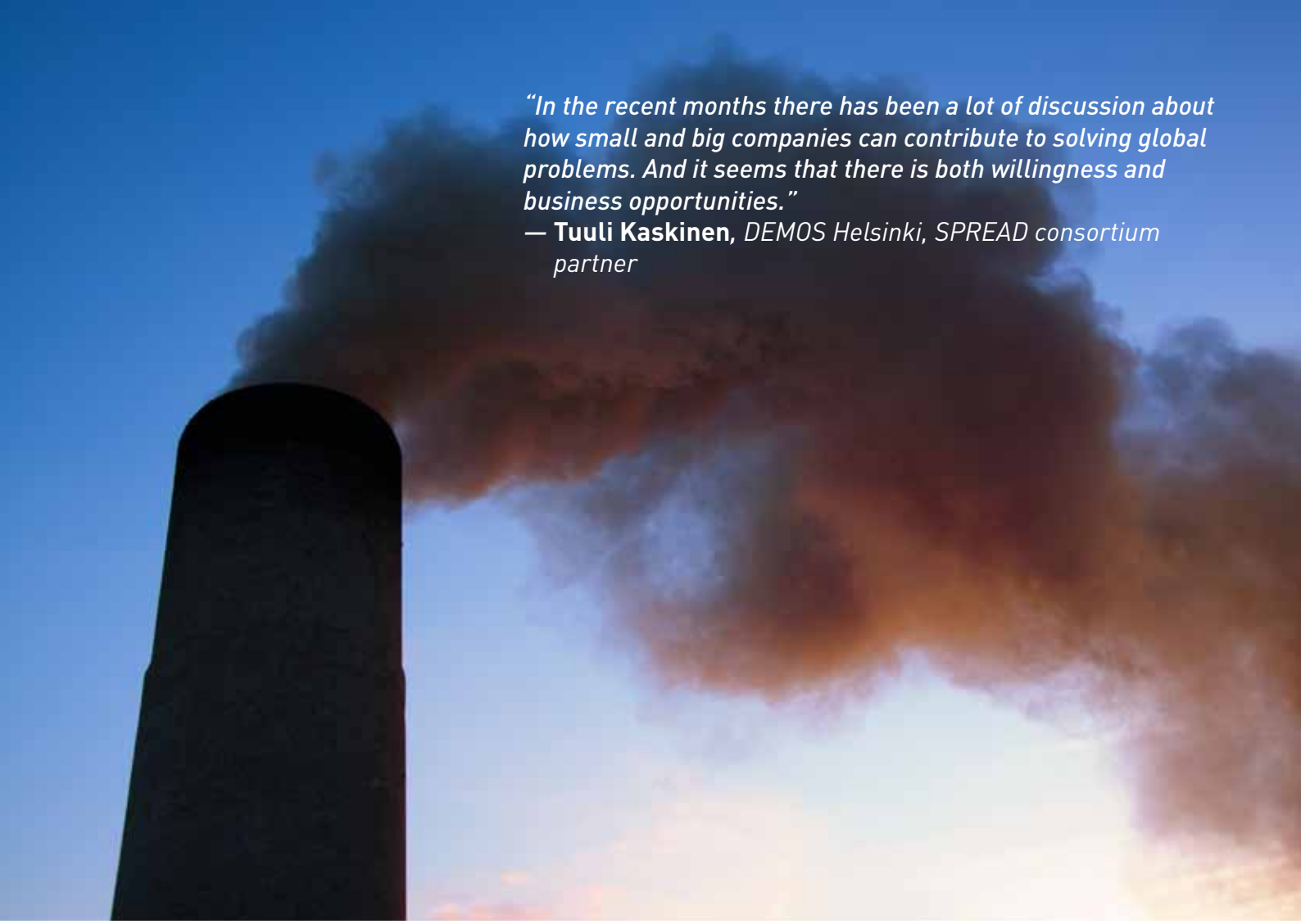
Green and sustainability marketing is a growing field (Belz and Peattie 2009) that aims to green the market by promoting environmentally and socially sound products and services . An important aspect of sustainability marketing is the provision of sustainability-related information to consumers, typically through eco- and social labels. These aim to create trust among consumers in the environmental and social viability of products, devices and appliances. Independent and frequently monitored labels succeed well in doing so and are often endorsed by consumer organisations, NGOs and CSOs.

"Greenwashing" and the sheer number of eco-labels raises concerns among policy makers and consumer organisations.

However, concerns about so-called "greenwashing" are increasing and examples abound of companies using questionable green claims to sell products. A further challenge is the sheer number of eco- and other sustainability labels on the European market. The total number of food labels linked to quality claims exceeds 90 separate labels in Europe alone (Tuncer, 2001). Rather than helping consumers, the sheer number of labels serves to confuse decision making.

TECHNOLOGICAL AND SOCIAL INNOVATION

Technology has been and remains among the primary drivers of consumption. While technology has led to significant improvements in the standard of living in Europe and elsewhere, it has also increased consumption levels and environmental problems linked to consumption. At the same time, technological development provides many of the necessary tools to support sustainable lifestyles such as energy efficient products and housing as well as communication and information services that support more sustainable behaviours, such as on-line trading platforms and public transport information services.



"In the recent months there has been a lot of discussion about how small and big companies can contribute to solving global problems. And it seems that there is both willingness and business opportunities."
— **Tuuli Kaskinen**, *DEMOS Helsinki, SPREAD consortium partner*

Technological innovation has contributed to the development of societies by replacing labour with capital, resources and energy, leading to increased labour productivity. Technology has also facilitated design of many new products and services to satisfy various needs and wants and has increased the efficiency of production processes which has reduced the costs of goods and services (Braun 1995). All of these developments have led to increasing levels of consumption per capita (Grübler, Nakicenovic et al. 2002).

Technological innovation leads to increased consumption and associated environmental problems.

The sale of new product systems and infrastructures shapes social practice, institutions and even entire cultures. The increasing number of cars, for example, has influenced infrastructure development and town planning, creating car dependent societies that include road networks and traffic administrations, police, driving schools, and so forth (Sachs 1992). In addition, technology has been instrumental in spreading these Western lifestyles in recent decades through the Internet, other media and through travel (Huesemann and Huesemann 2008) improving consumer access to information and expanding markets across the globe.

Technological innovation also supports increased efficiency and associated decrease of environmental impacts.

Technology is also an important contributor to sustainable lifestyles. Another important trend in technology is, therefore, the development and dissemination of environmental and sustainable technologies. This includes energy-efficiency technologies in production processes, households and in the public sector. Energy efficiency improvements can be found across all sectors, from aircraft production and operation to agriculture, from information and communications technology (ICT) to transport. There is a trend towards more energy efficient

processes and products in particular among industrial end users and the energy industries. There is also a global dialogue on, and practical implementation of, the shift from fossil-fuels to renewable energy sources.

New and innovative sustainable business models are emerging with potential to realign technological development with sustainable consumption and practice (Mont 2004). Experts, supported by an increasing number of businesses (e.g. Xerox, DuPont, Interface), advocate a closed-loop economy and greater design for durability and recycling (Wells and Seitz 2005; Stahel 2006). Others propagate the so-called product service economy (Stahel 1994), where the negative economic impacts of slower throughput of products are offset by repair services, reuse of products and re-manufacturing.

A process of **open innovation** implies that businesses and producers engage explicitly with their environment, other businesses and potential consumers to develop and share ideas and technologies, acknowledging the abundance of knowledge outside the business sphere that is widely distributed and highly relevant.

Such innovative business models are not built on the premise of selling ever more material products, but on the idea of creating value and generating profit by satisfying consumer needs through access to, and use of, products (Mont 2001). Rather than being the object of a consumer purchase, a product is hired, leased or rented for as long as it is needed. These innovative models are supported by, for instance, extended producer responsibility legislation and examples have already emerged in many sectors, including washing services and chemical management services. In business-to-consumer markets, examples include car sharing and do-it-yourself (DIY) tool sharing schemes where consumers can be users of products without the need for ownership. Open innovation, whereby businesses engage more directly with consumers, helps businesses design products and services that connect to (changing) customer needs and values.

Collaborative consumption is based on the idea that sharing instead of owning lowers consumption levels. It can take many forms, including shard ownership or lending, recycling and swapping personal goods. This can be enabled through online technology platforms that match supply and demand for products or services.

Examples of social innovation are closely linked to business innovation cases and include systems of *collaborative consumption* (Botsman and Rogers 2010). This increasingly popular approach means that people share their possessions with other people while not in use through various types of (mostly informal) social networks. Some of these networks and schemes have been established as an entrepreneurial activity, others without a profit-making interest.

Examples of collaborative consumption include swapping child and adult clothing, sharing expensive but rarely-used items, such as party bags or artwork, and swapping houses for holidays. Other schemes aim to share and swap skills – rather than products – among private individuals. Technology can play a significant role in facilitating these new practices by creating durable products and materials and by providing the necessary logistics and make these schemes accessible.

WHERE ARE CURRENT TRENDS LEADING US?

This chapter outlined current global and European trends that shape unsustainable lifestyles of people in European countries. Together with these trends a number of promising emerging trends have been identified that can shape and enable sustainable lifestyles. The macro-trends described above have different effects on a variety of lifestyle areas (consuming, living, moving and health). The chapters that follow provide an overview of trends, challenges and opportunities within each lifestyle area.

CHALLENGES AND OPPORTUNITIES FOR SUSTAINABLE LIFESTYLES

The SPREAD project has chosen four lifestyle areas for deeper investigation:

- **consuming (food, household and leisure consumer products)**
- **living (the built environment and homes)**
- **moving (individual mobility and transport)**
- **health and society (individual and society-wide health and equity)**

This section outlines key challenges within each lifestyle area and explores what is holding back change. In addition, each section seeks to uncover encouraging trends and opportunities for more sustainable living options and promising practices that demonstrate existing examples of progress toward sustainable living.

These four lifestyle areas correspond with known current and future natural resource and environmental "hot spots" related to individual consumption (see box for some example statistics), and the need to improve health and well-being in an ageing European society.

UNSUSTAINABLE LIFESTYLE TRENDS - IMPACT HOT SPOTS

Consuming: Consumption of meat and dairy is increasing not only in Europe, but globally: between 1965 and 2005 global food consumption and production increased 2.5 times (EEA 2005). There is, however, an increasing replacement of beef and lamb by pork and, particularly, poultry across the EU (EEA 2010b) and the total consumption of meat in 2008 fell by 2.2% compared to 2007 as a result of rising food prices (EC 2009).The supply of goods from exotic locations is on the rise (Schor 2005), the overall distance food travels is increasing (Hill 2008) and the consumption of processed food and meat is growing (EEA 2005). Meat imports to the EU-15 increased by 120% between 1990 and 2007. Cereal imports increased by 83%, frozen vegetables by 174%, and bananas by 92% over the same period (EEA 2010b). The global rate of consumption of bottled water rose by 2.7% in 2009 (IBWA 2010).

Living: The ownership of living space per capita and the number of household appliances in homes is growing (Worldwatch Institute 2004). The average area of a dwelling unit increased from 86 to 92 m^2 in the EU-15 between 1990 and 2007 (EEA 2010a), while the number of people per household decreased from 2.8 to 2.4 people (ODYSSEE database 2011). This leads to increasing consumption of electricity for space heating and water. For example, in the EEA member countries, household electricity consumption per capita increased by over 30% between 1990 and 2007 in spite of increasing prices in many countries (EEA 2010b). The waste generated by households in the EU-15 increased by 2% over the period 1996–2004 (EEA 2010c)

Moving: The number of cars on European roads is growing and leisure trips by road are becoming more frequent, longer in distance and shorter in time (Ecorys 2008). Globally, the number of international air passengers increased from 88 million in 1972 (ICAO 2007) to 760 million in 2006 and is projected to grow further both globally and domestically (IATA 2007). Europeans are also travelling faster and further. The number of kilometres travelled by member of the 32 EEA countries increased by 20% between 1995 and 2007 (EEA 2010b).

Health: Lifestyle choices and patterns and levels of consumption have direct consequences for the health of people. Over 50% of the adult population in the EU is currently overweight or obese, and about 20% of children are overweight (WHO and CSDH 2008). Obesity reflects unsustainable behaviour in terms of overconsumption of calorie-rich, nutrient-poor processed food and inactive lifestyles, but also unsustainable infrastructure with high reliance on private car use and few opportunities for walking and cycling.

CONSUMING

The SPREAD Working Group on Consuming, led by the Centre for Sustainable Consumption and Production (CSCP) and the International Institute for Industrial Environmental Economics and Lund University (ULUND), reviews current consuming patterns in Europe across key impact sectors (food and drink; household goods; luxury accessories such as jewellery; clothing; and consumer electronics) and outlines key opportunities and trends for sustainable consumption opportunities in the future. The aim is to understand the factors that drive current individual consumption and the factors that can change household behaviour to deliver more sustainable lifestyles across Europe.

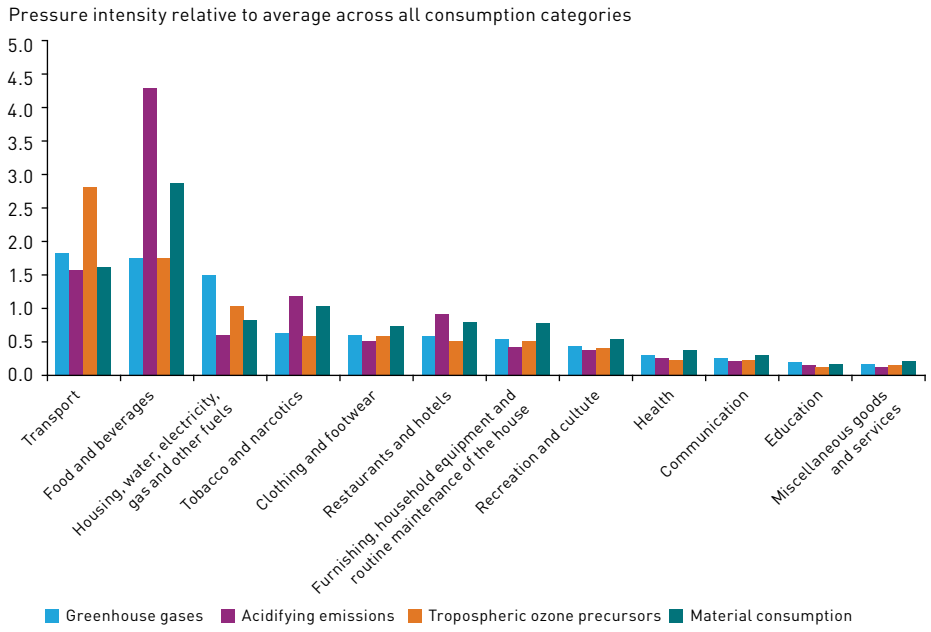
EMERGING PRACTICES FOSTERING MORE SUSTAINABLE CONSUMING

- Efficient consuming: changing habits (such as no longer wasting food or washing clothes at high temperatures), or by upgrading, reusing or recycling products. This contributes to the reduction of resource exploitation and harmful emissions to air, water and soil.
- Different consuming: shifting from ownership of many low quality cheap and short-lived products to shared access to high quality goods or services by exercising collaborative consumption or sharing systems. This reduces the need for new products and satisfies consumer needs for products without the need for absolute ownership.
- Sufficient consuming: simplifying one's lifestyle to reduce individual material consumption and ecological/carbon footprint.

Current situation: unsustainable consuming

Three key elements account for 75% of the impact of household consumption on the environment: food, mobility and housing (Tukker, Huppes et al. 2006). On a per Euro spent basis, food accounts for the greatest single share: solely responsible for 20-30% of environmental impacts.[3] Figure 3 below illustrates European consumption and impacts in terms of emissions and resource consumption.

Figure 3 Environmental pressure per euro spent on private consumption in nine EU Member States, 2005



Note: * Austria, Czech Republic, Denmark, Germany, France, Italy, the Netherlands, Portugal and Sweden.
Source: EEA 2010b

Overall, the largest environmental impacts in the consuming domain are linked to the consumption of meat and dairy products, jewellery and air travel (EEA 2010a). Broader impacts of consumption include:

- Increased resource consumption for manufacturing of products,
- Increased household waste, coupled with low levels of recycling,
- The depletion of certain fish stocks through over harvesting
- Increased long distance transportation of goods and increased imports of non-seasonal and exotic food,
- High levels of food processing associated with high energy use both for production and use (CSD 2004),
- Resource depletion caused by the sourcing of materials and food (wood products, metals, diamonds, fish, exotic fruits and vegetables).

Increase of food imports to the EU 1990-2007 (FAO, 2010):

- Meat: 120%
- Cereal imports: 83%
- Frozen vegetables: 174%
- Bananas: 2%

3 A summary of food related impacts can be found in Reisch, L., G. Scholl, et al. (2010). Sustainable Food Consumption CORPUS – Enhancing the Connectivity between Research and Policy-making in Sustainable Consumption, CORPUS.).

Europe's ecological consumption footprint:
- 23% food
- 10% recreation and culture
- 5% alcoholic beverages
- 2% clothing
- 1% communication

The Global Footprint Network shows that 23% of Europe's ecological footprint related to consumption is attributed to food, 10% to recreation and culture, 5% to alcoholic beverages, tobacco etc., 4% to hotels and restaurants, 2% to clothing and 1% to communication (WWF 2006). In terms of an individual's ecological footprint, consumer goods alone account for 14% of an average citizen's footprint in the UK (Bio-Regional and CABE 2008).

The implications of consumption in Europe are far reaching as many of the impacts caused in the EU are not actually felt in the EU, but in other parts of the world where goods are produced. The true costs of environmental and resource degradation to societies outside Europe are not reflected fully in the prices of goods and services (EEA 2010a).

Food consuming and obesity
More than 53% of the EU population is estimated to be overweight, and the numbers are increasing (EEA 2010).

Current consumption patterns also lead to social impacts, such as obesity (increased intake of sugars), heart disease (fatty foods and smoking) and cancers (exposure to hazardous chemicals). Consumption-related health risks such as overweight and obesity are of great concern because they are linked to such serious health problems as cardiovascular disease, diabetes and several types of cancer and can reduce life expectancy. While the causes of obesity are complex, the root of the problem is increasing calorie intake, coupled with a more sedentary lifestyle.

The use of chemicals in consumer products also has significant environmental and health impacts. This includes the use of persistent and bio-accumulative organic compounds, endocrine-disrupting chemicals and heavy metals in plastics, lubricants, textiles, cosmetics, dyes, flame retardants, wood preservatives, electronic goods, and food packaging. Many of these chemicals can leach from products and can, in some cases, be found in the environment at levels high enough to pose health concerns. This is also the case for chemical compounds at low levels that can, when combined with many other substances in the environment or with long term exposures, impose negative impacts on unborn, very young or vulnerable children. Exposure to these chemicals is thought to be linked to declining sperm counts, genital malformations, and impaired neural development and sexual behaviour, as well as obesity and cancer (EEA 2010a).

Trends towards more sustainable consuming

Trends toward sustainable consumption:
- Increased awareness of sustainability
- Increased awareness of the potential for savings
- Emergence of collaborative consumption
- Increased availability of sustainable products and services
- Growing awareness of need for community

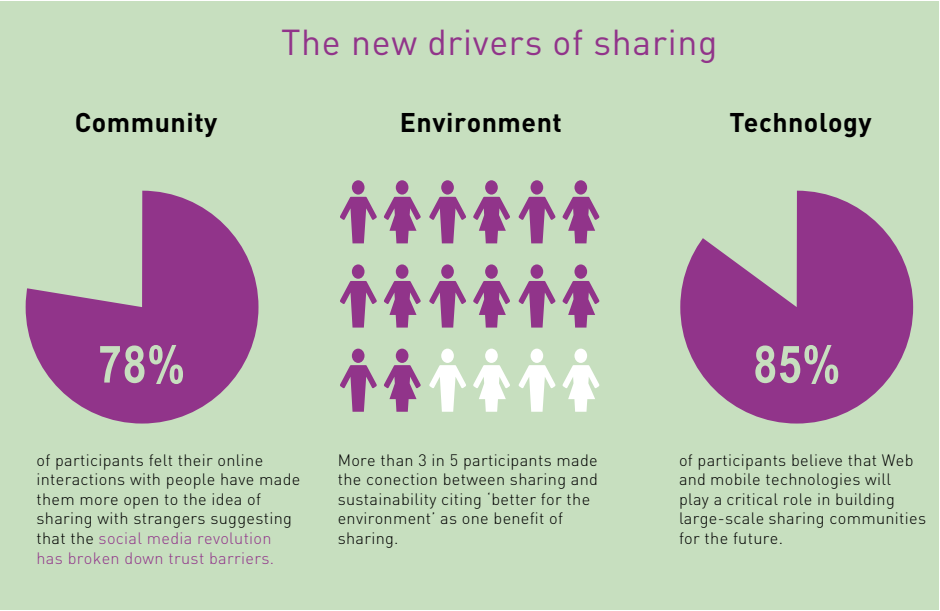
There are examples of positive developments in recent decades that are shaping our consumption that that are setting a course toward sustainability.

There is, for example, a greater awareness of sustainability issues in general. A 2009 poll showed that a slim majority (55%) of EU citizens buying or using products are, in general, aware of their most significant impacts on the environment that arise from the product (European Commission 2009). While this relatively high level of awareness is a positive development, it needs to be treated with caution: awareness alone is no guarantee of changes in actual behaviour.

The good news is that young people aged 18 to 25, in particular, believe that their generation is consuming too much and want more information on how they can reduce negative impacts of their consumption (OECD 2008).

In the aftermath of the economic crisis of 2008, this has been matched by a growing awareness of the potential for cost savings and the risks of large investments, reinforcing the values of thrift and frugality through product sharing, swapping, lending, and online trading (see Figure 4).

Figure 4 New drivers of sharing



Source: Botsman and Rogers 2010

One emerging trend seen in a small part of the population is a change in values related to the ownership of goods: the urge to own things is being replaced slowly by considerations about how we use the functions offered by these goods.

Another promising – and growing – change in values can be observed in the shift by some people from product ownership to access to products through collaborative consumption (swapping, lending, and trading via online communities) or the "sharing economy". Collaborative consumption businesses and schemes have been growing. By 2013 the global market for these schemes is expected to reach $35 billion (Botsman and Rogers 2010).

These trends are supported by mounting evidence that the subjective well-being of people is linked to increasing income only up to a certain point. Once that point is reached, well-being and income decouple. After a certain point, increasing levels of income provide diminishing returns in terms of well-being and happiness (Max-Neef 1995; Armstrong 2011). There is growing evidence that our need for community has been rekindled – a trend feeding into and being fed by the proliferation of online social networks.

Another development is the emergence of technological innovations that increase availability of more eco-efficient products (such as household appliances, detergents, light bulbs, or hybrid/electric cars) and services (smart metering of individual consumption, green car washes, ecological hairdressers and many more).

At the same time, rising food prices, periodic anxiety about food issues linked to, for example, BSI, and Avian flu, and a growing desire for healthy living among Europeans is leading to shifts towards diets with lower environmental and social impacts. Local food, organic and Fair Trade markets are growing, and an

Rising prices and health concerns lead to reduced meat consumption:

Rising prices, as well as a general trend towards healthier food in recent years is correlated to a drop in total meat consumption of 2.2% in the EU between 2007 and 2009 and consumption of poultry in place of beef and lamb (EEA, 2010).

ever greater number of consumers are seeking information on the conditions under which the products they purchase are produced and transported.

Governments, manufacturers and retailers are beginning to see business opportunities in the provision of access to sustainable products and services. Leading businesses declared in 2008 that it is the role of business to address urgent unsustainable consumption issues through innovation, influencing and directing choice ("choice editing") (WBCSD 2008). One example is the organic food market in Western Europe, which currently enjoys an annual turnover of 20 billion EUR and annual growth of 11.4% between 2004 and 2013 (Bio Regional 2009).

Challenges to increasing sustainable consumption:

- Predominance of consumerism
- Perpetual economic growth
- Ineffective information and education
- Limited sustainable options

Challenges to more sustainable consuming

One of the most significant challenges to sustainable consuming is the overwhelming predominance of consumerism within our society and economy. Consumerism or consumer culture refers to the high levels of consumption of material goods that is made possible by growing disposable incomes. High levels of material consumption is accepted as the norm and is believed to be associated with well-being and success (Sassatelli 2007).

The number of products per person and per household is growing and the overall size and speed of material flows is increasing, as is the aggregate level of municipal waste in Europe, which has reached 258 million tonnes per year. Waste generation imposes serious environmental impacts, including methane emissions from landfills, hazardous substances from incineration facilities, land contamination and pollution of ground and open waters with, for example, pharmaceuticals.

European waste statistics: In the EU-27 annual generation of municipal waste stabilised during the period 1999 to 2007 and equals 524 kg per person (EEA 2010b). There are however large differences between the countries, with many EU countries reporting increases in municipal waste volumes. Packaging waste from households and commercial sources, which makes up some 3% of total waste, is also rising.

Beliefs about the possibility of perpetual economic growth is one factor that has led to production of large quantities of short-lived poor quality products, which increases the likelihood of consumers making more frequent replacement purchases. At an individual level, economic growth is translated into increasing levels of disposable income, much of which being spent on consumption. These growing levels of consumption are largely directed toward transport (e.g. new cars); furnishings, household equipment and routine maintenance of homes; education; restaurants and hotels; recreation and culture; and also on clothing and footwear (Eurostat and European Commission 2010).

Information and education efforts to date concerning products are rarely effective. It has been shown that food retailers in the UK fail to offer sufficient information to enable customers to engage with sustainable consumption or to help guide their consumption behaviour (Jones, Comfort et al. 2009). This, in turn, results in a low demand for sustainable products and services, ineffective use of those products that are designed for sustainability and a general lack of awareness about sustainability aspects of everyday activities and practices.

In addition, the supply side does not yet offer enough sustainable choices to compete with conventional choices in terms of price, performance, quality, convenience or a "cool" image.

Governments can help by developing policies to ensure that the true environmental and social costs are included in product prices. Talking such steps would make sustainable products and services more cost competitive with conven-

tional products (WEF 2011). Retailers also can play a role by helping consumers find, choose and correctly use sustainable products through effective design of shop layouts and shelving to ensure product visibility (choice-influencing) or by removing unsustainable products altogether (choice-editing) (Thaler and Sunstein 2008).

Another challenge is the unsustainability of prevailing large scale infrastructure systems, which makes it difficult for individuals to make sustainable choices in their everyday lives. Even if people are very aware of a particular sustainability issue, they may find themselves locked into unsustainable consumption patterns. Large shopping malls, for example, are usually on the outskirts of cities, so people are compelled to travel long distances, often by automobile, which contributes to traffic congestions and air pollution.

Businesses, on the one hand, invest time and resources to improve performance and products. However, on the other hand business drives materialism and consumerism as profits are directly dependent on the number of products sold. Advertising works hard to entice people to purchase ever more products and constantly increase consumption (ETC/SCP 2010).

The same contradictions can be found in government action. Policy decisions are often inconsistent and ambivalent as governments rarely reconcile sustainable consumption objectives with decisions to encourage economic growth and employment (UNEP, 2011). Governments may, for example, invest in research to provide recommendations for healthy diets (often advocating local produce) only to intervene later to limit such recommendations for reasons such as obligations to foster free trade (Röhne 2011).

The challenge of moving towards more sustainable lifestyles rests, therefore, on the contradictory messages individuals face in their everyday life when they come into contact with businesses and governments.

Lowest ownership rates of consumer durables in the EU-25 Member States in 2006 (EC, 2009):

- Colour television 94.3% in Finland (of which 1.2% could not afford it)
- Telephone 89.9% in Lithuania (of which 6.2% could not afford it)
- Washing machine 76.5% in Denmark (of which 2.7% could not afford it)
- Car 41.6% in Latvia (of which 35.7% could not afford it)
- Computer 35.1% in Greece (of which 14.3% could not afford it)

Opportunities: emerging and promising practices

Emerging solutions and promising sustainable consumption practices can be clustered into three general categories (de Leeuw 2002): efficient consuming, different consuming and sufficient consuming. The following sections introduce these categories, their expected benefits, the challenges they address and their potential for growth.

Opportunities for sustainable consumption

- Efficient consuming: quality, long-life, and environmentally-sound products
- Different consuming: collaborative consumption
- Sufficient consuming: reducing meat consumption, voluntary simplicity, "Transition Towns"

Efficient consuming: using products and services efficiently

For many products, especially those using consumables materials (e.g. water or electricity), some 80% of environmental impacts are associated with the "use phase". For example, 75% of the energy consumption linked to a pair of trousers arises from washing, drying and ironing (CSCP and UNEP DTIE 2007).

Both consumers and providers of products have roles to play in improving use-phase efficiency. The former by changing use habits by, for example, washing clothes less often or at lower temperatures or by avoiding food waste. Businesses can develop more efficient and less-toxic products (Promising practice 1), or design products in a way that enables more efficient use by consumers, for instance by setting default options on the most efficient settings. Consumers can choose to upgrade products by, for example, improving the performance of their computer through software of hardware upgrades, or by "restyling" clothing

(Promising practice 2). To give products a second life, goods like clothing, leisure equipment, books and DVDs can often be reused by other people if passed on to second-hand or charity shops. And finally, the many valuable materials in products can be reused and recycled.

Efficiency offers potential to reduce both waste and exploitation of non-renewable resources as well as reduce emissions of toxic substances. In addition, there is a large potential to scale-up efficiency. Today, as an example, use-phase efficiency is an increasingly important factor in the marketing of white goods and appliances (electricity consumption). The wide availability of 100% chlorine-bleach free household paper products is another successful example.

There are, however, significant barriers to a widespread up scaling of efficiency to consumer products in general. Upgrade and repair, for example, is rarely economically viable given that the cost of human labour often exceeds that of virgin raw materials. Green tax reform offers potential to partially overcome such challenges.

Different consuming: from quantity to access and quality
Consuming differently implies several shifts in the way we consume. The first is the shift from owning many low quality, low cost and short-lived products toward gaining access to high quality goods and/or services. Rather than owning goods that are only rarely used, such as home repair tools and garden equipment access to products can be organised on the basis of collaborative consumption – an emerging global trend (Botsman and Rogers 2010).

Sharing systems can be established by users directly through peer-to-peer networks (Promising practices 3 and 4) or sharing can be mediated by businesses (Promising practice 5). The growth of such schemes is facilitated by the emergence of new technologies that connect suppliers and users (Kuhndt and Groezinger 2011).

There are signs that even mainstream companies have begun to diversify products with services. Examples include food delivery services from food retailers or tailoring and fitting services from textile retailers. Consumers are also looking increasingly for the added value of services and experiences rather than simply purchasing goods. The emergence of the experience economy is confirmed by the growing interest in gifts such as spa sessions or massage treatments, cinema tickets or cooking courses as opposed to products (Mont and

PROMISING PRACTICES

Promising practice 1:
Reducing chemical exposure in the beauty industry

WorldSALON is not a typical beauty parlour, but an eco-hub. It has reduced its electricity consumption by more than 50% over the last 17 years and uses environmentally sound alternatives to toxic hair and beauty products.

http://www.ethicalocean.com/sellers/worldproducts

Promising practice 2: Upgrading

The Fashion Reloaded initiative took place during Berlin Fashion Week in 2009 and 2010. People were asked to bring and swap their unused clothes. Once swapped, the garments could be redesigned and restyled at a workshop fully equipped with materials, tools and sewing machines, as well as practical assistance.

http://fashionreloaded.com/

Power 2009). This shift in spending in favour of areas with a low environmental impact, such as education, communication, or recreation and culture (barring activities that involve intensive use of transport) has the potential to reduce the current environmental pressures of consumption (EEA 2010a).

These practices reduce the number of products lying idle in our homes and enable other users to satisfy their needs with products that they do not own. This reduces the need for new products while increasing the demand for high-quality products that are robust and durable enough to cope with far greater use by many – rather than one – consumer.

These practices have great potential to proliferate into the mainstream and there are signs that this is happening today. The value of the peer-to-peer lending markets led by Zopa and Lending Club has been estimated to have grown by 66% to reach $5 billion between late 2009 and the end of 2013 (Gartner Research 2011).

Sufficient consuming: focusing on improving quality of life
There is a promising trend toward collective efforts among a growing number of people who are interested in alternative and sustainable models of living (Power and Mont 2010b). These include, for example, eco-villages or Transition Towns. The Transition Towns model is becoming popular with groups and there are examples emerging in many parts of Europe, North America and in Chile. The Transition Town concept works on a principle of "learning by doing" through modelling what others around us do, and creating new social norms – all of which are thought to be effective routes to sustainable behaviour change. This helps to reduce dependence on the market system and reduces ecological footprints (Promising practice 6).

PROMISING PRACTICES

Promising practice 3: Exchange, swapping and sharing
Rather than throwing something away, people engage in online exchange networks, such as: Shareable.net an online magazine with postings and discussions about the sharing economy by registered users, Netcycler.fi an internet service that lets people swap their goods with others for free (80,000 members in October 2011), or kleiderkreisel.de clothes swapping network (90,000 members in Germany).

Promising practice 4: Community agriculture
Urban farms are popping up around the USA and Europe, using un-used urban spaces to grow food. Landshare is an online social network in the UK for people with a passion for home-grown food. It connects people who need land to grow food with those who have land to spare, and also connects growers so that they can share advice, find land, create groups, and swap surplus seeds and crops. http://www.landshare.net/

Promising practice 5: Collaborative consumption
The communal washing centre is the oldest and most common alternative to washing clothes at home in Sweden. Electrolux delivers a clean clothing service through a collective system where neighbours share washing machines. The system has lower environmental impact than individual ownership. Unlike car sharing schemes, communal washing centres are not a niche market, but are very widely used in Swedish towns and cities (Mont and Plepys 2007).

Promising practice 6: Transition Towns
Transition Towns is a movement that brings groups of people together to develop and implement their own sustainability plans. They work with existing community groups, local authorities and interested individuals to set up locally-based solutions in a variety of areas. These include promoting practical skills and training programmes, establishing land allotments, working with local businesses, improving energy efficiency, and establishing local currencies (LETS) (Power and Mont 2010a).

The voluntary simplicity movement – where people leave their business-as-usual jobs to focus on local, small-scale activities – is also gaining momentum in the United States and Western Europe (Alexander 2011). Moreover, new low impact lifestyle trends are emerging including the Slow Living movement, the LOHAS (Lifestyles of Health and Sustainability) and voluntary downshifting (McDonald, Oates et al. 2006). There is also a resurgence of public campaigns against materialistic ways of life such as the "Buy Nothing Day" campaign.

Concerns about materialistic lifestyles among the young generation and a high environmental and social awareness are all positive trends that suggest that alternative lifestyles have the potential to proliferate in the future.

Despite the diversity of initiatives, there are similarities on the perceptions of what constitutes a high quality of life. Many young people do not define life quality in terms of money or material status, but rather in terms of a healthy balance between work and private life with time to spend on one's own health, connecting with other people, or exploring new personal development paths and accomplishments.

Another form of "sufficient consuming" can be seen in the phenomenon of consuming less. As our lives become more complex, a growing number of people prefer to shape their life in a simpler way to reduce the pressure created by an over abundance of "stuff" or to reduce the adverse impacts of over-consumption (Promising practice 7). As American author Francine Jay puts it "minimalism isn't about owning 100 things, or 50 things, or less – but rather what's just enough for you".[4]

The practices outlined above can help reduce household environmental and social impacts by reducing the material consumption and ecological footprints of those involved. People in turn tend to be more satisfied with their lives often as a result of the collective nature of these schemes.

Concluding remarks

This section has provided a snapshot of current consumption patterns, the related impacts and has illustrated what sustainable consumption represents within the framework of the SPREAD Sustainable Lifestyles 2050 project. The information presented here is based on the latest available literature and on inputs from participants of the SPREAD project launch conference held in May 2011 (SPREAD consortium partners 2011).

4 www.missminimalist.com

PROMISING PRACTICES

Promising practice 7: Reducing meat consumption

The aim of the Weekly Veggie Day is for cities to encourage citizens to have one day a week without meat or fish. The objective is to encourage consumers to eat less meat with an appealing, realistic and tasty message (Stad Gent 2010).

A major reduction in meat and dairy consumption (accounting for 50% of the ecological footprint of our food), generated by eating local, seasonal food, and through improved farming efficiency and reduced food waste could cut the ecological footprint of food by as much as 60%. (Bio-Regional and CABE 2008).

The evidence presented here leaves no doubt respecting the need for change in the nature and quantity of our consumption.
The shift towards more sustainable lifestyles will require engagement among a broad cross section of stakeholders, as consumers alone cannot purchase products that are not available at prices that are far greater than conventional products. Consumers are unable to stop using unsustainable infrastructure in the absence of convenient sustainable alternatives. On their own, consumers cannot change the social norms that drive materialism and consumerism, particularly in the face of marketing efforts of business and policy interventions by governments.

LIVING

The SPREAD Working Group on Living is led by the Energy research Centre of the Netherlands (ECN) and Ecoinstitut Barcelona (ECOI). This section collects and connects the main trends, opportunities and challenges that impede sustainable living as one aspect of sustainable lifestyles. The main focus is on people and their behaviours, buildings and appliances, and services and infrastructure, looking at behaviour change, building renovations and integrated and collective approaches to sustainable living, as well as the trends, actors and technologies that play a role today or could do so in the future.

EMERGING PRACTICES FOSTERING MORE SUSTAINABLE LIVING

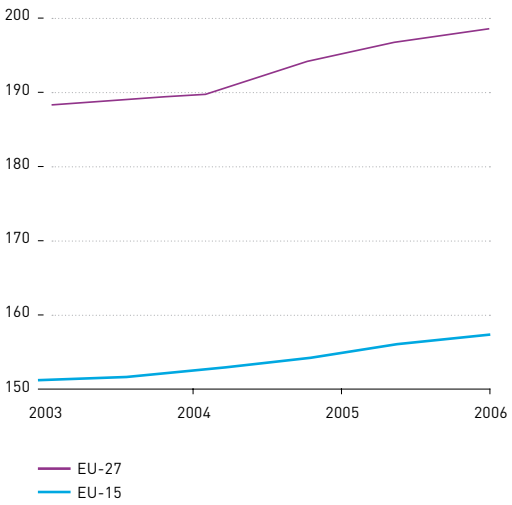
- **Efficient housing:** Eco-labelling and energy efficiency improvement of appliances reduce household energy consumption. Information, incentive schemes and stakeholder support helps homeowners carry out home energy efficiency renovations across socio-economic groups, owner-occupier constellations and building types. New building designs aim at a nearly-zero or positive energy balance.
- **Efficient users:** Tailored demand-side management programmes, smart consumption feedback technologies and increased awareness of potentials for savings and environmental effects trigger and motivate long-term behavioural changes.
- **Efficient infrastructure:** Collective multi-stakeholder and participatory approaches to urban planning and the design of transport and other infrastructure supports community and urban sustainably.

Current situation: unsustainable living

The millions of individual households in Europe place a major burden on the environment and on resources – both locally and globally. The number of households in Europe has grown while the number of occupants in each individual household has decreased (Figure 5), with more and more homes now occupied by single people, or by single parents with children. While this trend is stronger in Northern Europe than in Southern or Eastern Europe, it can be seen across the region (Eurostat and European Commission, 2010).

"Space can really facilitate collaboration. Not only common spaces that we have in condominiums, for example, but also public or semi-public space, owned and taken care of by a specific community but open to everybody."
— **Marta Corubolo**, *Politecnico di Milano, SPREAD consortium partner*

Figure 5 Number of households, EU-27 and EU-15 (in millions)



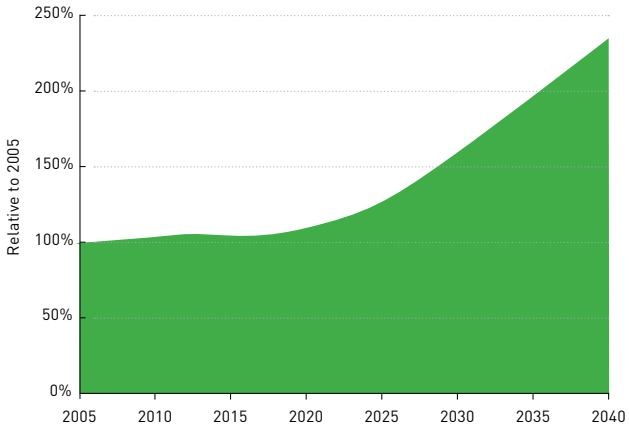
Source: Eurostat and European Commission (2010), p. 33

Relevant trends in the living domain:

- Increasing number of households
- Decreasing size of households
- Increasing living space per capita
- Aging society
- Increasing energy consumption

An important trend is the ageing of European societies. For example, future projections in the Netherlands show that an ageing population, coupled with a tendency to provide more living space per inhabitant in elderly homes could double energy demand of that service sector by 2040 relative to 2005 (Figure 6).

Figure 6 Projected surface area of housing for the elderly 2005-2040

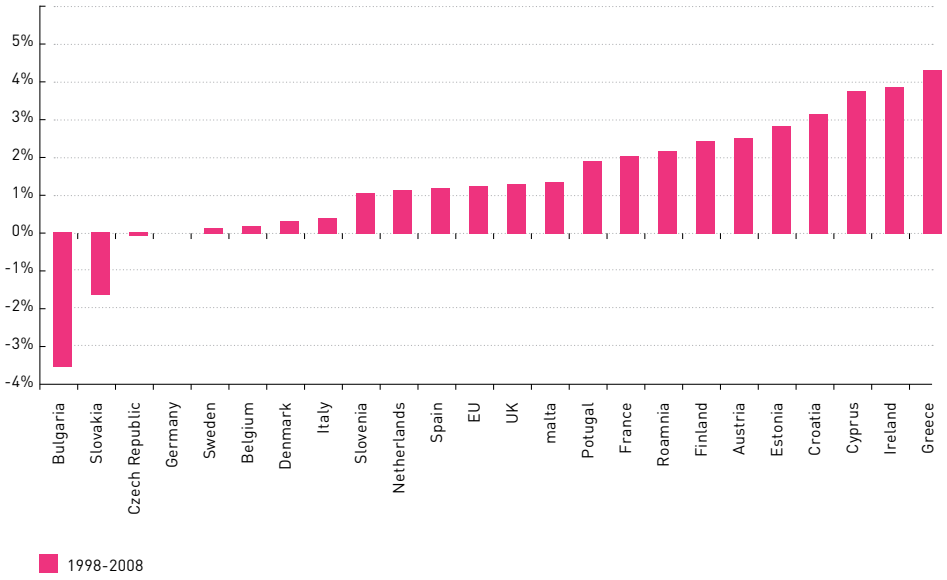


Source: ECN[5]

One result of the growth in the number of smaller households is that the building sector is now responsible for 40% of EU energy consumption and 36% of total CO_2 emissions (Holl 2010). Household heating accounts for 67% of total household energy consumption in Europe (EEA 2010a). Electricity consumption for appliances and lighting has increased in almost every European country over the past decade with an average increase of 1.2% per year between 1998 and 2008 (Figure 7).

The building sector is responsible for 40% of EU energy consumption and 36% of EU CO_2 emissions (Holl 2010).
Household heating in Europe accounts for 67% of household energy consumption (EEA 2010a).

Figure 7 Trends in electricity consumption per dwelling for electrical appliances and lighting



Source: Odyssee/Enerdata (2011) Estonia: 2000-2007; Malta: 2000-2008; Finland: 1998-2007; Greece: air conditioning included

5 To estimate the development of space required for elderly homes in the Netherlands figures from CBS regarding the demographic development of the Dutch population, people living in elderly homes and the development of space available for each inhabitant in an elderly home were employed within the SAVE-S model developed by the Energy research Centre of the Netherlands (ECN): http://www.ecn.nl/units/ps/models-and-tools/save-services/

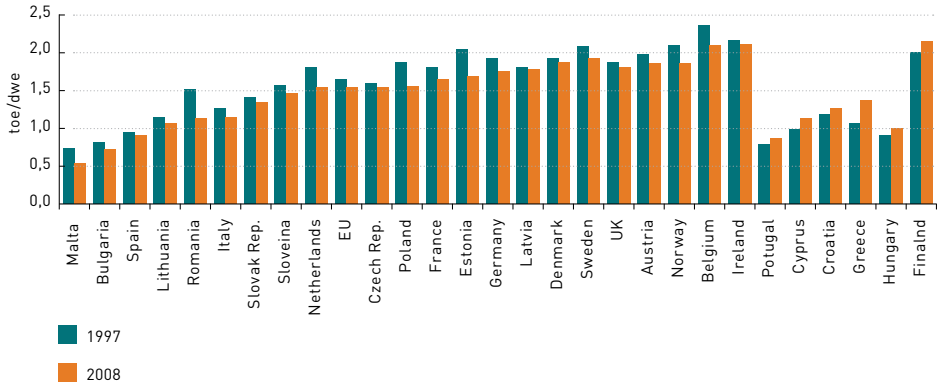
Trends towards more sustainable living:

- Demand-side management programmes
- Increased awareness
- More efficient appliances
- More efficient buildings
- Behaviour change and energy efficiency investments

Trends toward more sustainable living

There have been many positive sustainable living developments. First and foremost there is a growing awareness of the need for change and a growing willingness to invest in environmentally friendly materials. Further, efficient appliances and technologies are becoming increasingly available and are falling in price. These changes are driven, at least in part, by public policy that creates subsidies, restrictions, standards or other requirements. As a result, average energy consumption by individual dwellings is decreasing in most European countries (Figure 8).

Figure 8 Average consumption per dwelling (at normal climate) in tonnes of oil equivalent (TOE)



Source: Odyssee/Enerdata (2011)

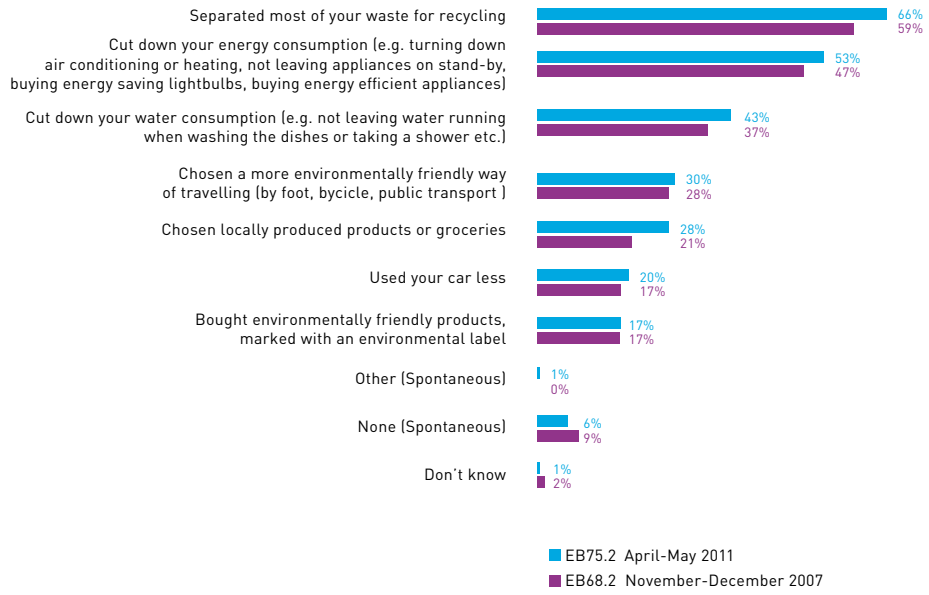
Many private homeowners make home energy efficiency investments and indicate an intention to continue these investments in the future. A 2009[6] survey of over 3,000 homeowners in five EU countries demonstrated that almost half of EU homeowners use energy efficient compact fluorescent lamps (CFLs), and that a quarter had installed a new boiler/heating system and had fitted their homes with double- or triple-glazing. Most respondents (55%) planned to carry out further energy efficiency improvements and almost 15% planned to install renewable energy technologies within the next three years (Adjei, Hamilton and Roys 2010). Of course, reported plans and intentions are not necessarily always followed by actual realisation.

A recent Eurobarometer[7] survey showed an increase in the number of people in the EU-27 reducing energy and water consumption in addition to reducing and separating household waste (Figure 9).

6 This survey was carried out by the IDEAL Energy Performance of Buildings Directive (EPBD) research project, financed by the EU Intelligent Energy Europe programme. The five countries included in the survey were Denmark, England, Finland, Germany and the Netherlands. For more information, visit www.ideal-epbd.eu.

7 Attitudes of European citizens towards the Environment, August 2011, European Commission, http://ec.europa.eu/environment/pdf/ebs_365_en.pdf

Figure 9 Household action on energy, water and waste, 2007-2011



Source: http://ec.europa.eu/environment/pdf/ebs_365_en.pdf

In addition to a growing awareness among ordinary people, a growing number of institutions, organisations and initiatives, ranging from public information centres, to commercial energy service companies (ESCOs) and local grassroots initiatives are aiming to support more sustainable living practices. The targeted behaviour changes range from decision-making on the purchase of a building and its renovation to the use of electricity and energy consuming equipment (Breukers et al. 2009).

Energy efficiency definitions and standards for low energy buildings vary across countries and there are at least 17 different terms in use across the EU (Bertez 2009). A common low energy standard is the so-called "passive" house that requires total energy demand for space heating and cooling be capped at 15 kWh/m^2 (PEP 2011). By 2007 over 8,000 passive houses had been built in Europe (Passive-On 2011). A common design concept for passive houses is the efficient and effective use of self-produced solar energy through an airtight building envelope, high insulation standards and automatic ventilation with heat recovery (Loonen 2010). Potential problems with such features, especially in Southern Europe due to high summer temperatures, can be poor indoor air quality, overheating, and a lack of flexibility to cope with unexpected conditions.

The challenges of sustainable buildings have motivated a search for more responsive and dynamic buildings in recent years through "active" technologies that respond to changing weather and indoor conditions. These so-called climate-adaptive building shells (CABS) can range from blinds that are controlled automatically to high-tech materials that sense and respond to changing conditions by increasing or decreasing building insulation (Promising practice 8). CABS technologies are still in the research stage and there are, to date, only some 40 full CABS dwellings and just 20 with CABS components (Loonen 2010).

When it comes to the installations and appliances inside people's homes, the energy efficiency of heating and large electrical appliances has, on average, increased by 1% and 1.5% respectively over the past decade. The market share of A-label appliances (indicating that they are the most energy efficient) grew from just 10% to as high as 90% between 1998 and 2008.

Decentralised renewable energy production has also grown significantly in the private household sector. The diffusion of solar water heaters, for example, has soared, reaching an astonishing 75% of households in Cyprus in 2000, with Greece also making significant progress from 2000 to 2009 (35% of all dwellings equipped with a solar water heater). In Austria, 24% of dwellings have such heaters, falling to 11% in Malta and 6% in Germany (Odyssee/Enerdata 2011). In Spain the Technical Building Code has, since 2006, included an obligation to meet up to 70% of domestic demand for hot water through solar thermal energy (for new buildings and major renovations).

Challenges to sustainable living:

- Increasing number and size of dwellings
- Existing, energy inefficient buildings
- High costs, long pay-back times and complicated application procedures for subsidies for building renovations
- Lack of trustworthy information and advice for building renovations
- Growing number of electricity consuming appliances in households
- Stimulating and supporting long-term behaviour change
- Rebound effects

Challenges to more sustainable living

One over-arching challenge that influences our ability to live in a sustainable way is our large stock of existing buildings and urban structures. Houses are built to last and it may take decades before a building is substantially renovated to reduce energy consumption, or even replaced with a new "nearly zero" or "energy positive" building. In addition, the building sector is a conservative industry. It takes time to educate and persuade professionals about the benefits of new design approaches and to develop effective collaboration between architects, building material suppliers and the construction industry to foster more efficient housing.

One particular challenge is the increasing size and number of individual dwellings (Odyssee/Enerdata 2011). People value comfort, which means space, warmth and light, with large rooms, high internal temperatures and large windows. All these factors lead to high levels of energy consumption. This also means that investments in building renovations, such as loft insulation or new heating systems, are not always about energy savings, but about creating more available living space or higher indoor temperatures (Bartiaux 2011).

The energy efficiency of buildings is also challenged by high costs and long pay-back times for building renovations. This is exacerbated by a tendency for homeowners to prioritise immediate gratification over long-term benefits (Breukers et al. 2009). Another challenge is the owner-occupier issue: who pays for building renovation and who profits from the (financial) benefits if people do not own the buildings in which they live? A related challenge is that energy efficiency is not yet reflected in the market value of a building. The energy performance certificate of buildings offers potential to influence market values, but its current intended effect is only the informational aspect.

PROMISING PRACTICES

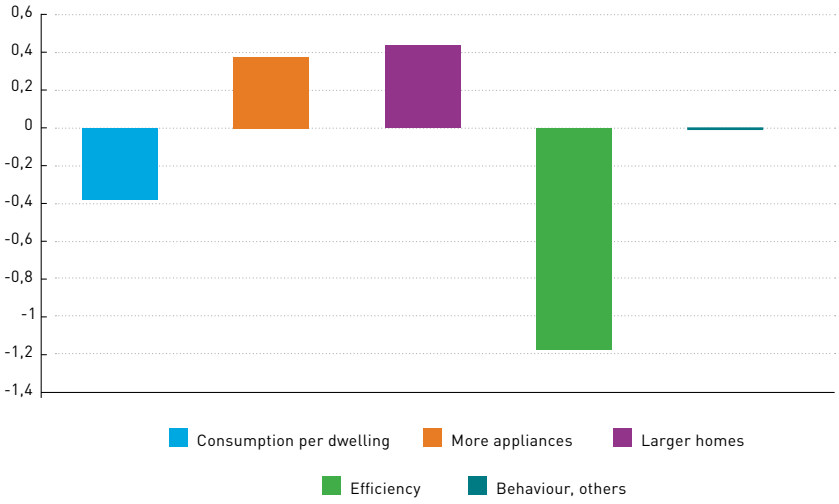
Promising practice 8: Energy efficient building shells.

Climate adaptive building shells (CABS) are designed to reduce energy demand while maintaining comfort levels. These buildings can repeatedly and reversibly change their functions, features or behaviour over time in response to changes in performance requirements and external conditions.

Subsidies and other incentives for energy-related renovations are available in many countries. The effectiveness of public support programmes is, however, often limited due to confusing and contradictory information and complicated application procedures. In addition, the available incentives are often only attractive for those who are financially very well off. This means in turn, that those who live in low-quality housing and who could profit most from cost savings and health benefits linked to building renovation, do not enjoy access to the necessary financial support (Bartiaux 2011). The lack of skills and knowledge among building sector professionals respecting energy efficiency measures poses another challenge for consumers to receive effective advice and renovations for energy efficiency (Adjei, Hamilton and Roys 2011).

The growing number of electricity consuming appliances is a further challenge to achieving significant energy savings. From a lifecycle perspective, the environmental impact of the technical equipment we use relates mainly to its "use phase" (i.e. after production and purchase, before disposal). In many cases inefficient appliances even draw electricity from the grid whether in active or in stand-by mode. As Figure 10 shows, the increase in the number of appliances and the size of dwellings has offset about 70% of the energy efficiency progress achieved in the EU ("rebound effect").

Figure 10 Drivers of the variation in energy consumption per dwelling (1990-2008)



Source: Odyssee/Enerdata (2011)

Two different types of "rebound effects" are generally distinguished, direct and indirect. Related to energy consumption in the built environment, an example for direct rebound is an increased indoor air temperature instead of decreased energy consumption as consequence of energy efficiency renovations. Direct rebound effects for household heating and cooling are estimated to be less than 30% (UKERC 2007). Indirect effects, such as spending money saved on energy on additional electricity consuming devices or high environmental impact activities are difficult to estimate.

An important challenge is taking rebound effects into account in policy making and other interventions for more sustainable living. This will reduce the apparent effectiveness of such interventions but at the same time give more realistic insight into how more sustainable ways of living can be supported. In addition, it can lead to a more integrated mix of policy instruments, that aims to overcome barriers to substantial energy savings while at the same time addressing norms and values by shifting household expenditure to less impactful activities (Figure 3).

Savings potential of behaviour change:
- Depends on many factors, such as household size, type of equipment
- Estimates for efficiency potentials range from 10% to 40% (Breukers et al. 2009; Dietz et al. 2009)

Behaviour change, such as switching off devices and appliances that are not in active use is another way to address this challenge. However, there are also many challenges to triggering and maintaining changes in people's behaviours (Breukers et al. 2009). Greenhouse gas emissions, global warming, and "peak oil", are abstract and global phenomena to most people as is the linkage to private electricity consumption. From a user perspective, electricity consumption and carbon emissions are "invisible" side-effects of the services that devices and appliances provide.

Market prices for fossil energy are low as most social and environmental costs are "externalised". Although there are households that struggle to pay their energy bills and must constantly monitor their own energy consumption (Brunner, Christanell, Spitzer, 2011), the vast majority of households do not feel the need to pay attention to the many, often small, opportunities for saving.

In addition to the challenges related to finances, knowledge and awareness, another major challenge to mainstreaming sustainable living is that current conditions and behaviours are to a degree "locked in", such as in the case of large urban infrastructure for heat, water and transportation. Another example is our cities, planned for urban sprawl and full of low efficiency, resource-intensive housing. Even individuals wanting to live in eco-communities or eco-villages find that supply of such housing is insufficient to satisfy demand (Bio Regional, 2009).

Opportunities: emerging and promising practices

Opportunities for sustainable living:
- Efficient housing
- Efficient users
- Efficient infrastructure

Sustainable living involves, among other things, people, homes and infrastructure for heat, water and waste management. As discussed earlier, there are challenges that stand in the way of change in all of these spheres, but there are also opportunities. These opportunities are clustered here under three main themes: efficient housing (buildings and appliances), efficient users (people and their behaviours), and efficient infrastructure (urban planning issues and systems of provision, e.g. for heat, water and waste services).

Efficient housing: buildings and appliances

Three key elements to create and strengthen opportunities for efficient living:
- Finance
- Knowledge
- Involvement

Across Europe there are significant differences in the existing housing stock, regulations for renovation of existing buildings and new construction and different financial resources available to building owners. Energy savings of up to 20% have been estimated to be possible by 2030 through the renovation of private housing stock in Europe alone (Tuominen and Klobut 2009). Most (if not all) EU countries have financial support schemes for energy efficiency renovations. Although there is room for improvement of the current incentive programmes in terms of information, application procedures and scope (i.e. including people who have limited finances), homeowners do appreciate and make ample use of available schemes (Adjei, Hamilton, Roys 2011; Bartiaux 2011).

An increasing focus on expert knowledge and competencies with energy efficiency aspects of building design, construction and renovation is another opportunity to enable larger-scale changes. Architecture students today learn about sustainability issues in building design and materials. Multi-disciplinary teams are cooperating to design high efficiency buildings without compromising wishes and needs of inhabitants (Hofer, Herzog, Grim 2011). Knowledge and education centres are being established to combine "know-what" and "know-how" under one roof (Promising practice 9).

Multi-family apartment buildings require a different kind of support that what is needed for single-family homes. These include new financial models and planning processes that involve building co-owners. This is of particular importance in Central and Eastern European (CEE) countries with a large stock of multi-family apartment buildings that date from the Soviet era and where large-scale renovations often require a (hard to reach) quorum of apartment owners. Energy efficiency refurbishment has become a priority for CEE countries in recent years. In many countries the EU emission trading scheme has facilitated funding for large scale refurbishment of multi-story block buildings (Fammler 2011). There are an increasing number of energy experts capable of providing guidance and advice on the process of collective decision-making and building renovation (Promising practice 10).

In general, active involvement in the planning and implementation of energy efficiency measures is an opportunity not only for multi-apartment buildings but for all owner-occupier constellations and building types. Involvement goes beyond awareness raising and information to help people make decisions and take action, providing advice and support where needed. Useful tools to inform people about energy issues include standards and eco-labels for appliances and energy labels for buildings as implemented through the EU's Ecodesign and Energy Performance of Buildings Directives.

Bundles of policy instruments that address more than one consumption phase (purchase, use, disposal) for energy consuming products and appliances could help to reduce almost 30% of additional housing-related GHG emissions by 2030. Measures include the enhancement of existing instruments such as optimising performance standards for existing buildings, promoting efficient appliances, individual metering, increased energy advisory and audit services for residential customers, or the implementation of an energy tax on final energy consumption to prevent rebound effects (Brohmann et al. 2011; Maxwell et al. 2011).

PROMISING PRACTICES

Promising practice 9: The Danish Knowledge Centre

A Knowledge Centre for Energy Renovation of Buildings has been created in Denmark. This organisation offers courses and advice for professionals in the construction and renovation sector based on state-of-the art knowledge and experience.

Promising practice 10: Multi-apartment building renovation pilot in Latvia

A pilot project to implement energy efficiency measures in Latvian multi-family apartment buildings that require a 51% quorum among residents was undertaken in 2009-2010. An energy expert, together with building managers and building "elders" (spokespeople) informed residents about possible renovation and financing options and their potential benefits. http://mechanisms.energychange.info/project-stories/5

Information has, however, been most effective when delivered in a way that is tailored, based on "real life" and focused on benefits – not only financial benefits but also, for example, on improvements to indoor climate and building appearance (Breukers et al. 2009). This demonstrates the limits of labelling as a means to provide information respecting energy efficiency aspects of products from the time of purchase to the use phase of buildings and appliances. Labelling can, however, function as a point of entry to processes that support large-scale shifts towards efficient living – a shift that requires an exchange of knowledge and information between policy makers, business, society, and the research community.

Efficient users: people and behaviour

While energy savings achieved through design and construction of efficient buildings and appliances are important, there is equally important need for efficient use habits by consumers. This requires a focus on people and their behaviours. There are many opportunities for change in this area, including focusing on information and education, establishing new social norms and monitoring and feedback mechanisms, and shared housing.

Raising awareness of energy consumption and its relation to our environment is crucial. Many actors on different scales ranging from local municipalities to international NGOs run information campaigns to increase awareness and provide information on the potential of energy savings. Somewhat smaller scale initiatives with concrete information and guidance are effective in the short term by means of creating new social networks that can also, in turn, support longer-term changes (Promising practices 11 and 12).

One approach to raising awareness of personal energy consumption is to increase visibility of consumption through frequent feedback, for instance through regular billing with clear consumption and cost information. ICT services are available that monitor and indicate detailed energy consumption data on in-house displays or internet portals. Several countries have begun to roll-out "smart meters" that monitor consumption and more are set to follow. Although these feedback technologies and services are still in the early stages their added value in terms of supporting behaviour change is already clear.

PROMISING PRACTICES

Promising practice 11: EURONET 50/50

The 50/50 project is supported by the Intelligent Energy Europe programme. At least 50 schools will get involved using the 50/50 methodology developed in Hamburg (Germany) in 1994. The idea is that 50% of the energy savings achieved in the school will return to the centre as economic transfers, while the other 50% will be a net saving for the manager of the school building.

http://www.euronet50-50.eu

Promising practice 12: Behaviour change programmes

The Hungarian energy intermediary GreenDependent implemented a nationwide behaviour change programme focusing on a sense of community achievement between May 2010 and April 2011. A total of 500 families participated. The leading 21 families achieved a carbon footprint reduction of 3.5 tonne/year/capita (more than 60%) relative to the Hungarian average.

www.greendependent.org

The Finnish government-owned company Motiva and social housing association VVO together developed the Energy Expert programme in 1993. Since then over 3,000 volunteers have been trained as "peer to peer advisors" on more sustainable energy and water consumption behaviours in their neighbourhoods and communities. On average, 5% energy conservation for heating, 10% for electricity and 20% for water usage are achieved.

www.energychange.info

In addition to providing information that is easy to understand, people should be offered concrete advice and recommendations to facilitate changes in energy consumption behaviour. "Gamefication" or competition could be used to make the interaction between people and technology more exciting and to motivate more people to engage in long-term energy saving measures.

One form of housing that is already common among students is now attracting wider interest across different age and social groups: shared housing. People value the comfort of larger dwellings and the company provided by shared accommodation. There are opportunities to support this trend by providing information and advice on co-housing opportunities. Co-housing is essentially a combination of private dwellings, each with its own privacy and autonomy, but with the added advantage of shared facilities such as living rooms, micro-nurseries, laundry facilities, guest accommodation and gardens, which offer social, environmental and economic benefits to the community (Promising practice 13).

Efficient infrastructures: urban structures and planning
People, their behaviours and the buildings they live in are embedded in socio-technical systems. These systems also include infrastructure for energy production and distribution, water treatment and distribution and waste water treatment, waste collection and treatment, and so forth. To achieve larger scale change to facilitate and support sustainable living, we need change that increases efficiency and sustainability in each of these areas.

In terms of renewable energy, an ever growing share of households and businesses are installing small-scale renewable energy technologies, and energy providers are investing in large-scale renewable energy options. Smart ICT technologies offer promising technological solutions to the challenge of balancing electricity demand and supply and, in turn, to stabilise increasingly decentralised electricity systems with higher levels of electricity from (often intermittent) renewable sources (Promising practice 14).

In terms of sustainability in urban planning and local legislation, recent years have witnessed many neighbourhood or city initiatives, such as the Agenda 21 and the Transition Town movements that are aimed at more "sustainable living" in the full breadth of its meaning. These initiatives offer strategic and integrated approaches to (infra-)structural changes that take individual needs and wishes into account. Their participatory nature helps to build and strengthen local so-

PROMISING PRACTICES

Promising practice 13: Co-housing in Italy

In Italy the first co-housing initiative was developed by the Politecnico di Milano - INDACO Department in partnership with Innosense (a social innovation agency). The initial goal was to design solutions that facilitate and replicate co-housing communities in Milan and across Italy by promoting two main initiatives: (1) Co-housing.it, an online community of people interested in co-residence issue; and (2) Co-housing Ventures, an enterprise offering professional consultancy to groups of future co-housing residents.
http://cohousing.it/

The first co-housing community was designed in Denmark in 1964. http://www.cohousing.org/cm/article/related_denmark

Promising practice 14: Smart grid demonstration on Bornholm

The EcoGrid project is an ambitious smart grid project on the Danish island of Bornholm. Through smart meters and other ICT technologies, consumers can shift flexible energy loads (i.e. electricity demand) to times of the day when more renewable energy, in particular wind energy, is available.
www.eu-ecogrid.net

cial networks, cohesion and democratic values, which provide a good basis for continuous long-term development through collective action. They help to create a shared sense of meaning for collective and individual action, with everyone contributing to a goal that has collective value, such as improved local air quality, green space preservation, and more effective recycling among other things (Promising practice 15).

Concluding remarks

Successful efforts to promote sustainable living must focus on people, buildings and infrastructure. This requires an end to piecemeal thinking. At the same time, there is a significant opportunity to design policy programmes, business models and social projects that address sustainable living in all its interrelated and complex dimensions by integrating economic, environmental and social sustainability within participatory approaches to change.

MOVING

This chapter of the report focuses on the impact of current patterns of personal mobility on present and future generations till 2050.

EMERGING PRACTICES FOSTERING MORE SUSTAINABLE MOVING

- 'Efficient technology' means technology that decreases fossil fuel dependence, such as electric vehicles that use renewable energy or information and communication technologies that support modal transport shifts to public transportation or more efficient travelling by avoiding congestion.
- 'Efficient users' means a modal change: shifting from cars to a more sustainable means of transportation, including walking and cycling or car sharing.
- 'Efficient infrastructure' means changes in infrastructure, urban planning and policy instruments to support or even favour more sustainable moving (e.g. car free cities).

The SPREAD Working Group on Moving led by the Regional Environment Centre or Central and Eastern Europe (REC) and the Ecoinstitut Barcelona (ECOI) has discussed how personal mobility is currently organised, from the use of individual cars to public transport, and from walking to cycling. Discussions have aimed to evaluate the impact of everyday mobility patterns on the environment, including greenhouse gas (GHG) emissions, road-systems, spatial planning and air pollution; on society, including families, local communities and transport services; and on safety, time management and integrated mobility modes.

PROMISING PRACTICES

Promising practice 15:
Eco-district Freiburg Vauban, Germany

In 1993, the development of a new district began in the South of Freiburg, on the former Vauban military base. The aim was to develop a city district in a cooperative, participatory manner that would meet ecological, social, economic and cultural needs. The 38 hectare district was completed in 2006, offering space for 5,000 inhabitants and 600 jobs. The participatory process was coordinated by Forum Vauban e.V., a NGO citizen's association. The major driving force behind the project was the ideas, creativity and commitment of the people involved and the shared goal to create a sustainable, flourishing neighbourhood.
http://www.vauban.de/info/abstract.html

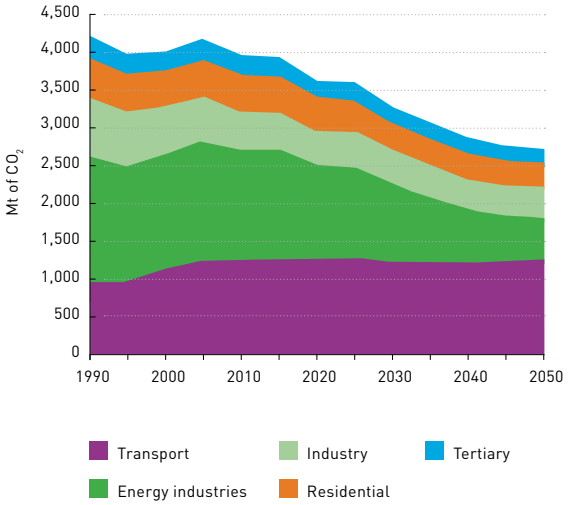
Current situation: unsustainable moving

In its Roadmap to a Single European Transport Area White Paper, the European Commission declared that the transportation system is not sustainable, even though much has been achieved since the 2001 White Paper on Transport (EC 2001). The document says:

> *"Looking 40 years ahead, it is clear that transport cannot develop along the same path. If we stick to the business as usual approach, the oil dependence of transport might still be little below 90%, with renewable energy sources only marginally exceeding the 10% target set for 2020. CO_2 emissions from transport would remain one third higher than their 1990 level by 2050. Congestion costs will increase by about 50% by 2050. The accessibility gap between central and peripheral areas will widen. The social costs of accidents and noise would continue to increase." (EC 2011a)*

Congestion in cities is already an enormous problem. In big cities the average road speed for cars has levelled off at around 15 km/h due to congestion (Radanne 2011). Figure 11 illustrates that, based on current trends, by 2050 transportation will be the source of 50% of total CO_2 emissions – the only sector showing an increase in emissions. On current trends CO_2 emissions from transportation will be 35% greater than their 1990 level with most of the rise stemming from increased emissions during the 1990s.

Figure 11 CO_2 emissions projections for different sectors



Source: PRIMES and projections based on TRANSTOOLS for maritime (EC 2011b)

Trends towards more sustainable moving

The European Community is working to shift transport trends toward a more sustainable pattern with a focus on the following priorities:

Trends towards more sustainable moving:
- Efficiency
- Equity and accessibility
- Safety and security

Efficiency

Several initiatives are already in place to improve the efficiency of transport systems. Examples of initiatives that could influence current unsustainable trends include the Single European Transport Area, multimodal transportation for goods, vehicle labelling, application of intelligent transport systems and urban mobility plans. A big challenge, however, is to break the transport system's dependence on oil.

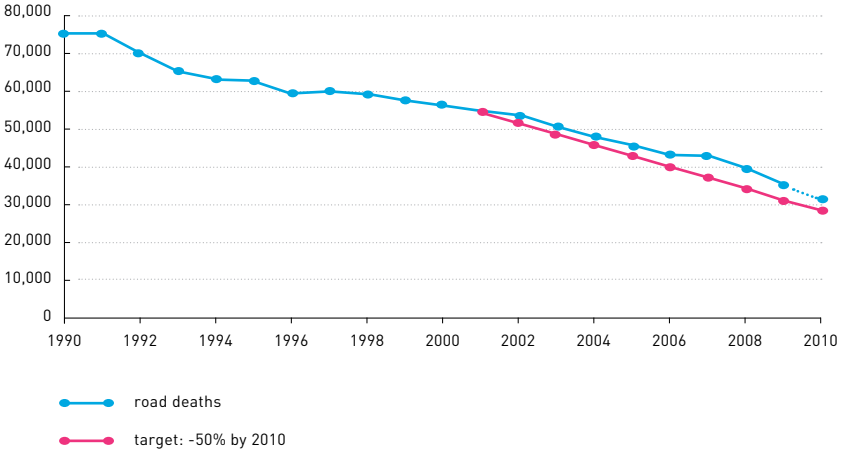
More efficient transport of people and goods can be supported by well-designed information systems, with reduced energy consumption and optimal timing as major drivers for efficiency.

Equity and accessibility
Equity and accessibility can be defined as "ease of access or reach". This is about increasing the ability of people to get where they want to go by using different types of transportation to reach different types of locations. Urban planning has a great role to play to ensure the possibility of this intermodality, and the spread of Sustainable Urban Transport Plans could help this process along.

Safety and security
Safety and security initiatives are high on the EU agenda. This theme deals with aspects like the level of danger that is socially acceptable, as well as the systems, rules and procedures for improving safety, such as facilities for children and elderly people.

As shown in Figure 12, some 34,500 people were killed on EU roads in 2009 – the lowest figure ever recorded. Preliminary data for 2010, however, suggests that the overall target of halving the number of road deaths in the EU by 2010 has not been met.

Figure 12 Evolution of the number of road deaths in the EU27 compared with the target of the 2001 White Paper (EC 2011b)



Source: CARE database, DG MOVE.

A survey of European car drivers found that they generally appear willing to make changes to reduce emissions. The majority of car users (66%) claim they would be ready to drive a smaller car in order to reduce emissions. More than half (62%) would accept shorter distances between refuelling/recharging. About the same percentage (60%) would also be willing to pay more for their car if this helped reduce emissions (EC 2011c).

Although these figures are promising, surveys suffer from the drawback of a social desirability bias that often causes respondents to proclaim opinions or intentions they consider more appropriate or acceptable but do not reflect actual behaviour. In general, shifts toward more efficient or different driving technologies may not be far-reaching enough. Instead, shifts to other modes of transport and actual reductions in transportation needs are required, that pose important challenges.

Challenges to more sustainable moving

The main question to be addressed is to determine how the mobility needs of Europeans can be met in a sustainable manner. This includes two main challenges: first the need to reduce the need for mobility, where possible and, second the need to switch to sustainable mobility options that fulfil people's needs within the limited capacity of our planet.

Challenges to sustainable mobility:

- Increasing mobility needs
- Higher incomes
- Cheaper air fares
- Perverse subsidies
- Car dependency
- Changing values

The most important challenge is to reduce the mobility needs of society. In this regard, current trends are unfavourable. Between 2000 and 2007 average per-capita mobility consumption in the EU increased by 7% in terms of passenger-kilometres travelled. The increase in freight transport demand outstripped the increase in GDP except in the economic crisis years of 2008 and 2009 (EC 2011b).

Passenger transport between 1990 and 2005 grew by fully 30%. A closer look reveals that the travel by road public transportation and by rail fell, while private car use increased by over one-third (36%) and air transport doubled (Radanne 2011).

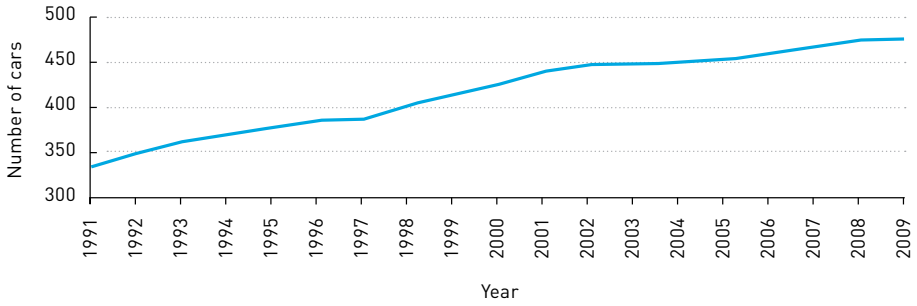
Table 5 Growth in traffic observed between 1990 and 2005

	1990	1995	2000	2005	Growth
Passenger transport in Gpkm	**4,784.5**	**5,221.8**	**5,819.7**	**6,245.4**	**+30%**
Public Transport road	555.6	498.3	514.0	529.0	-4.8%
Private cars and two wheeled motors	3,459.2	3,930.1	4,375.8	4,714.4	+36.3%
Rail	464.8	412.0	438.5	446.8	-3.9%
Air	247.9	325.9	442.0	506.3	+104.2%
Inland waterways	57.0	55.4	49.4	48.9	-14.2%
Distance covered per person in km	*10.171*	*10,959*	*12,112*	*12,769*	*+25.5%*
Transport of goods in Gtkm	**1,878.9**	**1,929.0**	**2,174.9**	**2,463.9**	**+31.1%**
Trucks	1,096.9	1,279.3	1,507.5	1,790.0	+63.2%
Rail	524.8	385.0	396.1	393.9	-24.9%
Inland waterways	257.2	264.7	271.3	280.1	+8.9%
Freight activity per unit of GDP in tlm per thousand €05	232.0	221.0	216.0	225.0	-3.0%

Source: Radanne, 2011.

It is difficult to convince people to reduce travel. Higher disposable incomes mean more people can afford a car (Figure 13), while cheaper flights make air travel affordable for almost everybody. Rising consumption of transportation leads to greater emissions, road congestion and serious environmental and health impacts.

Figure 13 Number of passenger cars per thousand inhabitants in the EU27



Source: EUROSTAT

Options to reduce dependence on private cars include construction of improved public transportation systems, making public transport more attractive and promoting alternatives, such as cycling or walking to work or school. Governments currently advocate the promotion of Sustainable Consumption and Production (SCP) policies in documents and speeches, for instance encouraging use of public transit, car-sharing, cycling and walking, while at the same time introducing perverse subsidies to stimulate unsustainable industries that employ large number of people, such as the automobile manufacturing industry.

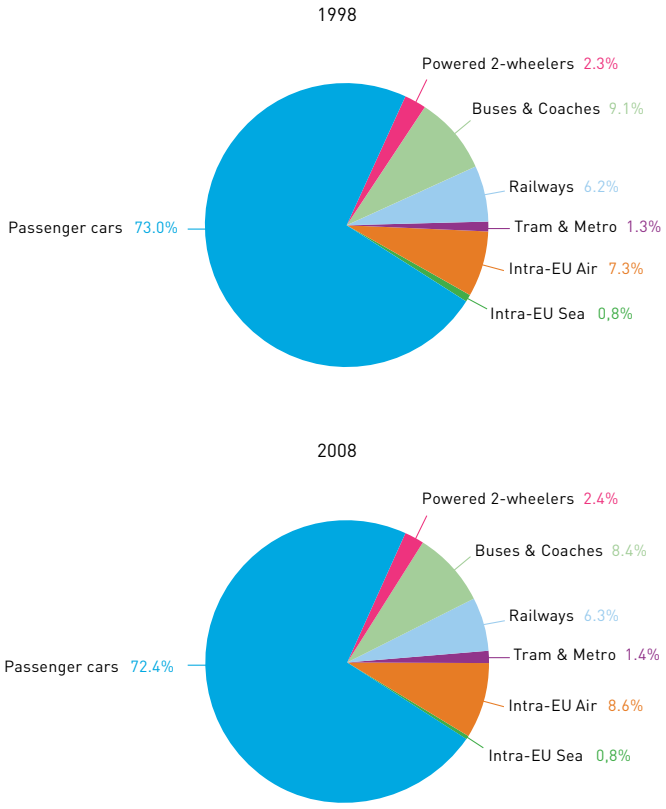
Financial and administrative tools play an important role in supporting shifts toward sustainable modes of transportation. One first step would be to correct

transportation prices – a challenge but also an opportunity. Transportation in Europe today is cheap for users but expensive for society, as prices do not reflect the true costs. There are, for example, inconsistent taxation rules between transport modes and fuels between and within Member States. These may even subsidise environmentally unsustainable choices, with favourable taxation rules for corporate cars that encourages the use of cars for business (EC 2011b).

A challenge that relates to transportation prices is price tariffs that do not distinguish among social groups, such as older people and students – which is a basic requirement for equity in mobility. Social inclusion has to be guaranteed: new services for elderly people or those with disabilities should be developed alongside green standards, such as allowing only low-emission cars to enter city centres or mandatory technical skills training and/or internet access to allow individual mobility planning.

As shown by Figure 14, the role of private cars has not changed in the past decade. Cars remain by far the most dominant mode of transport with a share of more than 72%. While the share of private car use fell by 1% over a ten year period, this tiny reduction occurred at the same time as a massive 37% increase in air travel. The increased use of cars has an additional and regional aspect: car use has been boosted by the integration of the 12 new EU Member States, even though the average number of passenger cars per thousand inhabitants in these countries is still only 70% of what is seen in the EU15 (EC 2011b).

Figure 14 Modal split in intra-EU27 passenger transport in 1998 and in 2008



Source: EC 2011b, Eurostat, DG MOVE.

These challenges cannot be overcome without a change in values of our society. This would mean, for example, an end to the perception of a car as a status symbol, and instead seeing the use of public transport as something desirable.

Education and awareness raising are critical to changing values.

> *"The debate started by the draft White Paper on transport should release processes which will gradually change buying behaviour, the choice of mode of transport, their use and driving practices of people and companies. The stakes are high: we are reversing the discourse which dominated the whole of the 20th Century on our relation with transport. The European transport policy must rest on a strong cultural dimension. We cannot reorient and optimise transport policy without investing in the power of people to change and in the democratic process and without deploying our efforts in educating, communicating and looking forwards." (Radanne 2011).*

Opportunities for more sustainable moving:
- 'Local holidays'
- Car sharing services
- Electric vehicles
- Attractive, community based alternatives to car use
- Innovative urban planning

Opportunities: emerging and promising practices

There are several opportunities that can promote sustainable mobility. The following are key opportunities identified by the SPREAD project Working Group on Moving.

PROMISING PRACTICES

Promising practice 16: Nopsa Travel agency

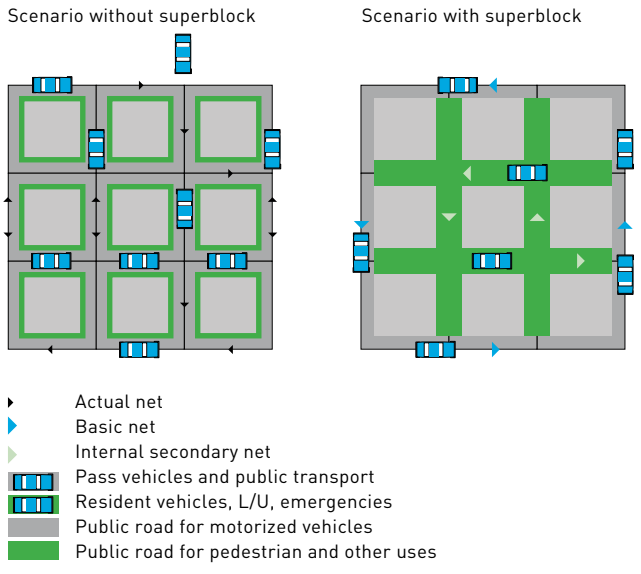
Nopsa Travels is a new kind of travel agency in Finland that promotes domestic travel and local luxury. The agency aims to create travelling routes built on things we see as luxuries in our everyday lives: good food, good company, and time for ourselves. The concept is based on the idea that travelling far does not make us happier but rather it is novel and delightful experiences we are seeking, and that low-carbon travel does not mean low-quality or boring travel.

Promising practice 17: Walking cities

Examples of education to promote sustainable mobility include measures to encourage children to get to school by themselves or walk with parents, grandparents and friends – enjoyably and safely – in a group known as a "walking bus". Similarly, Pedibus – an initiative based on pedestrian "bus stops' was born in Denmark and is now found in 40 countries worldwide.

Promising practice 18: Superblocks in Vitoria-Gasteiz

Superblocks are a functional model for the organisation of different modes of mobility, recovering the public space for citizens and limiting the massive use of private cars inside the city. The Sustainable Mobility and Urban Space Planning for Vitoria-Gasteiz is based on the design and implementation of 68 "Superblocks". The space inside the blocks is reserved for pedestrians and bicycles; the outer basic streets for private cars and public transport.



The reduction of mobility needs in urban areas is highly influenced by urban planning. As the Impact Assessment within the White Paper on the Roadmap to a Single European Transport Area concludes:

> *"Significant changes in urban mobility require comprehensive actions that bring together land-use planning, road use and parking, transport pricing, infrastructure development, public transport policy and much more. Achieving integrated and sustainable urban transport is an increasingly complex task which touches many stakeholders and interests." (EC 2011b)*

Collaborative/community based consumption is a meaningful opportunity to reduce mobility needs and car use. Car-sharing systems are becoming more and more popular while shared offices enable people to work closer to their homes. Video conferencing systems reduce the need for business travel. New options and ideas for holidays can also help reduce travel needs related to vacationing (Promising practice 16).

Reducing car dependency requires better facilities and alternatives (Promising practice 17). Examples of cities that aim to be car-free include Barcelona, Freiburg, Geneva and Vitoria-Gasteiz. These cities demonstrate that congestion charges, limiting parking places and pedestrian zones working in combination can create the conditions to significantly reduce car use (Promising practice 18).

Campaigns and initiatives to support cycling or taking the bus to school and work have shown that this is a viable and sustainable alternative for mobility from an environmental, economic and social point of view (Promising practice 19).

From an environmental standpoint "green technologies" and innovation, such as new types of fuels, more efficient vehicles and new modes of mobility can bring great opportunities but only if potential rebound effects are avoided. Electric vehicles, for example, could benefit the environment (depending on the source of electricity) and would reduce direct harmful environmental effects of exhaust gases. But one rebound effect could include increased congestion if electric vehicles result in more cars on roads. Technology, however, can also play an important role in helping to make public transportation or car sharing schemes more attractive (Promising practice 20).

PROMISING PRACTICES

Promising practice 19: "Happy Bus" project in Parma

This project, implemented by the local public transport company in collaboration with the municipality of Parma, is a service that collects young students from elementary and middle schools from the front of their homes and takes them to school. It is a high quality service, with 45 ecological methane powered buses. Some 1,250 children from 50 schools use the service daily.

Promising practice 20: Sarecar – Shared electric cars in Ataun

Ataun has become the first village in Europe to set in motion a public renting service for shared electric vehicles. This novel initiative, called Sarecar, has been in operation since January 2011. The main aim is to create a sustainable mobility model by replacing most of families' second cars with shared electric cars.

The Foral County of Gipuzkoa, Kutxa saving bank and the Basque Government financed the project together with the Spanish Energy company Iberdrola. The energy the cars consume comes from renewable energy sources.

More thought and discussion is needed around policy and legislation, including the optimal actors in society to lead and initiate the necessary changes. EU and national level legislation can provide the appropriate legal background, but promising emerging practices demonstrate that local level policy decisions are crucial.

Concluding remarks

This chapter has outlined current mobility trends, challenges and opportunities for the future based on the latest available European policy documents and literature in addition to inputs from the SPREAD launch conference participants (SPREAD consortium 2011).

The trends demonstrate the need for a shift in mobility patterns towards early decision-making and sustainability. For example, decisions about future investments in the European rail network and a sustainable energy supply for transportation need to be made today to ensure low energy use and reduced emissions.

The SPREAD project Working Group on Moving addressed issues that are also relevant for the Working Group on Living, including issues connected to urban planning and the macro-trend of ever-increasing business and leisure travel distances. To become truly sustainable it is paramount that our lifestyles are consistent with alternative means of business communication such as video and teleconferencing and with local options when it comes to travelling for pleasure and leisure.

HEALTH AND SOCIETY

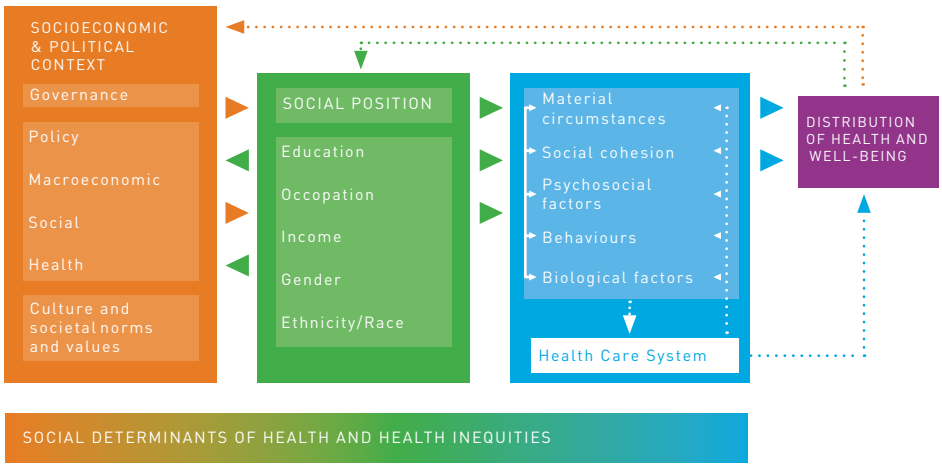
Health, well-being and equity underpin the concept of a sustainable society which should maximise opportunities for physical, social and mental health. A sustainable society should enable people of all ages and across all socio-economic groups to take an active part in society and enjoy an independent and good quality of life.

The SPREAD project Working Group on Health and society, led by EuroHealthNet, The Regional Environment Centre for Central and Eastern Europe (REC) and Ashoka, has asked how a sustainable society can be achieved, while ensuring that health, well-being and equity are addressed in relation to consumption (food), living (housing, neighbourhoods and green spaces) and moving (active travel). The Working Group explored knowledge and approaches to health promotion that link environmental and sustainable development issues.

Current situation: unsustainable health and society

The WHO Commission on Social Determinants of Health conceptual framework demonstrates that the conditions in which people are born, grow, live and age, and the social, political and economic conditions within our communities are determinants of our health and well-being (Figure 15).

Figure 15 Summary pathway and mechanism of social determinants of health inequalities



Source: Commission on the Social Determinants of Health (2007)

The differences in social, economic and environmental conditions create a social and health gradient, with poorer people having poorer health than more affluent people.

Health, food and eating habits

A healthy diet is one that maintains or improves health. Healthy diets with less animal and dairy products and more fish from sustainable sources, seasonal, field-grown and locally produced fruits and vegetables also have a lower impact on the environment. There is a clear social gradient in eating habits, with more affluent people being more likely to have healthier diets (UK Food Standards Agency 2007).

Our eating habits are influenced by, and influence, the food system. Our food choices are influenced by availability and price, attractiveness and marketing, and by personal, cultural and societal norms and values.

The way food is produced and consumed – combined with low levels of physical activity – has fuelled a global epidemic of chronic diseases, particularly in the developed world.

Obesity on a global basis has more than doubled since 1980 (WHO 2011). In Western Europe, the poorest are those most affected by obesity with 20-25% of low income men and 40-50% of low income women being obese (Robertson, Lobstein, Knai 2007).

Climate change will have an increasing impact on food yields, nutritional quality, food safety and affordability – an impact that will affect some groups disproportionately with the most socially disadvantaged, the oldest and the youngest being most vulnerable. People on low incomes will be able to purchase only the cheapest foods, which are often energy dense, highly processed products that increase the risk of obesity and diabetes. In the long term, and at the global level, fewer people will be able to afford even these cheap foods (Friel et al. 2008).

Emerging practices fostering more sustainable health and societies

- Policy makers and professionals are beginning to develop common approaches and interventions to support healthier and sustainable lifestyles.
- Health and equity are becoming understood as integral parts of all measures and initiatives relating to climate change and sustainability; this includes integrated, multi-sectoral approaches to health, agriculture, education, finance, urban planning, social affairs and welfare, trade and transport sectors.

Unsustainable patterns in health and society:

- Diet- and lifestyle-related health problems are increasing in EU societies.
- Higher income groups often lead to lifestyles that have a higher impact on the environment.
- Lower income groups are often more exposed and vulnerable to health risks, such as noise, traffic and an unhealthy diet, than higher income groups.

People's food choices are influenced by availability and price, attractiveness and commercial marketing, and also by personal, cultural and societal norms and values.

"It is very important to start to think now about health and how we can include health in everything we are doing for our lifestyles and improve our lifestyles for health and wellbeing. I think that if we don't take action now it might be too late for our children."
— **Cristina Chiotan,** *EuroHealthNet, SPREAD consortium partner*

Climate Change will disproportionately affect the socially disadvantaged, the oldest and the youngest.

Health and the built environment
Buildings play an important role in our society and have an impact on our health and well-being. For example, the exposure to particulate matter and chemicals, combustion by-products, and to damp or mould is associated with asthma and allergies, lung cancer, and other respiratory and cardiovascular diseases (EnVie 2009; WHO 2009).

Older properties may have poor insulation, high energy consumption and are often occupied by people with low incomes. Such properties can be expensive and inefficient to heat, placing an additional burden on disadvantaged people leading to a condition known as "fuel poverty". This can lead to a stark choice: eat or heat (UK SDC 2010).

Socially disadvantaged groups are more likely to live in deprived neighbourhoods and are more vulnerable to health risks than other groups (Pye et al. 2008). Children are particularly affected by asthma, allergies and some types of cancer related to environmental pressures (EEA 2010d).

Active travel has direct and indirect health benefits.

Health and active travel
Active travel refers to the use of physical activity, like cycling or walking. It can bring about immediate health benefits for individuals by, primarily, increasing their levels of physical activity. It also reduces road traffic, noise and greenhouse gas (GHG) emissions, and improves general air quality – all associated health benefits.

We are, at present, over-dependent on motorised transport, partially due to land use practices that isolate housing from the workplace, shops and services

resulting in urban sprawl (Sanchez, Duhl 1999). This contributes to lower levels of physical activity, with a direct knock-on effect upon our physical and mental health and well-being.

Different types of transportation have different impacts on different socio-economic groups. Poorer families, for example, tend to have lower mobility and a lower environmental impacts as a result of their lower use of private cars. Those living in urban areas – and particularly their children – are more exposed to adverse environmental conditions caused by road transport, such as traffic injuries and outdoor air pollution. They are also more vulnerable to the adverse effects of traffic because they bear greater burdens of pre-existing illness or other forms of vulnerability, like poverty, unemployment and unhealthy lifestyles (UK SDC 2010).

Per capita environmental impacts are considerably higher for high income groups than lower income groups.

Trends towards more sustainable health and society

Recent decades have seen an increasing incidence of, and mortality caused by, non-communicable diseases. The acknowledgment of the importance of diet and physical activity in combating such diseases has generated many health promotion initiatives and government policy to support more healthy and sustainable lifestyles.

Health promotion has moved beyond individual behaviour and now addresses underlying determinants.

Common goals and co-benefits have been identified between health promotion and sustainable development that require further exploration. Health promotion enables people to increase control over their own health and today has moved beyond a focus on individual behaviour towards a range of social and environmental interventions that address the determinants that underpin our lifestyles.

Challenges to sustainable health and society

Challenges for more healthy and sustainable eating habits

Industrial agriculture uses intensive production methods that require large quantities of non-renewable fossil fuel, fossil fuel-based fertilisers and pesticides. This has a direct impact on the environment and increases health risks through GHG emissions in addition to indirect impacts of food production, distribution, consumption and recycling.

Marketing campaigns for highly processed food products, together with their increased availability and low price encourage people to choose unhealthy and unsustainable products. Other challenges to a more healthy diet relate to awareness and knowledge, personal habits and attitudes, and cultural, geographic and social norms and values.

Challenges to a healthier and more sustainable society:

- Unsustainable industrial agriculture
- Marketing campaigns, increasing availability and low prices for highly processed, unhealthy food
- Poorly insulated, energy inefficient homes and related health problems
- Effects of the economic crisis on public budgets for health promotion and infrastructure investments
- Current "silo approaches" to policy making

In most countries, low income households spend a higher proportion of their income on food than their more affluent counterparts. Poor households are impacted most by food price fluctuations. A UK study found that 5% of people on low incomes report skipping meals for a whole day (FSA 2007). A tight budget is a barrier to changing or experimenting with a healthier diet (UK SDC 2010).

One key challenge, therefore, is to ensure that healthy and sustainable food is accessible to all socio-economic groups. There is also a need to consider global trends and developments, such as the growing demand for meat and dairy products in some countries. Moreover, there is a need to identify the health and sustainability benefits and disadvantages of local versus global food production and supply systems.

Poor neighbourhoods require special attention and assistance to provide healthy and sustainable living conditions.

Challenges to more healthy and sustainable living conditions
Research has shown that the health impact of housing differs across different age and socio-economic groups. The availability and accessibility of construction materials, including furnishings and electrical appliances, building maintenance (for example energy saving measures), and cleaning and household products are important determinants for health, well-being and equity (EEA, 2010d). The global economic crisis and increasing fuel prices, coupled with the high cost of insulation materials and renovation, exacerbate problems for people living in poorly insulated and energy-inefficient homes which serves to intensify fuel poverty and related poor health (UK SDC 2010).

Changes towards a healthier and more sustainable society require concrete action and investment in poor neighbourhoods with special attention to the needs of children and the elderly. Present limitations or "lock-ins" in society's systems and mechanisms are interfering with necessary changes. In addition, the current economic crisis is placing intense pressure on local administrations and public budgets which further complicates investments and infrastructure changes.

Challenges to healthier and more sustainable modes of travel
Urban sprawl and the resulting limitations to accessibility and neighbourhood safety are negatively influencing the travel choices of people (IPH 2011). As most policy areas work in isolation, one of the most important challenges is to develop an integrated, cross-sectoral approach that addresses complex factors like infrastructure, cultural and personal preferences, information communication, addressability and accessibility for all socio -economic groups.

Opportunities for a healthier and more sustainable society:
- Better information, through labelling, and information campaigns for a healthy diet
- Local production and consumption of healthy, seasonal food
- Financial support for building renovations, in particular targeting older or disadvantaged people
- Urban planning from an integrated health perspective
- Better availability and safety of walking and cycling paths

Opportunities: emerging and promising practices

Opportunities for more healthy and sustainable eating habits
Policy action to address food prices and availability can be combined with cultural and societal changes to stimulate healthier and sustainable food consumption patterns (Promising practice 21).

Food labelling could provide adequate and complete information from a health and sustainability perspective. It is important that these labels are easy to read and understand for people with different levels of health literacy and knowledge.

EU legislation plays an important role in food product labelling, which is critical to enable consumers to make informed choices. EU legislation in this area aims

PROMISING PRACTICES

Promising practice 21: Healthy lifestyles website

In France, the government and the Institut National de prevention et d'education pour la santé (INPES) have developed a website to provide information on how to adopt a healthier lifestyle. Information is designed to reach a number of target groups (e.g. infants, children, adolescents, pregnant women and elderly people) in a friendly, easy to understand way.
www.mangerbouger.fr

Promising practice 22: School Fruit Scheme

The School Fruit Scheme is an EU-wide programme to encourage good eating habits in young people. As well as providing fruit and vegetables, the scheme requires participating Member States to set up other measures including educational initiatives (such as farm visits, gardening sessions, etc.).

to respond to consumer needs, as "today they express a particularly strong expectation for complete and precise information on foodstuffs" (EC on "food and feed safety").

The health sector has taken important steps to support healthy eating through health promotion programmes and policies, often at national and regional levels to support changes in dietary habits and encourage physical activity. Some programmes benefit directly from EU support through specific EU policies or EU-funded projects and programmes, such as the School Fruit Scheme (Promising practice 22). In addition, the EU platform for action on diet, physical activity and health brings together stakeholders from industry, the research and policy communities, and provides a forum for actors at the European level wishing to contain and reverse obesity trends.

Niche initiatives are being developed and implemented as actors and sectors acknowledge the importance of healthy food and habits (Promising practice 23).

Opportunities for more healthy and sustainable living conditions
Improved standards and new building design and materials technologies developed in recent years are contributing to better health by addressing air quality, space heating and inadequate lighting, for example. New materials and technological innovations arising out of climate change mitigation strategies (e.g. thermal envelope improvements) have immediate co-benefits for health and the environment. Some countries and regions in Europe have developed programmes that ensure support for older or disadvantaged people to renovate or move into newer homes (Promising practice 24 and 25).

Numerous studies have demonstrated the benefits of neighbourhood green spaces (De Vries, Verheij, Grenewegen 2003). Green space, meanwhile, stimu-

Promising practice 23: Community Food Co-op

The Community Food Co-operative Programme in Wales provides quality, affordable fruit and vegetables to communities through sustainable local food distribution networks. The aim is to increase consumption of fruit and vegetables and to create supply chain efficiencies while reducing the environmental impact of food production and support local producers.

Promising practice 24: Improving energy efficiency and addressing fuel poverty in the UK

The Warm Front Programme in the UK works primarily as a grant scheme, providing funding of up to €6,000 to improve heating systems and insulation in private homes. Its purpose is to help fuel-poor households save on their fuel bills by improving energy efficiency. Since 2000, 1.1 million households have received assistance under the Warm Front Programme. CO_2 emissions in the average household were reduced from 6.97 tonnes to 6.16 tonnes per year.

Promising practice 25: Sustainable social housing

The Quality housing strategy was developed in 2009 by the Welsh Assembly Government. The goal was to provide coherent direction for housing policy in Wales. The strategy ensures that social housing continues to provide high quality, affordable homes that meet the needs of people with low incomes.
Over the last 20 years, housing units deemed "unfit" in Wales has fallen from some 20% of total housing stock total to around 4%.
http://wales.gov.uk/topics/housingandcommunity/housing/?lang=en

lates social contact and social integration particularly in underprivileged neighbourhoods and is linked to higher levels of physical activity and lower levels of obesity (Ellaway, Macintyre, Xavier, 2005). A recent study suggests that income-related inequality in health would be less pronounced in poor populations with greater exposure to green space (Mitchell, Popham 2008).

From an environmental perspective, urban green spaces and vegetation have a positive impact on air quality by removing air pollution and improving air quality. Green spaces play an important role in the natural cooling process which is becoming ever more important as a factor to mitigate climate change (WHO 2011).

EU legislation and policies on pollution include the 6th Environment Action Programme, the EU Environment and Health Strategy and the pan–European WHO environment and Health process. The areas for action identified include air and noise pollution, water protection, chemicals including harmful substances such as pesticides and improving the quality of life, especially in urban areas. It is worth noting that most policies are targeted at the outdoor environment. Increasing attention needs to be given to the indoor environment, with European citizens now spending up to 90% of their time indoors.

Numerous initiatives by public health and health promotion professionals at the national and regional level aim to support improved housing conditions and healthy neighbourhoods, often with a special focus on disadvantaged communities. However, these niche initiatives are insufficient in the face of growing inequities in living conditions between neighbourhoods and in housing conditions between and within Member States. There are still people in the EU who do not have access to running water, adequate washing and toilet facilities, affordable energy, appropriate housing, new clothing or a safe environment, conditions that have a direct impact on health and well-being (Eurofound 2008).

PROMISING PRACTICES

Promising practice 26:
Mobility-information Centre, Stuttgart

Friendly, personal information about all the means of public transport as well as route planning for cars, bicycles and pedestrians - these are the main competences of the Stuttgart Mobility Information Centre. All information is provided personally either on-site, by telephone, fax, mail or email in German, English, French and Dutch. One main aim is to make mobility in Stuttgart as environmentally-friendly and efficient as possible.

Promising practice 27: URBAN HEART - Urban Health Equity Assessment and Response Tool (WHO 2010)

Only a few countries have examined their inter- or intra-city health inequities, and even fewer do so regularly. Information that illustrates the gaps between or within cities is a crucial requirement to trigger appropriate local action to promote health equity.

WHO collaborated with 17 cities from 10 countries in 2008–2009 to develop and pilot an Urban Health Equity Assessment and Response Tool (Urban HEART). Urban HEART guides local policy makers and communities through a standardised procedure to gather relevant evidence and assists with efficient planning for appropriate actions to tackle identified health inequities.

http://www.who.or.jp/urbanheartj/index_files/Urban-HEART_GUIDE.pdf

Opportunities for healthier and sustainable modes of travel
Social attitudes and trends have an important influence on active travel, while the availability and safety of walking paths and cycle ways increases the likelihood of people walking or cycling to their destination – although it may require additional support for some social groups.

Collaborations between health promotion, and transport and urban planning have resulted in strategies and policy plans for sustainable development that supports health, well-being and equity. For example, various projects have been initiated by local administrations and city councils to provide information and improve people's awareness and knowledge on environmental friendly mobility (Promising practice 26).

There are important opportunities for integrated and cross-sectoral approaches and collaboration between health promotion and the transport sector using existing experience and information. An example is the application of health impact assessment tools on transportation policies combined with investments in transport and urban infrastructure, health information campaigns and the promotion of active travel (Promising practice 27).

Concluding remarks

The SPREAD Working Group on Health and Society stresses the importance of health and equity as cross-cutting themes, relevant for changes towards more sustainable ways of consuming, living and moving. Clear and obvious social and health co-benefits can be found in many of the promising practices collected by all Working Groups. Examples include physical exercise gained when travelling by bicycle, the diet benefits from eating fresh fruit and vegetables, possibly even home-grown in a community garden, or the time and fuel spared when being able to live, work and shop in a small geographic area.

At the same time, the challenges outlined in this section indicate a number of limitations and trade-offs inherent in promoting sustainable lifestyles. What works for one person may not work for another because of their different life circumstances, income or skills. In addition, political and urban planning decisions on the use of public spaces, including whether for walking paths, cycling lanes, green spaces or public transport networks, require an acceptance of relevant trade-offs.

One important conclusion of the Health and Society Working Group is, therefore, the importance of holistic approaches to urban planning, policy design, transportation networks, social equity and education, among other things. Initiatives that consider environmental, economic and social sustainability as well as health and well-being across a broad cross section of stakeholders and sectors have the greatest potential for success.

However, much current policy making and program design lacks appropriate knowledge, monitoring and evaluation mechanisms as well as the crucial connections across stakeholder groups that would allow better integrated, multi-sector and multi-stakeholder approaches.

EMERGING THEMES FOR SUSTAINABLE LIFESTYLES

Important themes in shifts towards more sustainable lifestyles:

- Efficiency
- Sufficiency
- Making it easy
- Holistic solutions
- From owning to sharing
- Short term vs. long term thinking

This section draws together six emerging themes cross-cutting the lifestyle areas of living, moving, consuming and health and society that play a role in the transition toward more sustainable ways of living.

Importance of efficiency
The environmental impact of most technologies and products – such as clothing, cars and buildings, varies across their lifecycle with the highest impact found after they are purchased. While resources are required to produce or construct these items, far more resources are consumed for use and maintenance. About 20% of environmental impacts are related to production and transport while about 80% relates to "life" of the produce from purchase to disposal ("use phase") (CSCP and UNEP DTIE 2007).

Two different mechanisms play a role in reducing the environmental impact of these two phases: from production to purchase, and from purchase to disposal. Norms, standards, labels, the mandatory internalisation of externalised costs and better use of economic instruments to steer consumption choices are mentioned as ways to reduce overall resource consumption.

However, the solutions proposed to reduce resource consumption during the use phase all relate to individual behaviour in particular consumption niches, such as using less detergent, switching off stand-by power, or travelling by bike rather than by car.

Importance of making sustainable lifestyles easy
ICT-based technological solutions can make behaviour changes possible or easier. These include "technological fixes" that allow smart and real-time matching of supply and demand, such as the sharing of devices, swapping of items, planning multi-modal travels or feedback on electricity consumption.

Sustainable choices and behaviours also become easier through better availability and accessibility of sustainable options that are not necessarily relying on technological solutions, but rather social or entrepreneurial innovation. These include initiatives for local food production and consumption, energy consumption related education, information and support programmes and walking or cycling initiatives.

Importance of holistic solutions
One key element of sustainable lifestyle solutions are holistic solutions. Examples include integrated life cycle approaches for low-carbon or low-impact food and products and integrated approaches to urban planning. Holistic solutions involve actors at all levels across all lifestyle areas to overcome "lock-ins" in existing technology, infrastructure, institutions and systems. Holistic solutions also recognise health, well-being and social equity as cross-cutting themes – ensuring that they are addressed in sustainable lifestyle solutions.

Importance of access vs. ownership
Another key element for sustainable lifestyle solutions is the shift from societies focused on consumption or ownership to societies based on values and services. This implies a shift from owning to sharing and from consuming to (joint) experiencing. The main argument for this shift is a reduction in resource consumption.

Importance of sufficiency
Ideally, changes towards more sustainable lifestyles are not undermined by unwanted compromises on the one hand, or sacrificing comfort and well-being on the other. Shifts toward sustainable lifestyles can create opportunity spaces for "just enough" approaches to possessions, travel and consumption and thereby leave more space and time for relationships with friends and family.

Importance of long term well-being vs. immediate gratification
Shifts towards more sustainable lifestyles create opportunities for a change from short-term to long-term perspectives at all levels, from the individual to the mainstream to the global; and by all actors including policy makers, entrepreneurs and citizens. At an individual level, it involves a value shift from individualistic immediate gratification to a long-term focus on one's own and community well-being.

SPREADING SUSTAINABLE LIFESTYLES

In reviewing the current trends in lifestyle patterns and impacts, three areas emerge as important elements for SPREADing promising practice and innovation:

- **A deeper understanding of people, their behaviour and motivations to change,**
- **Diverse and tailored options for more sustainable ways of living,**
- **Supporting innovation, infrastructure and enabling environments for resilient lifestyle change.**

UNDERSTANDING PEOPLE, THEIR BEHAVIOUR AND MOTIVATIONS TO CHANGE

People will not change behaviour or lifestyles homogeneously.

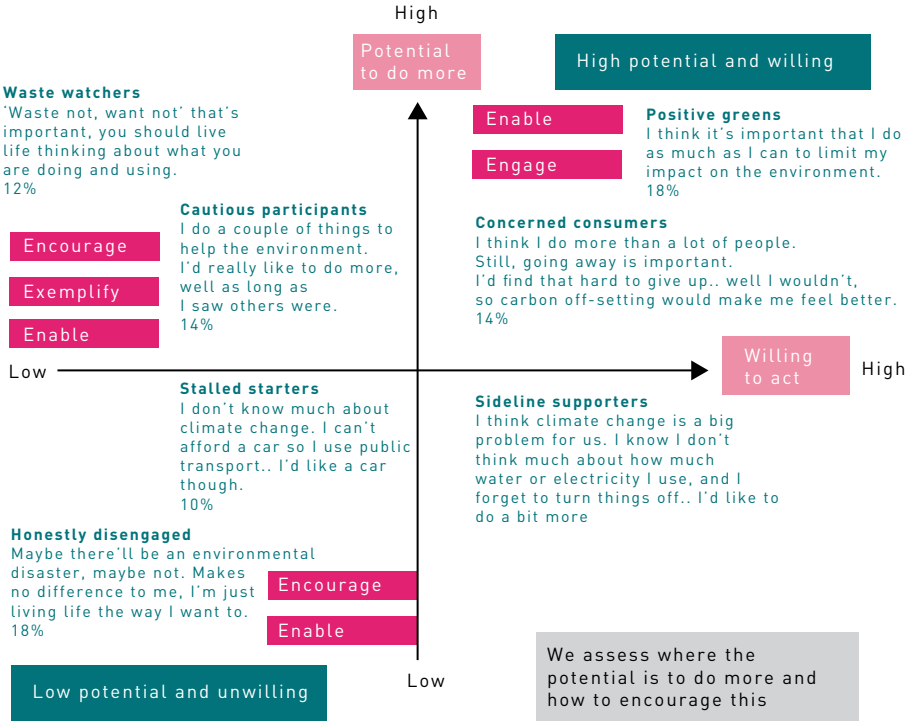
The seven billion individuals living on this planet will not change their behaviour or lifestyles in a homogeneous manner. Each individual has different needs and desires, different interests, knowledge and education, represents a different social class and comes from a different geographical area and cultural background – all of this having implications for patterns and levels of individual consumption (Mont 2009). In addition, people have different reasons and motivations to change behaviour (PIRC 2011; WBCSD 2010). Therefore, it is important to identify pathways toward sustainable lifestyles that are geared, adjusted to and address individual needs, concerns and interests.

This information can help develop different options to promote more sustainable lifestyles (Hicks and Hovenden 2011). For example, a high-income consumer might prefer to buy expensive clothes that are socially and environmentally sound, while a low-income consumer may prefer to access clothes through a swapping network. Both would contribute to more sustainable lifestyles in ways that suit their needs.

There cannot be a "one-size-fits-all" approach to sustainable lifestyles.

The insight that there cannot be a "one-size-fits-all" approach to sustainable lifestyles is the conclusion of many studies employing segmentation methods. Segmentation models seek to provide a deeper understanding of the needs, desires and motivators of different consumer or household segments. These models aim to provide insights into how diverse sustainable living options for different segments can be enabled (Figure 16).

Figure 16 Defra's evidence based public segmentation model



Source: Defra, Sustainable Lifestyles Framework, 2011

Sustainable lifestyle options need to be tailored to different behaviours in different lifestyle domains.

Studies employing segmentation models have found that consumer or household segments are often not consistent across different categories of products, services or activities (Crompton and Thøgersen 2009). The same is true for values that shape and frame our choices and behaviours (PIRC 2011). For example, people with the strongest "green" preferences for food and the best recycling performance might be the heaviest users of private cars and the most frequent flyers. This implies that sustainable lifestyle options, as well as policy programmes, technologies and business models aimed at implementing these, need to be tailored to different behaviours in different lifestyle domains.

Creating sustainable lifestyle options that are fun, desirable and easy for all requires a better understanding of people's needs and desires.

Understanding how people think and behave and what motivates and hinders the shift toward sustainable lifestyles can help policy makers, community leaders and designers to develop solutions that resonate with consumers that are fun, desirable and easy for all. This means changing current trends and conditions that foster unsustainable behaviours to enable more sustainable lifestyles across the breadth of population segments.

DIVERSE AND TAILORED OPTIONS FOR MORE SUSTAINABLE WAYS OF LIVING

Successful sustainable lifestyle initiatives need to be tailored toward:

- Behaviours
- People
- Context

The natural question that follows from the conclusions above is how fun and desirable sustainable lifestyle options for different people can be fostered. One solution is to begin at the local or individual level of households, neighbourhoods, communities, and schools. Change can be initiated by individuals, neighbourhoods or schools themselves. Change can also be induced externally, for example by social entrepreneurs, an NGO, a local business or municipality.

"Efficiency needs and technological solutions are at the centre of the sustainability agenda. Going forward we must put just as much emphasis on people – a deeper understanding of who we are, what we need, desire and what we really do. Only people can activate the solutions that will enable sustainable development."
— **Cheryl Hicks**, *CSCP, SPREAD project partner*

"Enabling sustainable lifestyles must consider how we define and value success, well-being as well as quality of life. We do not need more end-of-pipe solutions, we need to unlearn unsustainable habits and mindsets to transition to different ways of living, doing and being."
— **Kerstin Ochs**, *(Dipl.-Kfm. - Head Laundry & Homecare, International Governmental Relations & Public Affairs), HENKEL, SPREAD project advisor*

"Motivating people starts from the heart. Understanding what people feel and desire will help us to provide options that deliver what is desired more sustainably."
— **Per Stoltz**, *Deputy sustainability manager, IKEA Sweden, SPREAD project advisor*

There is only a very limited availability of robust and concrete evidence on the contribution of local or grassroots initiatives toward sustainable lifestyles. The next chapters focus on three important success factors for SPREADing local or small-scale sustainable lifestyle solutions that need to be tailored to:

- **The behaviours they aim to influence**
- **The people they aim to address or involve**
- **The context within which they are part**

Tailoring sustainable lifestyle solutions to different behaviours

Changing behaviour means changing our conscious, deliberate behaviour – such as deciding to purchase a new refrigerator or car – and our everyday, habitual behaviours – such as how we get to work or clean our home (Breukers et al. 2009; House of Lords 2011).

Changing these different types of behaviours is a challenge and calls for different approaches.[8] The first type of behaviour is more related to the information we get at the point of purchase and can be influenced by choice-editing, for example through the provision of targeted information such as eco-labels. The second behaviour requires more frequent reminders and encouragement to help people "unlearn" old habits and establish new sustainable habits.

Tailoring sustainable lifestyle solutions to different people

It is important that information and communication is tailored to the needs, desires and concerns of different consumers. Messages need to be both meaningful and motivating for different people and they need to be addressed in the many roles that influence consumption, from individual to partner, from parent to worker, and from friend to citizen.

Research shows that it should not be assumed that messages focusing on monetary benefits alone are the most motivating to most people (PIRC 2011). In addition, instead of the doom-laden "we are on a runaway train" vision, messages need to motivate and engage – the classic example being the "yes, we can" slogan heard in the 2008 US presidential campaign.

The focus of product innovation should be to develop goods and services that satisfy a number of needs at the same time while minimising waste and impacts on the environment without compromising performance quality (WBCSD 2010). Adding knowledge of sustainability to an understanding of different types of people creates new opportunities to drive product and process innovation forward and advance models of sustainable lifestyles (Hicks and Hovenden 2011).

Not only do products, services, communications and information that promote sustainable ways of living need to be tailored, but also every other aspect of sustainable lifestyle initiatives, such as financial arrangements or other – maybe more practical – supporting measures. As mentioned above, successful sustainable lifestyle solutions need to meet the concerns, needs, desires and interests of different types of people.

8 See www.energychange.info for more insight into mechanisms enabling change toward sustainable living as well as practical tools for organisations involved in preparing and implementing energy demand-side management projects.

Tailoring sustainable lifestyle solutions to different contexts

Combinations of sustainable lifestyle solutions need to be developed to fit the local context.

Initiatives that promote sustainable lifestyles are not implemented in a void but are highly dependent on context, which differs from one project to the next. Each initiative involves a variety of actors with different motives and expectations, such as practitioners, policy makers, funding bodies and the target group the initiative aims to reach. Consequently, rather than creating universal recipes for success, combinations of solutions and approaches need to be created to fit the context of each initiative (Breukers et al. 2009).

Successful initiatives often begin with highly motivated and knowledgeable individuals whose most important task is to understand and negotiate the needs, expectations, interests and goals of all involved or affected stakeholders. Negotiation towards shared goals and expectations may include conflicts, but increase chances for smooth implementation.

The more closely the proposed sustainable lifestyle fits the everyday life and environment of the target audience that the initiative hopes to influence the greater the chances for long term behaviour change. New behaviours become embedded in people's lives and environment by linking desired changes to emerging positive trends that are already underway.

Apart from tailoring sustainable lifestyle options to different contexts, contexts can also be adapted to enable and support more sustainable ways of living (Breukers et al. 2009). This discussion will be taken up in the next chapter.

INNOVATION, INFRASTRUCTURE AND ENABLING ENVIRONMENTS FOR RESILIENT LIFESTYLE CHANGE

Behaviour change is entwined with and influenced by the context that shapes individual choices, including collective systems of provision. Equally, our everyday practices sustain or reshape these systems in the long run (Otnes 1988; Shove 2003; Wilhite et al. 2000). Therefore, resilient change toward sustainable lifestyles requires supporting environments that enable and support long-lasting behaviour change. This can be achieved through:

- **Technologies that support sustainable lifestyles**
- **Networks that support resilient change**
- **Design and visualisation tools that demonstrate, communicate and connect sustainable lifestyle solutions**
- **"Nudging" towards sustainable lifestyles**
- **Sustainable cities and people-centred community planning**
- **Social entrepreneurs creating sustainable lifestyle and business models**
- **Interdisciplinary and practice-oriented research**
- **NGO and CSO action for more sustainable lifestyles**

Technology to connect people and information

Technology can connect people, information and things to support more sustainable practices.

Lessons from the rise of collaborative consumption and the sharing economy (Botsman and Collins 2010) emphasise the importance of technology that connects individuals to information, other people and physical things in ever-more efficient and intelligent ways. This is changing how we consume, socialise, move – ultimately how we live and function together as a society.

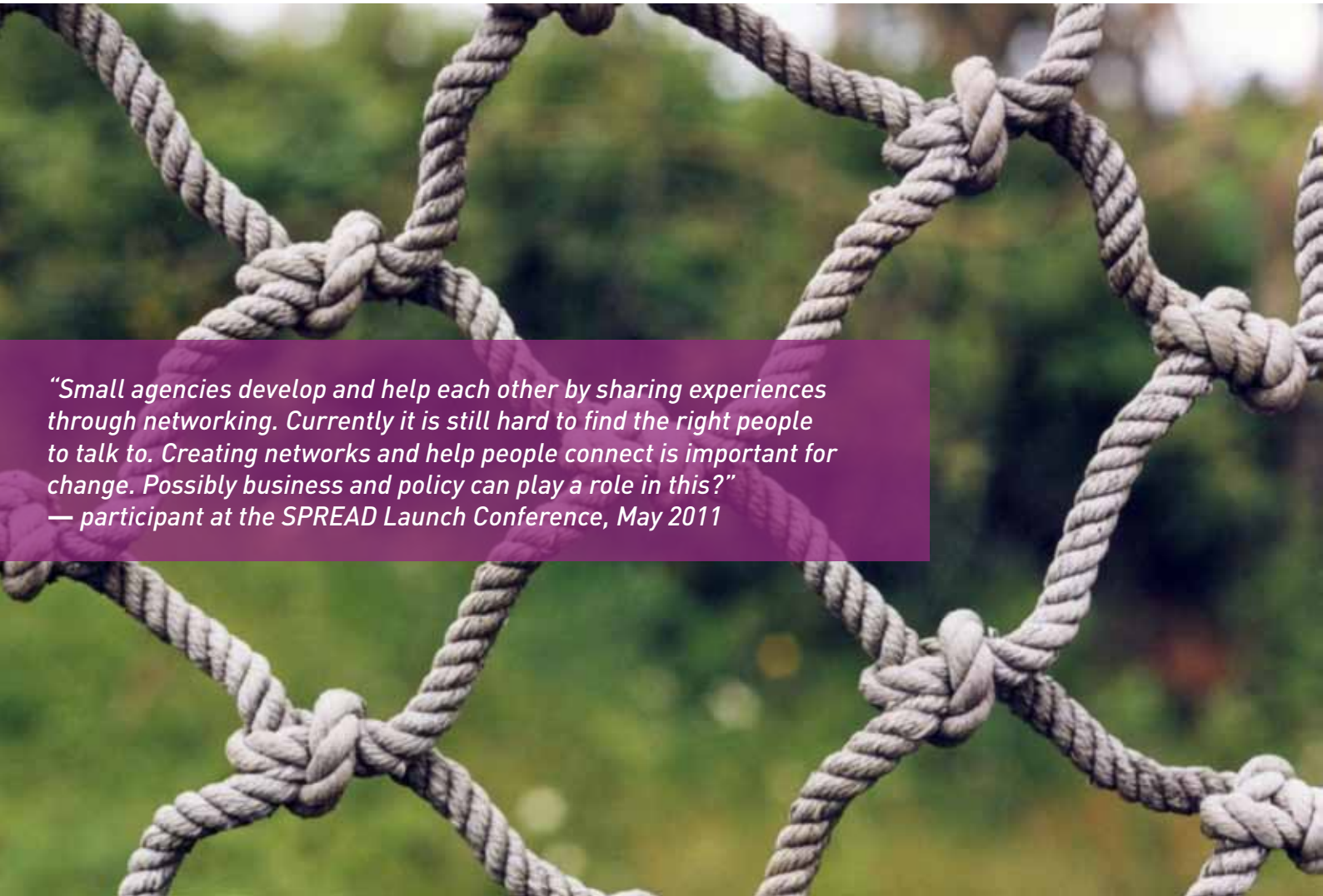
At the community level, technology can aid the proliferation of social networks and can increase our comfort about interacting online with friends and strangers. At the environmental level, the increased awareness of global environmental issues such as climate change induced by technology has helped people to make the connection between sharing and sustainability. There is growing awareness that "sharing is better for the environment" as we reuse and repurpose goods rather than accumulate ever more new stuff. At the technological level, further proliferation of web and mobile technologies will continue to play a critical role in building large-scale sharing communities of the future.

Networks to support resilient change

Networks make change more resilient by supporting changes of existing structures and institutions.

When initiating change, the best results often come from groups of people working together – we learn most from those around us, and it is important that we see that others are changing too (Breukers et al. 2009; Heiskanen and Schönherr 2009). This makes it vital to build on existing networks or create new networks and social structures that support new behaviours and to make the changed state the permanent "norm". Networks can reinforce change, and make change more resilient by supporting the evolution of existing structures and institutions. But networks can also be predisposing and enabling by, for example, providing resources and offering skills.

These networks can also "carry" new practices by functioning as "self-help" networks were diverse knowledge, experience and competences can be exchanged. In addition, exchanging knowledge and learning between networks helps create stronger momentum for large-scale changes.



"Small agencies develop and help each other by sharing experiences through networking. Currently it is still hard to find the right people to talk to. Creating networks and help people connect is important for change. Possibly business and policy can play a role in this?"
— participant at the SPREAD Launch Conference, May 2011

Design and visualisation tools to demonstrate, communicate and connect sustainable lifestyle solutions

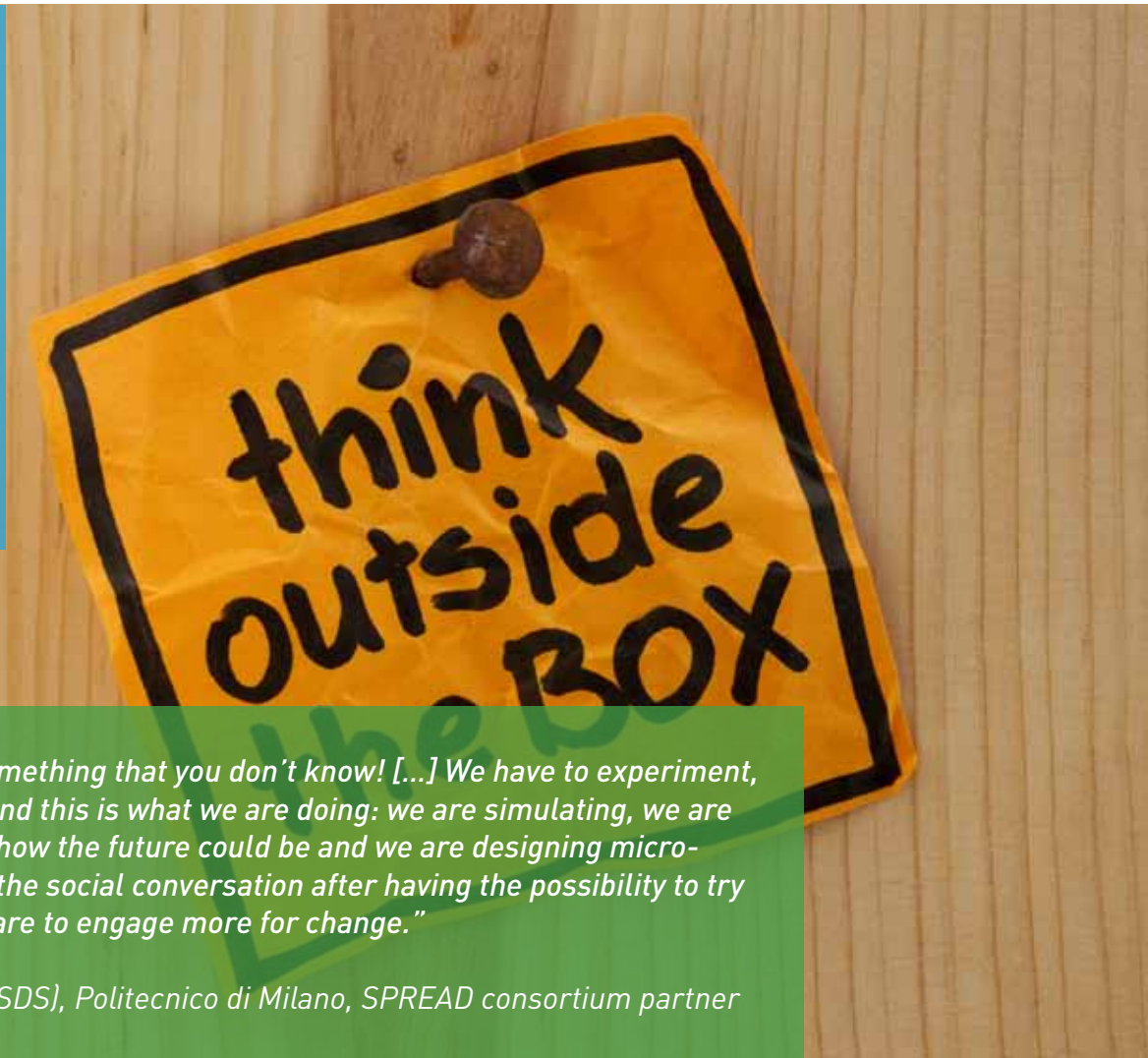
The Design for Social Innovation and Sustainability (DESIS) initiative is a global network of design schools and universities that brings together the concepts of social innovation, sustainable lifestyles and upscaling. The DESIS Network supports local stand-alone projects and tries to create linkages between these projects to create systemic change. The support process consists of several linked activities:

- Investigation activities to map local abilities
- Facilitation activities that use participative design tools to engage consumers and the public
- Envisioning activities that use scenarios to demonstrate how the future could look
- Systemising activities to find synergies between different local projects
- Enabling activities that create toolkits and platforms
- Communication activities that foster attractive and clear dissemination.

An example from France is a project in the Pas-de-Calais region that is working in a commuter town to create a more sustainable daily lifestyle for resident commuters. The project aims to prevent the destruction of agricultural land, reduce heavy traffic and the disappearance of local shops, overcome difficulties in the local social mix and ensure a balance between generations. Design and visualisation tools helped to engage local stakeholders through "video brainstorming" and the simulation of 30 sustainable services to create a "demonstrator" of sustainable and quality living in urban peripheries.

Scenario visualisation
Scenario visualisation refers to techniques that present in the most explicit way (i.e. through story-boards, photo-stories, short video clips etc.) how daily life could look to both enable and engage stakeholder projection and dialogue over alternative futures.

"We need fresh visionary thinking on new sustainable living models that break current barriers. We need the thought leadership that can accelerate social innovation before 2020."
— Kirsi Sormunen,
Vice President, Sustainability, Nokia, SPREAD project advisor



"Try! Try something else, something that you don't know! [...] We have to experiment, we have to try alternatives and this is what we are doing: we are simulating, we are showing, we are visualising how the future could be and we are designing micro-experimentations to enable the social conversation after having the possibility to try alternatives and maybe to dare to engage more for change."
— François Jégou,
Strategic Design Scenarios (SDS), Politecnico di Milano, SPREAD consortium partner

The Sustainable Everyday Project[9] (SEP) is an independent network of several public research projects, some supported by the European Commission. The SEP project promotes a scenarios laboratory where new visions of sustainable everyday life are proposed and discussed. It also collects promising examples of social innovation, hosts a travelling exhibition, and supports research activities and workshops.

These projects and many others demonstrate the seductive potential of design through micro-projects that enhance the appeal of sustainable lifestyles to make the transition a clear win-win. The exact path towards sustainable lifestyles cannot be known but it is known that transformation processes involve knowledge, networking and experimenting (Cipolla and Peruccio 2008).

"Nudging" towards more sustainable lifestyles

In their 2008 book "Nudge", Thaler and Sunstein point out that by learning about how people think, we can make it easier for people to make more sustainable choices. Thoughtful architecture that influences choice can "nudge" consumers in the right direction without restricting their freedom of choice.

"Feeding Milan", is an example of a project that creates sustainable choices with the aim of "nudging" people toward sustainable lifestyles. The initiative brings local food produce from the regions surrounding Milan to the urban centre and makes high quality, fresh, organic products available through a short supply chain. The resulting environmental benefits are achieved not only through reduced transport and distribution but also by promoting the use of natural fertilisers, minimising the use of pesticides and using renewable energy wherever possible. In addition, urban residents have been introduced to the riches of their local environment through initiatives such as "the food box", the local farmer's market, the local bread chain and local tourism.

Consumers often make decisions when they are distracted, or choose options that require the least effort. This implies that if there is a default option – an option that will be obtained by doing nothing – then many people end up selecting that option. Changing default options to reduce the impact of consumption or improve health can be a powerful way to make sustainability the easier choice (Thaler and Sunstein 2008).

In other words, nudging changes the way options are presented to people by making deliberate changes in social and physical environments that result in behaviour change (House of Lords 2011). Table 4 illustrates a range of administrative, economic and informative policy instruments presented from the perspective of guiding public choice.

9 www.sustainable-everyday.net

Table 6 Policy interventions that guide, rather than restrict, individual choice

Examples of policy interventions	Intervention category	Regulation of the individual		Fiscal measures directed at the individual		Non-regulatory and non-fiscal measures with relation to the individual						
							Guide and enable choice			Choice Architecture ("Nudges")		
		Eliminate choice	Restrict choice	Fiscal disincentives	Fiscal incentives	Non fiscal incentives and disincentives	Persuasion	Provision of information	Changes to physical environment	Changes to default policy	Use of social norms and salience
		Prohibiting goods or services e.g. banning certain drugs	Restricting the options available to individuals e.g. outlawing smoking in public places	Fiscal policies to make behaviours more costly e.g. taxation on cigarettes or congestion charging in towns and cities	Fiscal policies to make financially beneficial e.g. tax breaks on purchase of bicycles or paying individuals to recycle	Policies which reward or penalise certain behaviours e.g. time off work to volunteer	Persuading individuals using argument e.g. GPs persuading people to drink less, counselling services or marketing campaigns	Providing information in e.g. leaflets showing the carbon usage of household appliances *Regulation to require businesses to use front of pack nutritional labelling, or restaurants to provide calorific information on menus	Altering the environment e.g. traffic calming measures or designing buildings with fewer lifts *Regulation to require businesses to remove confectionary from check outs, or the restriction of advertising of unhealthy products	Changing the default option e.g. requiring people to opt out of rather than opt in to organ donation or providing salad as the default dish *Regulation to require energy companies to provide information about average usage	Providing information about what others are doing e.g. information about an individual's energy usage compared to the rest of the street

Source: The House of Lords, 2011

Sustainable cities and people-centred community planning

Wherever people have lived in large numbers in close proximity to one another there have almost always been challenges to the quality of life and local environments. Housing competes with green space, the convenience of cars competes with pedestrian safety and air quality, the need for products, materials, energy and waste disposal places pressure on surrounding rural areas (Economist Intelligence Unit, 2009). These urban challenges can be overcome through effective spatial planning and such planning initiatives have led to efforts to create models for ideal sustainable cities and city planning (Promising practice 28).

The vision of a sustainable Mediterranean city

Mediterranean cities face problems that differ from other European cities. They are densely populated, often with narrow streets to block out the sun which limits public spaces to meet the often competing needs of local residents. Housing prices in city centres have risen steeply, often beyond the means of many local people who end up forced to live in outlaying areas, which in turn, increases the use of private cars for transportation.

PROMISING PRACTICES

Promising practice 28: Low2No project

The Low2No project took a multi-disciplinary people-centred approach to designing an urban city block in central Helsinki to house 500 people and a headquarters building for Finland's Sitra Innovation Fund.

The project employed a multi-disciplinary team with input drawn from professional designers, architects, engineers and building users. The design team aimed to take a people-centred participative approach to developing an attractive and meaningful sustainable design concept for users, visitors and stakeholders.

www.low2no.org

"The main challenge in creating more sustainable cities is economic. The lack of affordable housing in city centres pushes those with lower incomes out and car use up. Ideas to address this have been hampered by the economic crisis. The long-term trend towards affordable city housing is, however, encouraging."
— Bettina Schaefer, *Ecoinstitut Barcelona, SPREAD consortium partner*

A 2007 Spanish project within the Agenda 21 initiative developed a "Green Book" of the urban environment to guide sustainable development through planning and management processes.[10] The guide sets out definitions of urban sustainability in the Spanish context and lays out a vision for urban planning. Four key characteristics proposed:

- **Compact:** the physical structure of the city and its functions (buildings, mobility, public space) avoids urban sprawl
- **Complex:** activities and services such as education, entertainment, work and shopping can be found close together in all parts of the city, reducing the need for long distance travel
- **Efficient:** the city uses less materials and water, produces less waste and has, in general, more intelligent ways to meet the material and energy needs of inhabitants such as through decentralised generation of renewable energy
- **Promote social cohesion:** The city is mixed in terms of incomes and social groups with established civil society associations and participatory approaches to future planning.

"**Agenda 21** is a comprehensive plan of action to be taken globally, nationally and locally by organisations of the United Nations System, Governments, and Major Groups in every area in which human impacts on the environment." (UN)

Recent initiatives aim to turn this vision of a sustainable city into a reality by, for example improving traffic safety, encouraging children to walk to school as a means to reduce car use. Urban gardening is another example and residents have been encouraged to make use of unused or temporary spaces for gardening.

Local initiatives can have many goals and positive effects, e.g. increasing social cohesion and quality of life as well as decreasing environmental impacts.

10 Libro verde del Medio Ambiente Urbano, Ministerio de Medio Ambiente, Madrid, 2007; download at http://www.ecourbano.es/greenbook.asp

Participatory approaches to urban planning can limit conflict.

Such initiatives improve social cohesion and life quality. Successful examples make use of participatory processes involving relevant actors in a discussion on how shared goals can be achieved. Participatory processes avoid much of the conflict associated with government interventions within limited urban spaces. Some municipalities have mediation teams that are tasked with bridging gaps between planners and citizens. Participatory processes are a promising example of social innovation at the grassroots level and shift the role of citizens from being merely "consulted" to being directly involved in decision making.

Over 3000 municipalities from across Europe are participating in the Covenant of Mayors, a European Commission initiative.

Covenant of Mayors

The Covenant of Mayors is a voluntary European Commission initiative that aims to support European mayors to develop local programs that reduce energy consumption and increase the use of renewable energy. As part of their commitment, local governments prepare a baseline emission inventory and develop a Sustainable Energy Action Plan (SEAP) that outlines activities that will be undertaken to reach defined energy targets. To execute the plans, mayors receive support from a variety of EU institutions including the European Commission and the Joint Research Centre. As of November 2011 there were over 3,000 member municipalities from across Europe within the covenant.

The Swedish city of Malmö was among the original municipalities that became party to the convent. Malmö focused aspects of their Sustainable Energy Action Plan on efforts to change lifestyles. A peer to peer "carbon dieting" programme was developed to assist local residents reduce climate impacts and this initiative alone has attracted active engagement of roughly one thousand households. In the restaurant sector, a thousand employees have been trained in sustainable cooking skills to promote climate friendly food, and the Malmö Festival has become an important platform for communication about sustainable living among businesses and residents.

One Planet Living

Another promising example that combines sustainability with increased quality of life in urban environments is the One Planet Living programme. This programme aims to create a network of green neighbourhoods with "services, infrastructure and design features...that make it as easy, attractive and affordable for people to do the environmentally friendly thing" (Oneplanetcommunities.org). Lifestyles and existing buildings are the starting point when creating these sustainable communities. The design is based on the ten BioRegional and the World Wildlife Fund sustainability principles:

Table 7 The 10 principles of sustainable communities

Zero carbon	Make buildings more energy efficient and deliver all energy with renewable technologies.
Zero waste	Reduce waste, reuse where possible, and ultimately send zero waste to landfill.
Sustainable transportation	Encourage low carbon modes of transport to reduce emissions, reducing the need to travel.
Sustainable materials	Use sustainable healthy products, with low embodied energy, sourced locally, made from renewable or waste resources.
Local and sustainable food	Choose low impact, local, seasonal and organic diets and reduce food waste.
Sustainable water	Use water more efficiently in buildings and in the products we buy; tackle local flooding and water course pollution.
Land use and wildlife	Protect and restore biodiversity and natural habitats through appropriate land use and integration into the built environment.
Culture and heritage	Revive local identities and wisdom; support and participate in the arts.
Equity and local economy	Create bioregional economies that support fair employment, inclusive communities and international fair trade.
Health and happiness	Encourage active, sociable, meaningful lives to promote good health and well being.

Source: BioRegional & WWF (www.oneplanetliving.org)

Different frameworks for action, like the well-established Local Agenda 21 movement, the more recent Transition Town movement, the Covenant of Mayors, or the One Planet Living programme are just some examples of community-based initiatives that aim to reduce the environmental footprint of cities and increase quality of life and well-being of residents.

The role of social entrepreneurship

Social entrepreneurs can be drivers of change and innovation and social entrepreneurship is closely linked to social innovation. The concept of a social entrepreneur is a relatively new idea where an entrepreneur places a priority on the social value they create through their activities rather than financial gain alone. Social entrepreneurs can create value for sustainable lifestyles in many ways, whether through sustainability in supply chains or through the use of innovative products and services as a vehicle to enable sustainable behaviour for consumers.

The mere existence of the market for social entrepreneurship gives reason for optimism. Many young people are attracted to the idea of creating not only financial, but also social value. This emerging market is showing great dynamism, much experimentation and a wealth of new ideas. Nonetheless, there are many

challenges that social entrepreneurs need to overcome, including the mindset of many investors and financing organisations, EU funding systems being a prominent example.

Moreover, there is an inherent paradox that social entrepreneurs must face as they grow. Environmentally friendly organic foods, once a local niche market, grew to be a global business (Smith 2007). While a larger market share may be desirable, growth can come at the expense of innovation and reveal conflicting values between the niche and mainstream markets (Witkamp, Raven and Royakkers 2007).

Support for managing growth is important in the sector. The global Ashoka network aims to promote social entrepreneurship and provides support for individual entrepreneurs by facilitating an expansion of entrepreneurial networks and by creating an infrastructure for the sector. To ensure the potential scale up of a social initiative Ashoka looks to the core of the model, stripped of context, so that it can be successfully exported to other regions and contexts. The commercial counterpart of this concept is the franchise model, however there is very little research or knowledge of the full potential of this approach to promoting sustainable entrepreneurship (Promising practice 29).

Interdisciplinary and practice-oriented research

Capacities, choices and priorities of individuals and families impact at all levels – from the local to the global.

The challenges of organising everyday living in an optimal and sustainable fashion for individuals, households and communities has been, for many decades, the core business of home economics. As a profession and an academic discipline, home economics brings together theory and practice, academic knowledge and everyday life skills – and takes an integrated and multi-dimensional approach to capacities, choices and priorities on the small-scale and associated impacts at all levels. As an academic discipline, curriculum area, arena for everyday living and societal arena, home economics can potentially influence all sectors of society through intervention to transform political, social, cultural ecological, economic and technological systems – again at all levels, from the local to the global.

In addition to price and income, consumer choice is influenced by functional, conditional, social emotional and epistemic values of products.

Home economics draws from and focuses on:

- Food, nutrition and health;
- Textiles and clothing;
- Shelter and housing;
- Consumerism and consumer science;
- Household management;
- Design and technology;
- Food science and hospitality;
- Human development and family studies;
- Education and community services and many more (IFHE 2008).

PROMISING PRACTICES

Promising practice 29:
Support for sustainable entrepreneurs

Building and sharpening entrepreneurial skills to support sustainable lifestyles is the intention of the SMART Start-up programme. This initiative seeks to integrate traditional educational programmes and informal hands-on approaches during dynamic training workshops to inspire, motivate and equip sustainable entrepreneurs with the tools necessary for success.
http://www.scp-centre.org/

A number of research fields that can be clustered together as the "sociology of consumption" aim to understand why people behave the way they do, how their behaviour can become more sustainable, and how their context could be altered to make sustainable choices more easy and natural. There has been considerable interest in this area since sustainable consumption appeared as an issue of political interest and within public discourse. Research on the sociology of consumption and sustainable consumption indicates the need for a paradigm shift in thinking about how to foster changes towards more sustainable lifestyles (Breukers et al. 2009; Jackson 2005; Mont and Power 2010; Power and Mont 2010b). These include shifts:

- From a focus on individuals, to a focus on wider communities and social norms and practices;
- From a focus on changing discrete behaviours to a focus on changing entire lifestyles, cultures and values;
- From a focus on top-down approaches to a shared approach where governments support and learn from community initiatives, and engage with a range of partners to deliver messages and support groups such as civil society organisations, local authorities, media, and others;
- From an understanding of people as "rational choice agents" to human-beings with diverse needs and desires;
- From the provision of information to leading by example and providing practical advice and support;
- From hoping consumers will change the market, to providing the infrastructure, facilities and incentives to make sustainable living possible and desirable for most people.

NGO and CSO action for more sustainable lifestyles

Non-governmental and civil society organisations (NGOs and CSOs) foster debate on the need for meaningful change in values and norms in society. They are in a key position to foster the development of sustainable consumption values and visions and citizen engagement (Lorek 2010; Meadows 1996; Spangenberg and Lorek 2003).

NGOs and CSOs support sustainability in society by:

- Improved coalition building
- Examining broader sustainable consumption instead of isolated topics
- Becoming more politically active and engaging and facilitating critical societal issues

Two emerging trends among NGOs and CSOs are their improved coalition building among stakeholders in society. A closer collaboration with the academic community fosters a practical application of scientific knowledge to the realities of societal and political processes within which NGOs and CSOs participate (Fuchs and Lorek 2005). Further, leading NGOs and CSOs are today applying their knowledge and perspectives to actively set the political agenda on a number of issues, including alternative ways to measure societal development (e.g. new economics foundation) or new approaches to economic progress (e.g. "degrowth" communities).

In the past, NGOs tended to work on isolated topics, such as energy or food, voluntary simplicity or cleaner production. Today, however, a growing number of NGOs are profiling themselves as working on holistic approaches to sustainability (Barber 2007b; Church and Lorek 2007), and this has strengthened their voice and potential to bring about the desired change. Similarly, leading NGOs are beginning to overcome past tendencies to promote sustainable (most often merely "green") consumption based on traditional marketing strategies.

NGOs and CSOs can be catalysts for change.

People are increasingly seen by NGOs as citizens and, rather than encouraging individuals to adopt simple and painless behaviour changes with limited impact,

Many NGOs and CSOs are becoming more politically active.

they are engaging and facilitating critical societal issues such as sustainable norms and values and alternative models of societal organisation. New appeals are being created to advocate self-transcendent, intrinsic environmental and social values with potential to spill over into other domains of behaviour, supporting a shift away from financial self-interest or social status (Crompton 2008; Crompton and Thøgersen 2009; Kasser 2011; Schwartz 1992).

Concluding remarks

Examples discussed in this chapter encourage holistic research-based, design-driven, policy or entrepreneurial approaches to support changes in favour of more sustainable ways of living. The success of these efforts, however, depends heavily on finding localised and tailored solutions that can grow or multiply into larger-scale change. This often requires multi-stakeholder action and support.

The next chapter provides a conceptual framework for successful growth and multiplication of localised or tailored sustainability practices.

A FRAMEWORK FOR CHANGE

This chapter addresses both theoretical and practical approaches to mainstreaming sustainable lifestyles. Many technical, financial, legal and social challenges to sustainable lifestyles cannot be addressed by local initiatives alone. Small-scale innovation is about sowing seeds. The conditions necessary for growth depend on context (Seyfang and Smith 2007). By working in combination, many initiatives have the potential to spread further and contribute to a mainstreaming of sustainable lifestyles.

Promising small-scale sustainable lifestyle practices function as experimental niches that can be upscaled or mainstreamed. Socio-technical scientific theories highlight four key elements that are important for mainstreaming sustainable lifestyles:

- **Defining strategies to mainstream sustainable practices,**
- **Changing norms and values,**
- **Overcoming lock-ins at the system level,**
- **Managing multi-actor and multi-level transitions.**

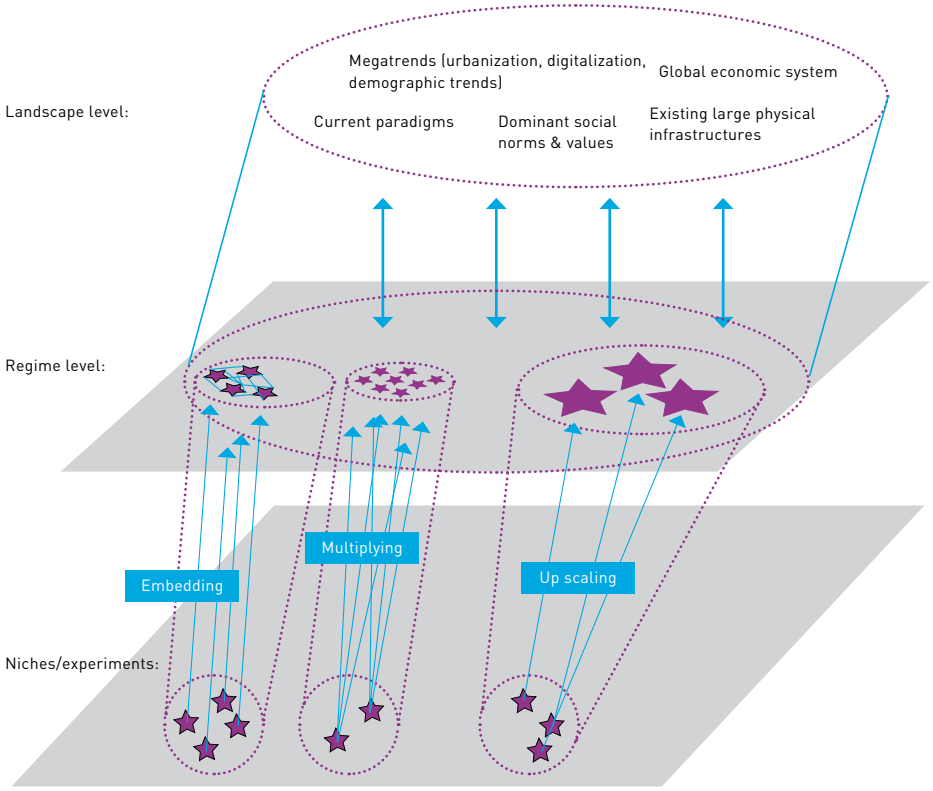
DEFINING STRATEGIES TO MAINSTREAM SUSTAINABLE PRACTICES

Transition theory describes multi-level and multi-stakeholder change processes, such as the mainstreaming of sustainable lifestyles, in terms of niche, regime and landscape developments. Local level or small-scale change can be considered as the "niche", where people or groups experiment with behaviours, technologies, products, services and policies that differ from the mainstream (the regime level) (Geels 2002). Events, trends and developments at the landscape level can either enable or impede the process of integrating (or embedding) "niche" practices at the "regime" level.

Local or small-scale sustainable lifestyle initiatives can follow three pathways to reach the mainstream (Figure 17):

1. Become embedded in the wider system through legal, technical, social, or other changes.
2. Multiply, which implies successful replication of small-scale practices in new environments and regions.
3. Upscale, which involves growing small-scale practices to system-level practices.

Figure 17 Pathways to mainstream sustainability practices

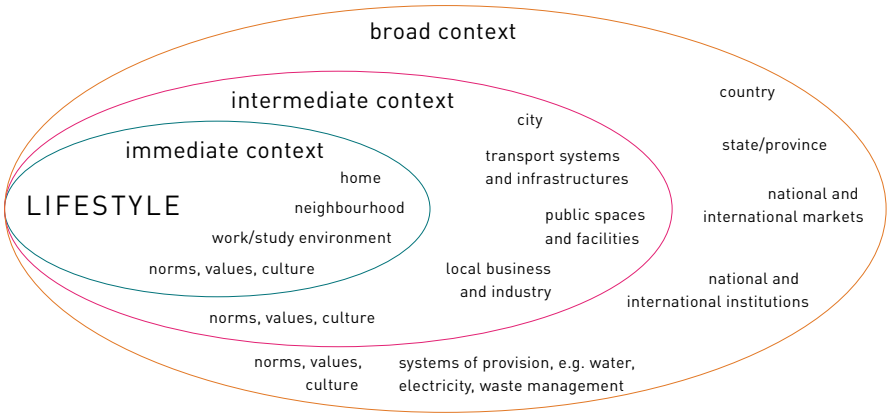


Source: based on Geels 2002, p.1261

CHANGING NORMS AND VALUES

A shift from unsustainable to sustainable lifestyles is complex, involves many changes on many levels, in many domains and among many people, regulations, institutions, etc. (Figure 18).

Figure 18 Three layers of context



One of the most difficult elements to change is the norms and values or conventions and traditions at the system level. These dictate what behaviour is considered normal. Presently, many unsustainable lifestyles are the norm and changing these norms poses a major challenge that requires careful scrutiny of existing routines and underlying values related to comfort, material consumption, and status assumptions. There is a need to "un-learn" old behaviours, challenge assumptions and adopt and encourage new norms until they become usual, common and habitual (Lewin 1951).

CHALLENGING EXISTING SOCIAL NORMS – SOME EXAMPLES

In 2009, the prime minister of Bangladesh ordered male government employees to stop wearing suits, jackets, and ties to work, so that the air conditioning systems could be turned down (Dummet 2009). The aim was to expand the "Suit Ban" to the business sector and, eventually, to re-write Bangladesh's official dress code.

The Japanese "Cool Biz" campaign also discouraged suits and ties and with the aim of keeping thermostats at 28°C. The Japanese Prime Minister instructed his cabinet to wear traditional Japanese short-sleeved shirts instead of business suits (Spiegel 2007). Similar ideas have also been taken up in the UK and by UN chief Ban Ki-moon who encouraged UN staff in New York to dress appropriately for summer months (Kanter 2008).

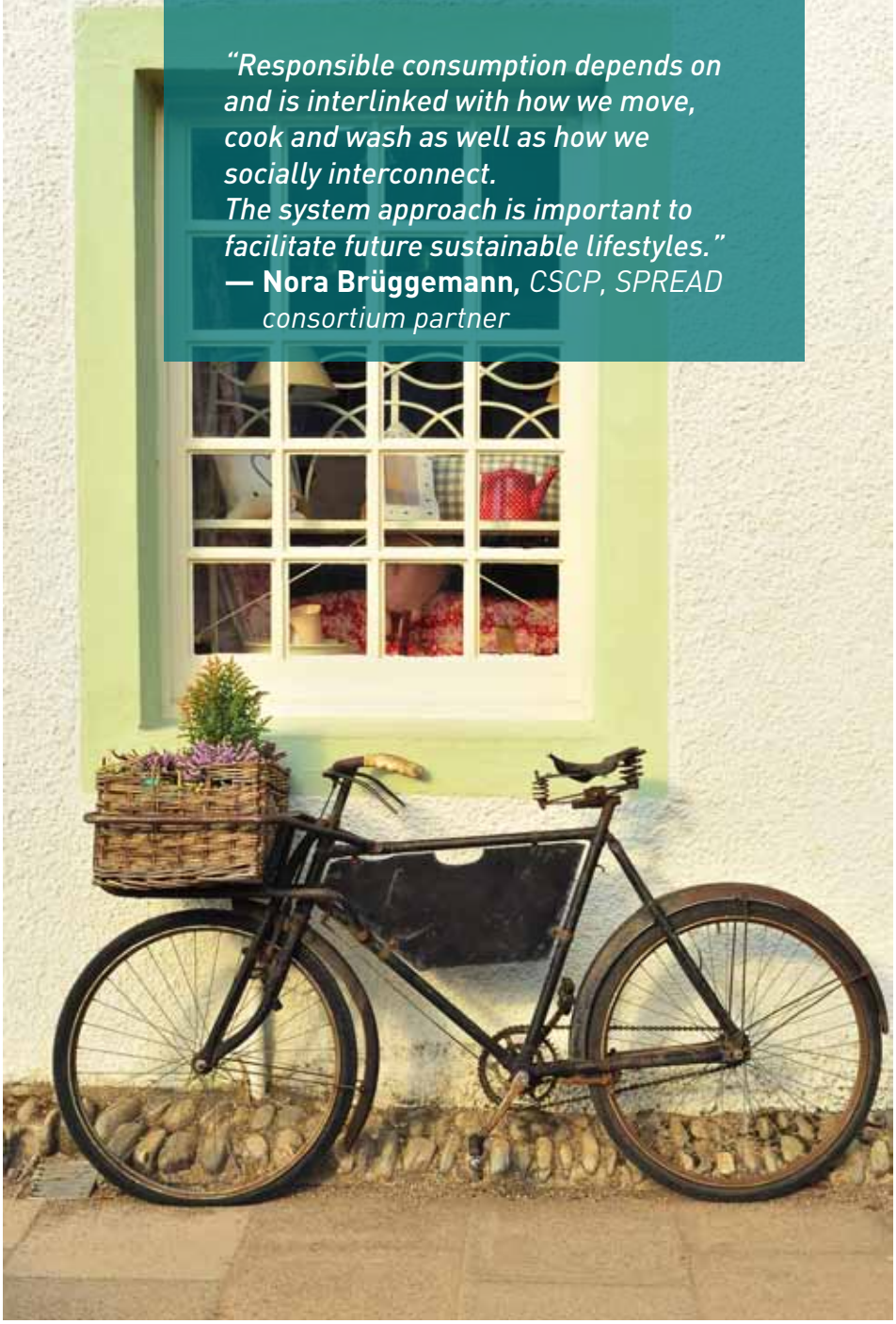
OVERCOMING LOCK-INS AT THE SYSTEM LEVEL

The norms, values and lifestyles in society today are in many ways "locked in" or embedded within existing institutional and infrastructural settings (Sanne 2001). The configuration of our cities, infrastructure, supply systems, housing designs and products in many ways limits the scope for individual choice (Wilhite et al. 2000; Shove 2003; Southerton, Chappels et al. 2004). Therefore, even when there is a willingness among people for change, they often fail to succeed in lifestyle changes because they are confronted with factors that "lock-in" their unsustainable behaviour and choices (Mont and Power 2010; Van Vliet et al. 2005).

AN EXAMPLE OF "LOCK-IN" FOR HOUSING AND MOBILITY

Urban planning shapes behaviour for many years. In turn, people's preferences affect settlement structures, with many people having a preference for single family homes. This preference contributes to urban sprawl and the development of highly dispersed communities. A disperse pattern of settlements results in longer journeys between home, work, shopping areas and other facilities, usually by means of the private automobile -- sometimes several cars per family.

The dominant car culture motivates retailers to locate shops at city outskirts, which restricts access for people who lack a car. The consequences of this shift include deteriorating city centres, increased car dependency which in turn further entrenches, or "locks in", unsustainable behaviour (Mont and Power 2009).



"Responsible consumption depends on and is interlinked with how we move, cook and wash as well as how we socially interconnect.
The system approach is important to facilitate future sustainable lifestyles."
— Nora Brüggemann, *CSCP, SPREAD consortium partner*

Although many people express concern about unsustainable lifestyles, there is a shared feeling that individual improvements will only have a sufficient impact if there is a concurrent broader societal change (European Policy Brief 2009). Individual change at the local niche level can, however, provide the basis for significant changes to broader systems. In other words, successful mainstreaming is often based on, and in turn triggers, many small social and technical innovations that serve to reinforce the broader mainstreaming of sustainable behaviours. However, mainstreaming can be a long-term process: from first small scale niche experimentation to large-scale adoption of new behaviours can require many years.

MANAGING MULTI-ACTOR AND MULTI-LEVEL TRANSITIONS

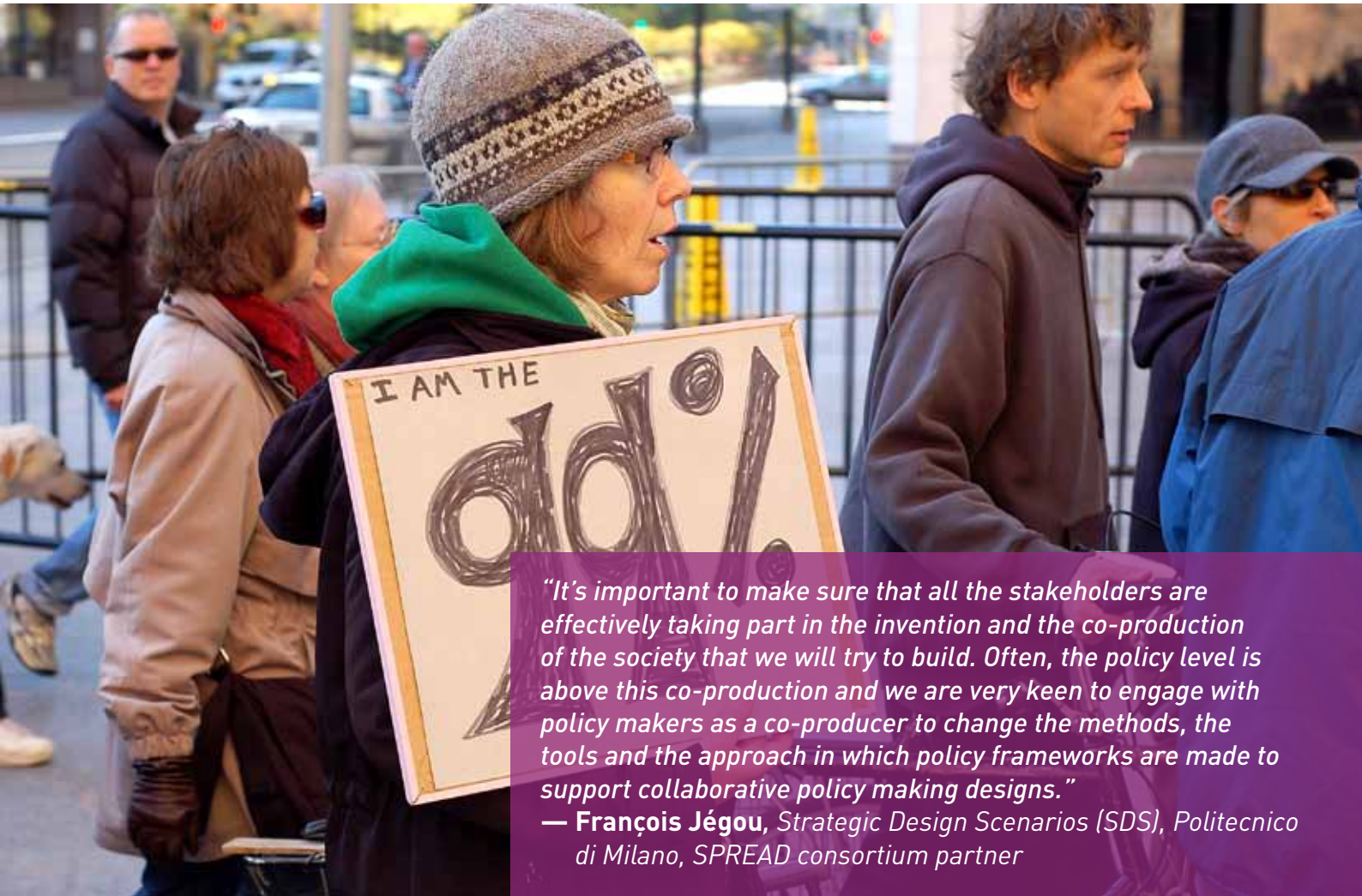
An important question is whether it is possible to manage or organise multi-level, multi-actor transition processes (e.g. from unsustainable to sustainable lifestyles). Transition research gives little hope for active control (Geels 2005). Two possible approaches have received considerable attention in recent years. These are top-down transition management strategies and bottom-up strategic niche management strategies. Both approaches are based on the premise that change processes on different levels co-evolve, with mutual influences and each process in turn shaping the other.

The recently started Community Innovation in Sustainable Energy (CISE) research project[11] explores the diffusion of community energy projects in the UK and asks how local grassroots innovations can become adopted in mainstream settings (Grassroots Innovations Research Briefing 3 2010).

Strategic niche management is a powerful tool to analyse radical technological and social innovations, such as through social entrepreneurship (Witkamp, Raven and Royakkers 2011). As the name suggest, it is also a "management" tool that aims to organise projects for desired radical innovations outside of dominant regimes (Weber et al. 1999). In strategic niche management, project actors at both the niche and regime level co-create expectations that enable adoption of their innovative new practice. Project actors work toward creating

Strategic niche management is a tool to analyse and organise radical technological and social innovation projects.

11 www.grassrootsinnovations.org



"It's important to make sure that all the stakeholders are effectively taking part in the invention and the co-production of the society that we will try to build. Often, the policy level is above this co-production and we are very keen to engage with policy makers as a co-producer to change the methods, the tools and the approach in which policy frameworks are made to support collaborative policy making designs."
— François Jégou, *Strategic Design Scenarios (SDS), Politecnico di Milano, SPREAD consortium partner*

strong and stable stakeholder networks that support learning and ensure funding until market maturity and successful mainstreaming is achieved (Mourik and Raven, 2006).

Transition management aims to increase the chance that desirable futures will be achieved through iterative steps of variation and selection in RD&D, with a focus on technical innovation.

Transition management is a framework for policy and governance that tries to increase the chance of achieving desirable futures. Success factors include, amongst other things, commitment, leadership, guidance and an active government working towards the creation of expectations and market niches (Kemp, Avelino and Bressers 2009).

Transition theory demonstrates that change needs to occur on many levels and among many stakeholder groups to foster sustainable lifestyles. Top-down and bottom-up practice-based approaches are both needed to strategically manage multi-level and multi-stakeholder change processes. However, policy makers and "transition managers" cannot be viewed as being "above" or "beyond" the social system that they are trying to influence. Current sociological thought has largely discarded the notion of "social engineering" - the belief that people's behaviour can be directly controlled "from above" through top down policy alone (Beck et al. 1994). Therefore, the focus in transition management has shifted to reflexive, deliberative and participatory policy making and instrument planning.

FROM THEORY TO PRACTICE AND SMALL-SCALE TO LARGE-SCALE CHANGE

The conceptual framework for the transition toward sustainable lifestyles outlined in this chapter and in the examples of enabling environments and innovative sustainable lifestyle approaches that were outlined in the previous chapter discussed ideas for stimulating both small- and large-scale change. Both the practice-based and the theory-based discussions indicate that complete shifts to more sustainable lifestyles require appropriate "landscape level" changes – for example, in our political and economic systems.

The next chapters trace relevant developments for large-scale or landscape-level changes in policy and research and present scenarios and roadmaps for change among different stakeholder groups.

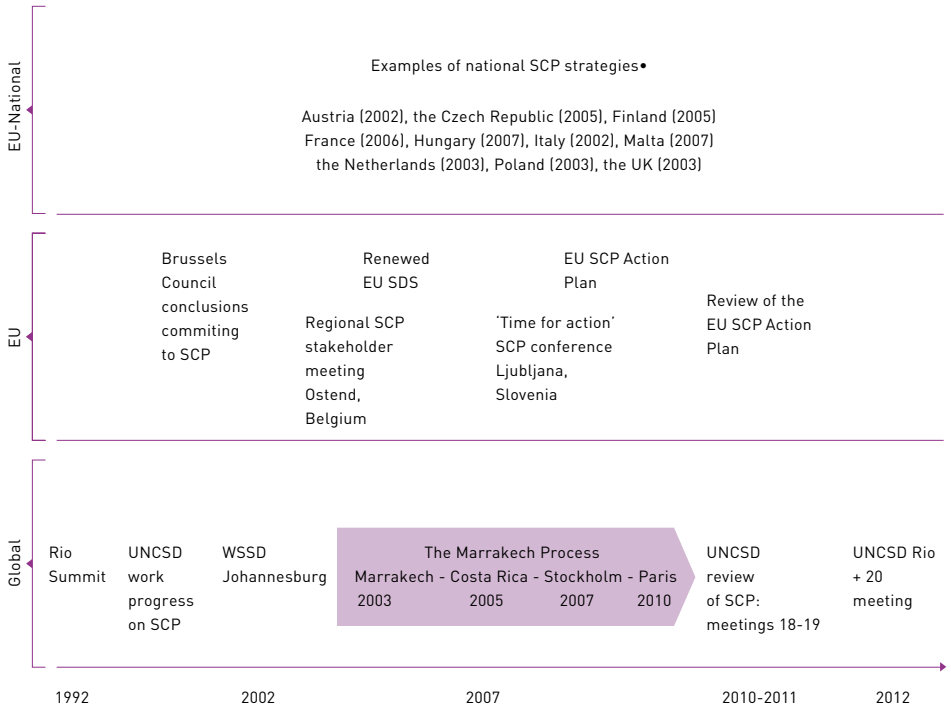
POLICY INITIATIVES FOR LARGE-SCALE CHANGES

The conditions to support sustainable lifestyles in many ways contradict social and economic systems that we live within today. Unlimited economic growth assumptions, pursuit of short-term private benefits at the expense of long-term social goals, and mass production of low quality products each present significant sustainability challenges.

In other words, the task of developing policies that support sustainable lifestyles is overwhelming. At the same time very few policy strategies and instruments have been developed to directly support sustainable lifestyles and those that have been developed tend to be limited to the provision of information. However, policy promoting sustainable consumption and production (SCP) has existed for several decades. SCP policy is either directly or indirectly relevant to the way people live their lives – their lifestyles.

This section provides an overview of policy initiatives at the global, EU and national levels in relation to sustainable lifestyles. An overview of local and regional policy initiatives for sustainable lifestyles can be found in Appendix A.

Figure 19 Major SCP initiatives at the global, EU and EU Member State level[12]



Source: updated from EEA 2007

GLOBAL LEVEL POLICY INITIATIVES

The Agenda 21 international programme for a sustainable society was developed during the *World Summit* in Rio de Janeiro in 1992.

The need to address unsustainable lifestyles was recognised by policy makers as far back as 1992 during the *World Summit* in Rio de Janeiro (Figure 19) where the Agenda 21 international programme for a sustainable society was developed (UNCED 1992).[13] *Agenda 21* specifically speaks to the need to address consumption and lifestyles in the context of environment and development and specified that

> *"consideration should also be given to the present concepts of economic growth and the need for new concepts of wealth and prosperity which allow higher standards of living through changed lifestyles and are less dependent on the Earth's finite resources and more in harmony with the Earth's carrying capacity" (UNCED 1992).*

12 Explanation of abbreviations SDS = sustainable development strategy; WSSD = World Summit on Sustainable Development; UNCSD = United Nations Commission for Sustainable Development

13 http://www.un.org/esa/sustdev/documents/agenda21/english/Agenda21.pdf

Agenda 21 also put responsibility on governments and private-sector organisations to reinforce values that support sustainable consumption by promoting

> *"education, public awareness programmes and other means, such as positive advertising of products and services that utilise environmentally sound technologies or encourage sustainable production and consumption patterns".*

The UN Johannesburg Plan of Implementation targeted changes in unsustainable patterns of production and consumption as one of the main elements of sustainable development between 1992 and 2002.

Ten years following the 1992 Rio World Summit, the *Johannesburg Plan of Implementation* targeted changes in unsustainable patterns of production and consumption as one of the main elements of sustainable development. This was followed by a process to develop a ten-year framework of programmes – the *Marrakech Process*. The Marrakech Process aimed to support regional and national initiatives to accelerate the shift towards sustainable consumption and production (UN 2003). Within the process, a *Task Force on Sustainable Lifestyles* was led by the government of Sweden between 2005 and 2009 with a focus on:

> *"exploring opportunities for the development of practices and choices that enable individuals to meet their needs and aspirations with a sense of responsibility towards the present and future generations, taking into account their environmental and social impacts" (TFSL 2010: 2).*

The UN Marrakech Process aims to support regional and national initiatives to accelerate the shift towards sustainable consumption and production between 2002 and 2012.

The starting point for the Task Force on Sustainable Lifestyles was the belief that:

> *"sustainable lifestyles require a strong shift in behaviours and collaboration between individuals and communities. They also involve the development of alternative infrastructures, concrete workable solutions respectful of socio-cultural realities, and efficient messages to support them" (TFSL 2010: 2).*

The Task Force on Sustainable Lifestyles completed its work in 2009 and provided the following recommendations to foster the shift to sustainable lifestyles:

The Marrakech Process includes a Task Force on Sustainable Lifestyles.

> *"The challenge of development and poverty alleviation is the key area for future work. Therefore "sustainable lifestyles" should not be misunderstood as a rich nation choice. The desire to enjoy western living standards is profound also in developing countries. However, developing countries also have sustainable solutions to offer. Therefore, better understanding of sustainable lifestyles, as well as more innovation in the design for sustainable solutions in different parts of the world, is crucial for achieving sustainability. Sustainable lifestyles require a strong shift in behaviours and collaboration between individuals and communities. They also involve the development of alternative infrastructures, concrete workable solutions for socio-cultural realities, and efficient messages to support them.*
> *While some work is underway, more is needed. Networks between innovative groups of people in different places and countries must be encouraged. More cooperation and action is needed to demonstrate the benefits of sustainable lifestyles, explore new perspectives and development paths, motivate policymakers, civil society organisations, scientists, the business sector and individuals" (TFSL 2010).*

Many of the projects initiated within the task force will continue under the auspices of the newly established *Partnership for Education and Research about Responsible Living* (PERL 2010).

The *UNESCO and UNEP youthXchange (yxc) project*[14] aims to help trainers and interested individuals understand and communicate on sustainable lifestyles. The project website is available in nearly 20 languages and has collected over 130 examples of organisations, innovative ideas and motivated people from around the world.

The majority of policies and tools targeting sustainable consumption specifically aim to "green" markets and products by encouraging innovation in companies and along supply chains. For example, *UNEP initiatives* have included reports on the role of marketing and advertising for sustainability, life cycle management, design for sustainability and resource management. UNEP has also launched sector initiatives to promote SCP in different sectors such as construction, finance, retail and tourism and sustainable public procurement (SPP).

In the light of the recent economic crisis, UNEP has developed strategies to disseminate green growth through a number of initiatives, notably the Green New Deal.

Finally, in the light of the recent economic crisis, UNEP has developed strategies to disseminate green growth through a number of initiatives, notably the *Green New Deal* (UNEP 2009). Although this initiative does not overtly discuss approaches to sustainable lifestyles there are many opportunities to support sustainable lifestyles within the sector level strategies within the initiative. For example, the tourism sector is closely linked to individuals and their leisure time behaviours and thus to lifestyles. Another example is the financial sector that, rather than focusing only on sustainable investments and ethical funds could also focus on private saving and spending behaviours, which are also linked to lifestyle and consumption choices.

The OECD has been working on sustainable consumption issues and investigated factors that shape consumer behaviour.

Since 1994 the Organisation for Economic Co-operation and Development (OECD) has been working on sustainable consumption issues. The *OECD* has produced numerous reports that address various consumption domains including food, energy, water, waste and tourism-related travel (OECD 2002b; OECD 2002a). Recent studies, "Household Behaviour and the Environment: Reviewing the Evidence" (OECD 2008a) and "Promoting sustainable consumption: Good practices in OECD countries" (OECD 2008b) investigated the factors that shape consumer behaviour and how this behaviour can be changed through the design of targeted environmental policies to focus on waste generation and recycling; reducing environmental impacts of personal transportation and residential energy consumption; supporting organic food consumption; and reducing residential water use. A common element of these reports is the need for approaches that are adjusted to different population and consumer segments.

EU LEVEL POLICIES

Although a number of policy strategies at the European level define sustainable consumption and production as a priority focus area none specifically address sustainable lifestyles. For example, the broad policy framework for the promotion of sustainable consumption and production (SCP) in the European Union includes the *Lisbon Strategy* (European Commission 2000), and the *Sixth Environmental Action Programme 2002-2012*. SCP is also recognised as one of the ten key objectives of the *2008-2010 Community Lisbon Programme* and is among the seven key challenges to be tackled within the *EU Sustainable Development Strategy* (EU SDS) (Council of the European Union 2006).

14 www.youthxchange.net

"The unsustainable consumption patterns and lifestyles are since many years a challenge and a contributor to climate change, resource depletion and biodiversity losses. Addressing these issues is becoming the new aspiration of emerging economies. Europe has the responsibility to show the world that we can live and live very well within environmental limits."
— Gunilla Blomquist, *Swedish Ministry of the Environment, SPREAD project advisor*

More recently, and in the light of the economic crisis, SCP patterns have been linked to the goals of the *European Employment Strategy* to create more and better jobs. These goals are taken up in the new *Europe 2020 Strategy*, which highlights a new growth perspective with three priority areas:

- *Smart growth* stemming from developing an economy based on knowledge and innovation;
- *Sustainable growth* based on a more resource efficient, greener and more competitive economy;
- *Inclusive growth* that fosters a high-employment economy of social and territorial cohesion (European Commission 2010).

Neither of these documents specifically mentions sustainable lifestyles as a goal for European societies; the main and immediate focus is on boosting economic growth still measured in GDP, an indicator that does not evaluate prosperity and well-being of people in European Union member states, but rather a level of any economic activity, which may include war or environmental disasters.

Similar to the 1992 UN Agenda 21 initiative, the *EU Sustainable Consumption and Production and Sustainable Industrial Policy (SCP/SIP) Action Plan* adopted in 2008 focused on improving the environmental performance of products and increasing the demand for sustainable products (European Commission 2008).

The Action Plan includes eight key building blocks (European Commission 2008):

- Eco-design requirements for more products;
- Reinforced energy and environmental labelling;
- Incentives and public procurement for high-performance products;
- Green public procurement practices;

- Consistent product data and methodologies;
- Work with retailers and consumers;
- Supporting resource efficiency, eco-innovation and the environmental potential of industry;
- The international promotion of SCP.

The level of ambition of the EU Action Plan has been heavily criticised by NGOs and the academic community for failing to provide a coherent policy umbrella and for the absence of measurable targets, manageable goals and clear timeframes. Today the EU Action Plan is being revised to address some of these concerns. The revision is, however, still dominated by the approach of expanding global markets for environmentally friendly products, which is only one aspect of more sustainable lifestyles.

From a sustainable lifestyles perspective, the Action Plan limits its ambitions to industrial or public actors with only little reflection on how sustainable consumption in individual lifestyles can be fostered. Little progress has been made to reform prices to reflect sustainability issues and there is little to suggest that this will be addressed within the EU SCP/SIP Action Plan. The Action Plan also does not address trends toward large shopping malls and retailers moving to city outskirts and there is no discussion of trends toward shopping being a major leisure activity for teenagers and the relative absence of alternatives on offer in local communities, schools or by the entertainment industry.

"We need to bring entrepreneurs and policy makers together to design and implement the policies that foster the technological and societal innovations needed to achieve more sustainable lifestyles. Feeding these insights into the implementation of the resource efficiency roadmap and the revision of the EU SCP Action Plan would be a great step."

— Lars Fogh Mortensen,
Head of Sustainable Consumption and Production Group, European Environment Agency, SPREAD project advisor

"Scale is not just something that happens, policy is needed to reach large scale changes."
— Participant at the SPREAD Launch Conference, May 2011

NATIONAL POLICIES

The two supra-national sustainability strategies within the EU include the *Nordic Strategy of Sustainable Development* (2004) and the *Mediterranean Strategy for Sustainable Development* (2005). These initiatives promote sustainable consumption and production policies as a key component of sustainable development, but do not address lifestyle aspects of the proposed measures within the strategies.

A small number of individual states have also developed SCP strategies with varying degree of success. Sweden has developed a national strategy for sustainable consumption (Regeringens skrivelse 2006), but implementation has not been fully successful. Finland has developed a national SCP programme, called "Getting more from less" (KULTU Committee 2005), however the initiative was heavily criticised for its lack of support for implementation (Berg 2007).

A small number of individual EU member states have developed SCP strategies – with varying degree of success.

A 2007 study of existing SCP strategies in European countries (EEA 2007) concluded that all strategies comprised building block type instruments or activities, including eco-labels, green public procurement (GPP), information and training for consumers on resource degradation, pollution and waste. Some touched upon holistic elements, such as fostering structural changes or identifying new modes of fulfilling societal needs.

In Asia, researchers at the Centre of Gross National Happiness (or GNH) in Bhutan have developed a Gross National Happiness Index. They argue that happiness is a better indicator of progress and well-being than the widely used Gross National Product. The *GNH index* was launched by Lyonchhen Jigmi Y. Thinley, Prime Minister of Bhutan, in 2008. The aim is to set benchmarks and track policies and performance in Bhutan (speech by Karma Ura, SPREAD consortium 2011).

The Centre of Gross National Happiness in Bhutan has developed a Gross National Happiness Index.

An international commission created in 2008 by French President Nicolas Sarkozy found that an increasing number of governments are planning to introduce new measures of well-being to complement existing financial indicators of progress such as GDP. *Action for Happiness* in the UK[15] is a new mass movement for social change. Action for Happiness focuses on one simple idea: that if we want a happier society, we've got to approach our lives in a way that prioritises the things that really matter, especially the happiness of those around us.

An international commission found that an increasing number of governments are planning to introduce new measures of well-being to complement existing financial indicators of progress such as GDP.

The UK seems to be the only country that has recently established a specific environmental behaviours unit at the *Department for Environment, Food and Rural Affairs* (Defra). The role of this unit is to "assemble, analyse and translate evidence related to pro-environmental behaviours" and "to work within Defra and with external stakeholders to improve the design and implementation of policy interventions aimed at helping individuals and communities live more environmentally sustainable lifestyles" (DEFRA 2008). The unit has developed a framework for pro-environmental behaviours that provides a set of behavioural goals,

The UK seems to be the only country with a governmental body focusing on influencing behaviour.

15 www.actionforhappiness.org

principles and approaches, insights and tools to help guide consumer-oriented work of Defra over the medium term. The conclusion of a 2008 study undertaken by the unit is that

> *"[...] it is hard to see much appetite for radical lifestyle change, but there is much that can be done within the parameters of current lifestyles – such as challenging wasteful habitual behaviours; encouraging take up of greener products and services; or removing external barriers. But apart from seeking some direct behavioural outcomes an important secondary benefit from public engagement has to be in widening the mandate for government and business to play their respective parts" (DEFRA 2008: 74).*

Government can play a role in expanding the boundaries of the current mandate by stimulating policy debate on sustainable lifestyles, unsustainable consumer culture, trade-offs between energy policy and lifestyles, or travel and well-being.

"Widen the mandate" is a very important message that stresses the paramount role governments are playing in shaping our everyday lives through policies, actions and indirect messages. There is therefore a role for government to play in expanding the boundaries of the current mandate by stimulating policy debate on sustainable lifestyles, unsustainable consumer culture, trade-offs between energy policy and lifestyles, or travel and well-being. The Defra study suggests that there might be need for combination of approaches to promote sustainable lifestyles that could include "top down mass engagement, some targeting of key segments (or groups within those segments), partnering with other public, private or third sector bodies, or community-based action" (DEFRA 2008).

None of the SCP strategies explicitly discusses public health consequences of measures they propose.

One of the important issues for quality of life is of course health. None of the SCP strategies explicitly discusses public health consequences of measures they propose. On the other hand, existing nutrition strategies put health issues in the context of sustainable lifestyles to some extent, although they are mostly focused on the promotion of health, reduction of obesity or chronic diseases by promoting healthy diets or physical activity. Similar to sustainable consumption tools, they heavily rely on voluntary instruments, such as consumer information or influencing the public food services sector in schools, hospitals and other institutions.

POLICY INSTRUMENTS FOR SUSTAINABLE LIFESTYLES

The overview of policy instruments (Table 8) clearly illustrates that the primary focus of most policy instruments rests with eco-efficiency improvements of products and production processes and consumption and lifestyles are only indirectly or implicitly addressed. Policy instruments aiming to "nudge" people towards more sustainable lifestyles by designing supporting choice environments are illustrated in Table 6 (p. 73).

Policy instruments for sustainable consumption and production (SCP) are typically divided into administrative, economic and informative instruments. Each of these can be further delineated into mandatory and voluntary.

Table 8 Policy instruments for sustainable consumption and production

	Mandatory instruments	Voluntary instruments
Administrative	Bans, licenses, requirements for EHS[1] information, EPR[2], recycling and recovery quotas, material and quality requirements, emission levels, chemicals regulation	Responsible Care and similar initiatives, POEMS[3], application of product standards, product panels, EMS[4], functionality panels, agreements between government and industry
Economic	Deposit-refund systems, taxes and charges, liability rules	Green public procurement, technology procurement, R&D investments
Informative	Requirement on EHS information, emission registers, material and quality requirements, chemicals regulation on information for professional and private users, energy labelling, marketing regulations	Eco-labelling ISO[5] type I, Environmental Product Declarations (EPDs), green claims, energy labelling, organic labelling of food, certification schemes of e.g. hotels, consumer advice, consumer campaigns, education

1 Environmental health and safety
2 Extended producer responsibility
3 Product-oriented environmental management system
4 Environmental Management System
5 International Standard Organisation

Source: Mont and Dalhammar, 2005

Administrative instruments, such as bans, are seldom used in the sustainable consumption and lifestyle policy field. Such interventions could jeopardise the very fundamentals of the market economy and are very unlikely, therefore, to be politically acceptable. Exceptions can include restrictions on products that cause nuisance and impose negative health effects or large environmental impacts. Examples of such products include jet skis, tobacco, drugs and chemical products or marketing efforts toward children. This implies that the scope for action depends on the cultural context, and this context is changing. What appears to be impossible today can be possible tomorrow. Indeed, legislation can have great effect on consumption patterns, because laws affect the social context in which our ideas of interactions between humans and nature, of consumption, well-being, morale, and identity are shaped. Regulations on advertising, product standards, trade, social policies and education are also vital, as they influence the attitudes of different actors (Mont and Dalhammar 2008).

Mandatory economic instruments, such as taxes and charges, are rarely welcomed by businesses or the public. The internalisation of environmental costs has been on the political agenda for more than a decade, but there has been only limited progress, and only in a small number of countries.
Nevertheless, gasoline tax is one example of an economic instrument that directly affects driving behaviour. The congestion charging schemes in London and Stockholm are other examples of initiatives that have supported behaviour change in favour of public transport. There are also successful examples of subsidy programmes for energy efficiency upgrades in private homes that to some extent also raise awareness of environmental impacts and costs.

Information instruments comprise only few mandatory schemes for the environment-related information on products with only limited relevance to sustainable lifestyles. One relevant mandatory informative instrument is European and national advertising legislation that regulates the use of environmental claims and certain marketing terms, such as "organic".

Evidence based measures for addressing rebound effects (Maxwell et al. 2011):

- Recognising and accounting for rebound effects in the design and evaluation of policy;
- Use of an integrated mixture of instruments encompassing fiscal, behavioural and technology;
- Sustainable lifestyles & behaviour change in consumers;
- Awareness raising & education for leveraging behaviour change in business.

In addition to mandatory instruments, there are a greater number of voluntary informative instruments in use in Europe. These include product eco-labelling (ISO type I), environmental product declarations (EPDs, ISO type III), organic labelling of food and certification schemes for, as examples, hotels and beaches, and consumer advice and education. The effectiveness of voluntary informative instruments has been questioned and there are studies that demonstrate that information alone is insufficient to achieve change in the face of significant gaps between consumer attitudes and actual behaviours (Power and Mont 2010).

Policy instruments can, therefore, aim to change consumption practices either directly through, for instance, product restrictions or indirectly through the application of economic instruments to influence prices or consumer information. However, the impacts on actual consumption patterns and lifestyles are hardly straightforward and a combination of various types of instruments – administrative, economic and information – is often proposed (DEFRA 2008; Tukker, Diaz-Lopez et al. 2008). Instrument packages are also seen as critical to preventing rebound effects (Maxwell et al. 2011).

A recent trend in European policy making is a growing focus on how behaviour can be changed through various types of non-intrusive, non-mandatory and non-regulatory policy interventions. This non-regulatory approach to behaviour change was described as "nudging" by (Thaler and Sunstein 2008) and was defined as

> *"[...] any aspect of the choice architecture that alters people's behaviour in a predictable way without forbidding any options or significantly changing their economic incentives. To count as a mere nudge, the intervention must be easy and cheap to avoid. Nudges are not mandates. Putting the fruit at eye level counts as a nudge. Banning junk food does not." (Thaler and Sunstein 2008 p. 8).*

This idea is gaining acceptance among policy makers who are reluctant to approach consumption and lifestyle issues through administrative or economic instruments that tend to limit individual choice. The focus on choice, therefore, also highlights the importance of the social context – the social norms and culture – that was emphasised above in the discussion on administrative instruments.

The following chapter discusses roadmaps, scenarios and visions towards sustainability from the perspective of different stakeholder groups and presents research findings regarding the mainstreaming of sustainable lifestyles.

ROADMAP AND RESEARCH INITIATIVES FOR LARGE-SCALE CHANGES

SCENARIOS AND ROADMAPS

Recent years have seen an explosion in various types of scenarios, visions and roadmaps created by scientists and, increasingly, by the businesses community to support international, regional, and national policies and implementation strategies. This trend is also apparent in the sustainability field. A sample of the many existing visions and scenarios is briefly presented in the box below to provide an indication of the current state of the discussion.

Looking at the visions and scenarios presented here, it is apparent that there is a great variety in the scale of proposals and targeted actors and participants. Generally, it can be observed that most of the work tends to focus on technical approaches that tackle production rather than social and economic approaches designed to address consumption and social aspects or challenge the assumption of our current economic system. Also absent from the discussion is a balanced and comprehensive vision that discusses scientific findings with other stakeholders such as policy makers, businesses and CSOs or NGOs.

These are early days in the development of visions and scenarios and no studies today have fully depicted everyday life in 2050 in terms of consuming, living, moving, and health and society issues. Further, estimates of the implications for macro-level choices around renewable energy, alternative transportation systems and the economic world order have not been forecasted. These gaps are intended to be addressed within the SPREAD project both at the conceptual and implementation levels.

CURRENT VISIONS, ROADMAPS AND STRATEGIES RELEVANT TO SUSTAINABLE LIFESTYLES SCENARIOS

The World Business Council for Sustainable Development (WBCSD) Vision 2050 lays out challenges, pathway and options for business to develop strategies for a sustainable world. The vision was created by 29 global companies representing 14 sectors and based on dialogues in 20 countries with several hundred experts and company representatives. The vision stipulates "living within the limits of the planet" by 2050 when the global population is forecast to reach nine billion people. The WBCSD vision aims to sustain a prosperous standard of living within available natural resources and without further harm to biodiversity, climate and ecosystems. The WBCSD Vision 2050 also identified pathways to connect this sustainable future with the present, including providing universal access to low-carbon mobility and improvements in the use of resources and materials by a factor of 4-10. The WBCSD also noted that "the elements of the pathway demonstrate that behaviour change and social innovation are as crucial as better solutions and technological innovation" (WBCSD 2010).

Consumer Futures 2020, led by *Forum for the Future* in partnership with *Sainsbury's* and *Unilever*, developed four scenarios that explore possible consumption patterns in 2020. This report provides interesting indications on sustainable lifestyle patterns concerning product consumption with strong linkages to topics such as health and society as well as entrepreneurial practices (Forum for the Future, 2011). Forum for the Future also focused on urban mobility in the year 2040 within its **Megacities on the Move** (Forum for the Future, 2010).

Unilever aims to grow its business while decoupling growth from environmental impact. Its **Sustainable Living Plan** is intended to help one billion people improve their health and well-being, halve the environmental impact of all products, and procure 100% agricultural raw material from sustainable sources by 2020. Based on a Life Cycle Assessment conducted for 1,400 of its products, Unilever identified 26% of the carbon footprint of its products as being related to the production phase, while 68% related to the consumption phase, a finding that emphasises the importance of lifestyle changes (Unilever, 2010).

Recently, *Procter & Gamble* announced a new long-term environmental sustainability vision for 2020, to be seen as complementary to their existing 2012 goals. Concerning Long-term Product End-Points they aim to use 100% renewable or recycled materials for all products and packaging, have zero consumer waste disposed to landfills; design products to delight consumers while maximizing the conservation of resources (P&G, 2010).

In **Green Jobs: Towards decent work in a sustainable, low carbon world** *UNEP* observes a steady increase in employment in the sustainability sector. Despite these optimistic findings the report stresses the need for urgent action to further promote the growth of green jobs (UNEP 2008).

The **Roadmap for moving to a low-carbon economy in 2050** adopted by the *European Commission* in March 2011 suggests that the EU should prepare to reduce its domestic emissions by 80% by 2050 relative to 1990. The roadmap also explores the contribution of key sectors to these total emission reductions and establishes a reduction target of 90% by 2050 for the power generation, residential and services sectors, and a reduction target of 60% for the transportation sector (European Commission 2011e).

The **Roadmap to a Resource Efficient Europe** adopted by the *European Commission* in September 2011 sees resource efficient development as the route to a vision in which EU economic growth in 2050 respects resource constraints and planetary boundaries. Policies required to attain the goal need to "recognise the interdependencies between the economy, well-being and natural capital and seek to remove barriers to improved resource efficiency, whilst providing a fair, flexible, predictable and coherent basis for business to operate." (p. 4). The roadmap formulates milestones to the year 2020 concerning consumption patterns, land use, biodiversity, improvement of buildings, among other areas (European Commission 2011f).

The *European Commission* is preparing an **Energy Roadmap 2050** to be adopted by the end of 2011. It concentrates on decarbonisation in the energy sector, including several sectoral scenarios and focuses on sustainability, competitiveness and security of supply. It is a political document to clarify the choices that need to be made and to support a Europe-wide approach that, by implication, addresses demand-side issues. The panel that reviewed a draft of the Energy Roadmap 2050 welcomed its interesting ideas and affirmed the value of top-down approaches to successful lifestyle changes. Nevertheless, such approaches need to be evaluated carefully to assure lasting change and to avoid rebound effects in consumption and energy use.[16]

The UK **Food 2030 strategy** formulates the UK government's vision and necessary steps for a sustainable and secure food system for 2030. The strategy is seen as a response both to the major food challenges – sustainability, security and health – and to the call for a more integrated food policy. The priorities set out a focus on food relevant to sustainable lifestyles including the aim to ensure that everybody has the opportunity to eat safe, healthy, affordable and sustainable food, now and in the future, but also to reduce waste and greenhouse gas emissions from the food system (Defra 2010).

The *Smart CSO Initiative* – which has been emerging from the FP7 project called "Action Town" – published a report entitled **Effective change strategies for the Great Transition**. The report identifies weaknesses in CSO strategies and outlines steps that CSOs can take to become stronger change agents for the "Great Transition" to a sustainable society and economy (Narberhaus, Ashford et al. 2011). The initiative developed five leverage points that build a basis for a meta-theory of change for the Great Transition from a CSO perspective according to the following premises:

- Systemic change is needed
- A shift in cultural values is a condition
- An economy beyond material growth and beyond consumerism is desirable, achievable and necessary
- An economic system beyond GDP is possible
- A culture beyond consumerism is possible.

A report by the *new economics foundation*, **The Great Transition** calls for a new economic mindset, forecasting that in the years leading up to 2050 "the cumulative cost associated with climate change will range from £1.6 and £2.6 trillion, while the cost of addressing social problems related to inequality will reach £4.5 trillion" (nef 2009: p. 4). In the report the nef also proposes an alternative

16 http://ec.europa.eu/energy/strategies/2011/roadmap_2050_en.htm

with measures that would create up to £8.65 trillion of environmental and social value by 2050 – an increase that would far outweigh reductions in GDP. The report discusses the need to assign value to environmental and social issues in society, redistribute both income and wealth, rebalance markets with the public sphere, ensure that prices reflect true environmental and social costs, and introduce a much broader localisation in society and associated re-skilling of the workforce (nef 2009).

The Greenpeace EU Energy [R]evolution scenario 2050 study defined two energy development pathways: a basic and an advanced scenario (EREC and Greenpeace 2011). Both scenarios are built on a broad mix of existing technologies and efficiency options that provide the basis for a diversification of investment risks and energy resources. The first scenario – a basic Energy [R]evolution – reduces EU-wide CO_2 emissions by 80% by 2050 relative to 1990 levels by exploiting the EU's large potential for energy efficiency. An advanced Energy [R] evolution would radically improve energy security, increase the use of green technology and drastically reduce GHG emissions and CO_2 emissions by 95% by 2050, creating an almost fully renewable energy system. It projects reduced use of cars and other petroleum-driven vehicles and a faster uptake of efficient combustion vehicles. The Greenpeace study mentions lifestyles stating that "... alongside technology driven solutions, lifestyle changes – like simply driving less and using more public transport – have a huge potential to reduce greenhouse gas emissions" (EREC and Greenpeace 2011: p. 13).

The **2011 Energy Report** by *WWF and Ecofys* develops its own scenario for an 80% reduction of CO_2 by 2050 (WWF, Ecofys et al. 2011). The report includes a specific chapter on lifestyle changes that are needed to reach the 2050 targets while maintaining our quality of life, economic growth and promoting healthy and prosperous lives that ensure greater equality among countries. In the WWF Ecofys scenario, meat consumption is halved in OECD countries by 2050 and increased by a quarter elsewhere in the world. Reducing distances travelled by food and other goods and food waste helps to reduce energy consumption. Predicted increases in personal mobility are managed by moving towards more efficient modes of transport, including cycling, walking, public transportation and rail in place or air transport. There is an emphasis on ICT, which will allow more flexible work patterns and tele-working from home, reducing the environmental impacts associated with commuting and, especially, flying. Finally, the scenario recognises the role of social norms in supporting the desired changes in society.

The starting point of the study **Getting Into the Right Lane for 2050** by the *Netherlands Environmental Assessment Agency (PBL) and the Stockholm Resilience Centre* is a vision of Europe in which the challenges of land resources, energy and mobility have largely been resolved. Reasoning back from 2050, near term actions are identified for the EU to prosper in a world with a global population of nine billion while minimising biodiversity loss, mitigating climate change and enhancing energy security and developing a low-carbon transportation system for the EU (Bakkes et al. 2009).

RESEARCH

The challenges of operationalising and implementing strategies demonstrate the unprecedented scale of social and economic change that is needed to achieve sustainability, and sustainable lifestyles in particular. The active involvement, commitment and empowerment of all relevant stakeholders is vital for a transition toward a more sustainable society.

An increasing number of sustainable lifestyles research initiatives seek to engage diverse stakeholders.

For this reason an increasing number of research initiatives are seeking to engage large diversity of stakeholders to address the question of how more sustainable lifestyles can be encouraged and enabled in contemporary society (Meroni 2007). These stakeholders provide expertise, insights and foresight to identify challenges and opportunities. To this aim, the European Commission's DG Research has also begun work supporting socio-technical platforms and societal networks alongside existing technical platforms to engage different stakeholders in the development of concrete research agendas and implement research strategies. These platforms demonstrate that where national, regional and local contexts diverge, diverse European regions and countries can learn from each other's knowledge and experience.

The topics covered (illustrated in the selected EU funded projects described below) range from behaviour change of energy end-users and social innovation as a driver for technological and production innovation, to the role of business and policy in sustainable lifestyles and to the influence of education programmes on healthy ways of living.

"Context" plays a key role in any change towards sustainability.

One of the main conclusions arising from much of the available research is the importance of context in any change towards sustainability in general, and sustainable lifestyles in particular. Efforts to change behaviour should always take the specific context of the target group into consideration. The projects presented here confirm the importance of bringing together different parties involved in the change process and the need to focus on the end-user.

People-centred approaches to behaviour change are more successful.

Many of the projects have also shown that behaviour change interventions are more likely to succeed when they are designed together with the target audience: a people-centred approach. Technical design will spread more easily when it is based on an understanding of individual needs, motivators, influencers and triggers. Policy is easier to accept if people receive a clear explanation as to why they are asked to behave in a certain way and the expected environmental or social benefit.

Sustainable lifestyles remains a new research field.

While these findings are also relevant to the topic of sustainable lifestyles, even the short overview of EU funded research projects nevertheless highlights that sustainable lifestyles as such are still a relatively new concept in the sustainable consumption and production domain. So far, work has mainly focussed on sustainable production or on sustainable consumption, or on single aspects of sustainable ways of living – what sustainability means for daily living has not yet received the equal attention. A comprehensive research agenda and supporting policy strategy for sustainable lifestyles is to date absent in the EU. The SPREAD project aims to address this gap based on the outcomes of its European social platform process.

EU-FUNDED PROJECTS[17]

The **6th EU Framework Programme for Research and Technological Development** funded several EU-wide projects to address issues related (more or less) to sustainable lifestyles:

- ASCEE (Assessing the potential of various instruments for sustainable consumption practices and greening of the market) aimed to contribute to policy development by identifying promising innovations to foster sustainable consumption and present strategic recommendations for progress.
- EMUDE (Emerging Users Demands for Sustainable Solutions) mapped out the emerging user demands for sustainability and devised qualitative scenarios on how these and specific products and services could co-evolve.
- FESCOLA (Feasibility and Scope of Life-Cycle Approaches to Sustainable Consumption) outlined how life cycle assessment and similar approaches such as environmental input-output analysis could be used to advance the sustainable consumption agenda.
- HOMESERVICE investigated a wide variety of services provided to households to estimate their dematerialisation potential.
- MOSES (Mobility Services for Urban Sustainability) analysed possibilities of replacing car ownership with car sharing.
- SCOPE2 (Sustainable Consumption Policies Effectiveness Evaluation) analysed the effectiveness of policy instruments, voluntary business initiatives and more systemic approaches to SCP.
- SusHouse (Strategies towards a Sustainable Household) developed and evaluated scenarios for transitions to sustainable households focusing on shopping, cooking, eating, clothing and shelter.
- TOOLSUST (The Involvement of Stakeholders to Develop and Implement Tools for Sustainable Households in the City of Tomorrow) evaluated the environmental situation in five European cities to suggest ways in which households could improve. It also developed tools to address sustainable consumption.

The **7th Framework Programme for Research and Technological Development** created two new social platforms on "Cities and Social Cohesion" and "Research for Families and Family Policies" and funded several EU-wide research projects on various lifestyle-related issues:

- PAPA centres on the development and validation of a new method in health promotion, namely a community-based coach education program aimed at promoting the psychosocial development and adoption of healthy lifestyles among young people in Europe.
- FOODLABELS aims to assess the extent to which consumers would value the provision of multiple food labels when making food choices.
- CONSENT seeks to examine how consumer behaviour and commercial practices are changing the role of consent in the processing of personal data.
- DelibSCP identified the research needs and design elements related to deliberative processes on sustainable consumption and production in food, housing and mobility. Conclusions for the future research agenda were drawn from the perspective of the needs of civil society.

More information?

EMUDE
www.sustainable-everyday.net/EMUDE

DelibSCP
www.scp-dialogue.net

Changing Behaviour
http://www.energychange.info

EUPOPP
www.eupopp.eu

CORPUS
http://www.scp-knowledge.eu

RESPONDER
http://www.scp-responder.eu

Action Town
www.action-town.eu

17 More EU-funded research projects: http://cordis.europa.eu/fp7/projects_de.html.

- CHANGING BEHAVIOUR studied opportunities to improve the success of energy demand-side management projects aimed at households, schools, offices, neighbourhoods and towns. It addressed one-off behaviour changes as well as changes in daily routines and habits. The project provided insights and recommendations to policy makers and project implementers how to make daily practices on energy use more sustainable.
- The EUPOPP project (Policies to Promote Sustainable Consumption Patterns) studied the effectiveness of selected policies to influence consumption patterns. It focused on food and housing and used scenarios to quantify the possible environmental and economic effects of "bundles" of policy measures.
- CORPUS (Enhancing connectivity between research and policy-making in sustainable consumption) aims to improve knowledge transfer at the interface of policy-making and research on sustainable development. Among other activities, it tested interactive tools to broker knowledge for different contexts, such as scenario workshops and mapping exercises.
- RESPONDER aims to promote sustainable consumption by exploring novel ways to broker knowledge and improve the management of potential political, social and economic contradictions with economic growth.
- The Action Town – Research and Action for SCP project examined how CSOs can provide new insights for SCP research with the goal of decoupling economic growth from resource use. It has been also successful in kick-starting the SMART CSO initiative looking into effective CSO strategies for the Great Transition.
- URGENCHE developed and applied a methodological framework for the assessment of the overall risks and benefits of alternative greenhouse gas (GHG) emission reduction policies for health and well-being in China and Europe.
- PROSUMER.NET examined how health of people, safety of workers, sport performance, new cultures and lifestyles, and customised fashion products drive European consumer goods on the global market
- ALICE RAP studied addictions governance by describing the views and forces that determine the ways societies steer themselves. Youth as customers are analysed through considering the impacts of new technologies on promoting and mitigating use, by studying the interrelations of culture and biology, and by determining features that promote resilience and nudge young people to reduce problematic substance use.
- EPICHEART studies how diet, nutrients, and lifestyle factors modulate genetic susceptibility for coronary heart disease (CHD).
- HEALTHY FOOD FOR LIFE aims to enhance research capacities in Egypt, Morocco and Tunisia to promote healthy lifestyles in the Mediterranean area.

CONCLUSIONS

This report seeks to provide a baseline of existing research and practice to support the development of a vision, action and research roadmap for sustainable lifestyles in Europe by 2050.

Key challenges and impacts have been identified in four lifestyle impact areas: (1) consuming, (2) living, (3) moving and (4) health and society. Promising examples that minimise unsustainable lifestyle impacts while improving health and well-being have been compiled. The analysis of these promising practices and research findings has revealed useful patterns of innovation at the society and community levels, in the business and policy domain as well as in urban spatial and infrastructure design.

Citizens and stakeholders are beginning to take more coherent action toward sustainable ways of living.

This study agrees with previous research that most current European lifestyles are not sustainable. In addition, this study finds that many stakeholders call for and are starting to take more coherent action regarding the economic, environmental and social impacts associated with the current ways we live, move, eat, and use products and services.

Policy and business have made progress on product efficiency but less on sustainable lifestyles in general.

EU and national policy programmes have made progress on the eco-efficiency of production processes and products, but less has been achieved on policy programmes that directly target consumption levels and lifestyles. Similarly, business approaches have also shown improvements and are benefitting from new efficiencies in production and products. However, business models that question rising consumption patterns and promote sustainable lifestyles remain scarce. The growth in collaborative consumption business models (sharing, swapping, lending, etc.) is a promising exception. The connection between production and consumption (involving consumers in production) is another notable practice that is beginning to influence what and how people consume.

Neighbourhoods, communities and cities are taking common responsibility and action towards sustainable ways of living.

This study also identified a number of examples of neighbourhoods, communities and cities that are taking common responsibility and action to create environments and infrastructure that improve quality of life and enable more sustainable living. Social entrepreneurs, CSOs and NGOs often act as catalysts for such change processes by performing important intermediary actions to align the goals, interests and expectations of the diversity of involved stakeholders.

From a people-centred point of view, research has highlighted that gaps remain in our understanding of how to meet the diverse needs and desires of people across Europe in a sustainable manner and without compromising quality of life.

LOOKING AHEAD: HOW THE SPREAD PROJECT WILL USE THIS BASELINE REPORT

"The SPEAD project provides an important space for dialogue and thinking about how to meet the needs and desires of all citizens, while addressing the global megatrends. SPREAD will add tremendous value if it can highlight the "must have" actions that we need to take in this decade, to get us on track to more sustainable lifestyles for all by 2050."

— Per Sandberg, ***(Senior Manager, Accenture Management Consulting),***
Accenture Sustainability Services, SPREAD project advisor

Input to this report was drawn from SPREAD social platform participants representing the research, policy, business, social entrepreneurship and civil society communities. In the coming months, the SPREAD Sustainable Lifestyles 2050 project partners and social platform participants will co-create their vision of, and pathways towards, sustainable lifestyles in 2050 for research, policy, business and society.

"The SPREAD project can deliver a new view of sustainable lifestyles that all European citizens can aspire toward and achieve as well as showing the paths on how to ***do this."***

— Gunilla Blomquist, *Swedish Ministry of the Environment, SPREAD project advisor*

Several key issues for further discussion have been identified in this report. The SPREAD Sustainable Lifestyles 2050 social platform plans to take these issues forward by:

Envisioning and visualising sustainable lifestyles
Visioning and visualisation techniques make abstract ideas more tangible, stimulating visions of the realm of possibility and orienting mindsets towards more sustainable ways of living. This study has helped develop a more holistic understanding of the current challenges driving unsustainable lifestyles. In the

SPREAD project we will develop and portray a vision and scenarios of possible futures where these challenges have been overcome and more sustainable ways of living have been enabled. Promising sustainable lifestyle practices revealed in this study will be tested for their resilience in the future.

"To unlearn unsustainable habits and mindsets to transition to different ways living, doing and being, the SPREAD project can add value by delivering insights and deeper understanding of individual motivations and triggers to behaviour change."
— Kerstin Ochs, *(Dipl.-Kfm. - Head Laundry & Homecare, International Governmental Relations & Public Affairs), HENKEL, SPREAD project advisor*

Understanding lifestyle needs and desires from around Europe
This study identified the need to provide people-centred solutions that enable more sustainable ways of living while meeting the diverse needs and desires of people across Europe. The SPREAD project People's Forum is working with groups of people from different parts of Europe (north, south, east and west) and representing different household contexts. These groups will test the vision developed in the previous envisioning and visualising step. This primary research will explore what drives, influences and motivates everyday lifestyle decisions, the importance of different local contexts, and cultural legacies, as well as differing needs, desires and visions of the future. The People's Forum will inform the future sustainable lifestyle scenarios and the strategic action roadmap to ensure a people-centred approach.

"The SPREAD project is an important European effort that can take the new consuming concepts of sharing, aggregation, openness, and cooperation forward through supportive policy innovation, business model innovation and social transformation."
— Rachel Botsman, *Author and Founder, Collaborative Consumption, SPREAD project advisor*

"The SPREAD project's human-centred approach will provide important insights for companies to develop sustainable product options that people also desire."
— Per Stoltz, *Deputy sustainability manager, IKEA Sweden, SPREAD project advisor*

Enabling environments, infrastructure and innovation
This study identified the need for increased development of the systems and infrastructure that will help to make sustainable living easy. It also highlights that these enabling environments will need to carefully consider the differing needs and desires of people, as uncovered for example through participatory processes, if change is to be resilient. Backcasting from our future vision the SPREAD project will develop a roadmap of action strategies for individuals, businesses, civil society, research and policy. Outputs of this step will include a policy brief and recommendations for future research.

"The SPREAD project puts people at the centre of sustainable growth, which will provide very important learnings for creating sustainable change and futures in Turkey."
— Engin Guvenc, *Executive Director, Turkish Business Council for Sustainable Development (TBCSD), SPREAD project advisor*

"The SPREAD project's multi-stakeholder engagement and involvement of entrepreneurs provides a unique opportunity to question business as usual and scale new solutions."
— Kirsi Sormunen, *Vice President, Sustainability, Nokia, SPREAD project advisor*

"The SPREAD project provides an important platform for organisations such as ours to share knowledge, understanding and ideas as well as to learn from others, in order that together we can accelerate the transition to sustainable living for everyone.
— Thomas Lingard, *Global Advocacy Director, Unilever, SPREAD project advisor*

Collectively, SPREAD social platform participants will identify opportunities for transitions towards sustainable lifestyles at the individual, community and European levels. A roadmap will seek to identify opportunities for innovation for different societal actors in partnership with or through multi-stakeholder collaborations. To accomplish this aim, the SPREAD social platform seeks to better connect policy makers, social entrepreneurs, investors, NGOs and CSOs, business, services, researchers, and others to co-create a shared vision and roadmap for our common future.

Join the conversation and our European network of experts and practitioners on sustainable lifestyles – visit our online community:
www.sustainable-lifestyles.eu/community.

Learn more about the project process, progress and deliverables at our project website:
www.sustainable-lifestyles.eu.

"The SPREAD project can provide a platform for bringing entrepreneurs and policy makers together to design and implement the policies that foster the technological and societal innovations needed to achieve more sustainable lifestyles."
— Lars Fogh Mortensen, *Head of Sustainable Consumption and Production Group, European Environment Agency, SPREAD project advisor*

"The SPREAD social platform provides the opportunity for a bottom up vs. top down approach."
— Prof. Dr. Kim-Patrick Sabla, *University of Vechta, SPREAD project advisor*

"We must work together to better understand, educate and empower young people worldwide so they can become actors of change. The SPREAD project is clearly contributing to the work that is needed to advance sustainable lifestyles."
— Fabienne Pierre, *Programme Officer, UNEP*

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APPENDIX A

LOCAL AND REGIONAL POLICY INITIATIVES FOR SUSTAINABLE LIFESTYLES

Country	Type / name of initiative	Description	Domain(s)
AT	Sustainable products: Sustainability Weeks	From a successful beginning in 2004, *Das bringt's Nachhaltig ('This works sustainably')* has become a yearly *Sustainability Weeks* event when thousands of retailers throughout the country promote and have special offers on organic, fair trade, and locally made products.	Consuming
AT	Information, awareness raising: Bio-Action-Days	*Bio-Aktionstage* (Bio-Action-Days – Action Days on Organic Food): During one week in September information on organic food, stickers and free organic milk is distributed in the capitals of the 9 Austrian regions by 100 "bio-messengers". This is complemented by informative talks with organic farmers. The initiative is supported by the Austrian ministry of agriculture.	Consuming
AT	Waste reduction: Cookbook for "Leftover Food"	The cookbook "cooking with leftover food " (edited in 2005) contains 70 recipes, complemented by tips on how to buy food without purchasing more than needed, efficient storage and creating new dishes. It was commissioned by the Viennese municipality as part of the initiative "Waste Prevention in Vienna".	Consuming
BE	Stakeholder collaboration: Transition Arenas (Flanders)	The Flanders Government installs and supports transition arenas with all stakeholders. One is already functioning on Sustainable Building and another on Material Management.	Consuming, Living
BE	Sustainable Events	The federal government works on making events more sustainable, from business meetings to pop festivals.	Consuming

Country	Type / name of initiative	Description	Domain(s)
BE	Tutti Frutti	Tutti Frutti is a fruit project of the Flemish government with the aim of children and young people learn to eat fruits vegetables to reach them at school. Schools that participate can receive funding for contracts with suppliers on a weekly fruit vegetables supply to the school to distribute to the students	Consuming
BE	Thursday Veggie day Campaign	City of Ghent, which became the first city in the world to officially stimulate its citizens to have a weekly vegetarian day. Probably it was the first time that a government (be it a local one) structurally encouraged meat reduction.	Consuming
CZ	Information, awareness raising: Organic farming	In 2004 the Czech Ministry of Agriculture prepared an *Action Plan for the Development of Organic Farming up to 2010*, which in particular supports underdeveloped organic farming areas.	Consuming
CZ	Promotion of organic food	The government-funded campaign *Organic Living* ("Žiju Bio") promoted organic farming and nationally produced organic food in 2007, targeting conventional farmers, buyers and consumers, and is being followed up by a three-year consumer campaign funded jointly with the EU. In parallel, 2007 and 2008 retail chains ran significant promotions of organic food, focused on their own corporate brands of organic food (e.g. BIOBIO by Plus Discount, Tesco Organic, Natur*Pur by Interspar, etc.).	Consuming
DK	Waste water reduction: A charge on water consumption	Household water consumption was greatly reduced by a 150% increase in the price of water through a combination of taxes: water supply tax (41%), VAT (20%), variable water taxes (12%), green taxes (14%), variable taxes (9%), fixed wastewater charge (2%), and State wastewater tax (2%) (1989-2001).	Consuming, Living
DK	'Fat tax'	Denmark is the first European country to introduce a tax on saturated fat ('fat tax') in 2011. The tax on tax is debated among scientists. However, if the Danish tax on animal products leads to a decrease of demand for dairy products and meat, and a corresponding decrease of production, this tax would also support further sustainability goals e.g. the reduction of greenhouse gases.	Consuming, Health

Country	Type / name of initiative	Description	Domain(s)
DK	Reducing packaging: Danish deposit and return system	To cope with increases in bottle types, the brewing and grocery industries introduced an improved system that covers a wide range of bottles, under a new legal framework in 2008. The aim is to minimise the environmental impact in connection with the collection of one-way packaging and to make life easier for everyone involved in receiving and handling the returned packaging – from consumers and bottle-handlers to producers, offices and shops.	Consuming
DK	Awareness raising	In spring 2007, the Danish climate campaign *1 ton mindre* (One Tonne Less) was launched by the Ministry of Climate and Energy, encouraging Danes to make a pledge to bring down their annual CO2 emissions by one tonne. It was a one year campaign directed at Danish consumers. The ambitious goal of the campaign to involve 50,000 consumers was exceeded by the end of August 2009 with a total of 84,000 pledgers.	Living
DE	Eco-labelling	The Federal Environment Agency sponsored a consumer organisation to build an online platform on a broad range of labelling activities in Germany and Europe. It provides up-to-date information on over 400 eco-labels and the certification systems behind every label.	Consuming
DE	Eco-labelling	The national *Bio-Siegel* for products from organic farming (introduced in 2001) provides clarity, uniformity and visibility for organic products. Only producers and manufacturers who comply with the provisions of the EU Organic Farming Regulation and subject themselves to the mandatory inspections may sell their products as organic or eco goods and label them accordingly with the Bio-Siegel	Consuming

Country	Type / name of initiative	Description	Domain(s)
DE	Mobility-Information Centre Stuttgart	Friendly, personal information about all means of public transport as well as route planning for cars, cycles and pedestrians - these are the main competences of the Stuttgart Mobility Information Centre. It is located near the main station in the tourist information building, and is organised by the City of Stuttgart, Environmental Protection Office. This cost free service is for all citizens and tourists in Stuttgart. A major concern of the mobility consulting is to arrange mobility in Stuttgart as environmentally-friendly and efficiently as possible. Around 70.000 clients per year seek for mobility information. One third of the information concerns public transport, one third concerns city tourism and one third ecologically-friendly transport modes	Moving
DE	Promotion of Eco/Fair Trade products	The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and the Federal Environmental Agency sponsored and coordinated a range of projects that promote fair trade of ecologically produced products from less developed countries. It included the launch of the international TransFair label (www.transfair.org) through production of promotional materials and the organisation of events at the point-of-sale.	Consuming
DE	Sustainability and consumer policy programme	The Federal Ministry of Food, Agriculture and Consumer Protection launched an integrated *Sustainability and Consumer Policy* in 2009 covering sustainability within food, agriculture and consumer policies with policies in 10 areas: climate protection and adaptation, bio-energy and renewable resources, resource efficiency management, rural development and demographical change, safe and healthier food, sustainable consumption, global dimension of food production.	Consuming, Living

Country	Type / name of initiative	Description	Domain(s)
ES	Sustainable City	The city of Barcelona works since 2001 on integration of environmental and social aspects in public purchasing, and on integration of greening daily activities in public workplaces. This is the City Councils contribution to the Local Agenda 21 of Barcelona (LA21 - The People's Commitment towards Sustainability). The program has been pioneer in Spain and is being replicated at local, regional and national level. It includes close cooperation with NGOs, Universities and Civil Society Organizations.	Crosscutting
ES	Local sustainable development	18 Spanish regional networks of sustainable cities, which are implementing the Local Agenda 21, are collaborating in the Ecourbano - "Network of networks for local sustainable development" (Red de Redes), led by the Spanish Environmental Ministry. The network bases it" s work on the document of reference "Spanish Strategy for the Urban Environment" and collects best practice cases, methodologies and indicators at www.ecourbano.es	Crosscutting
EU	Education	The forum named *Energy-Smart Schools* (initiated in 2006) offers a learning tool for strategies of energy saving in schools and support to set up energy-educational projects, targeting the building and its users.	Consuming, Living
EU	Environmental product policy	*Integrated product policy (IPP)* might be better termed "environmental product policy". It is an attempt by the European Commission to create conditions in which environment-friendly products, or those with a reduced impact on the environment, will gain widespread acceptance among EU consumers. It was initiated in 1997 and in 2001 European Commission published the Green Paper, which outlines the rationale for developing product-related environmental policies.	Consuming

Country	Type / name of initiative	Description	Domain(s)
FI	Increasing efficiency	The national programme to promote sustainable consumption and production, *"Getting More from Less"*, launched in 2005 was the first such initiative in the OECD, prompted by the recommendations of the World Summit on Sustainable Development in 2002. The key objectives of the programme are to increase the efficiency of the usage of materials and energy through all stages of product life cycles, and to promote environmental education and the development and adoption of technologies.	Cross-cutting
FR	Active travel	The *Velib* (free bike) programme launched in 2007 placed 20,000 bicycles at more than 1,000 stations around Paris in the attempt to reduce car traffic and pollution. The programme allows people to pick up a bike freely from certain spots and return it to any other equipped place.	Health, Moving
FR	Bouger 30 minutes par jour, c'est facile!	INPES launched a national and local programme for promoting physical activity with the objective to make people integrate walking or cycling in their daily practices. They have introduced a system of signalling in the cities showing the destinations and the distance in time, such as: "centre of the city, 15 min."	Health, Moving
FR	Education, information, awareness raising	The French environmental energy agency, ADEME, mounted a television communications campaign in 2005 to mitigate climate change (*Energy Savings: Hurry Up. It's Getting Hot*) where individuals tried to break through consumer apathy and suggested small steps for conserving energy.	Consuming, Living
FR	Eco-labelling	In 2007, the *Grenelle de l'Environnement* introduced an eco-label for fisheries products and set up a voluntary environmental certification scheme for farms.	Consuming
FR	Urban planning	In 2007, the *Grenelle de l'Environnement* commissioned environmental impact studies for the development of new urban zones integrating transport and the protection of agricultural and natural land. The aim are village-scale urban settlements with public transport close by, maintaining agricultural and natural land on the periphery for food production and recreation.	Cross-cutting

Country	Type / name of initiative	Description	Domain(s)
FR	Communication programme on products	The *Communication Action Plan for Organic Agriculture 2008 - 2010* includes a comprehensive communication programme on all products. Communication includes special events, TV programmes, press releases, information at retailing points and online.	Consuming
GB	"The Food & Health Alliance"	Health and Food Alliance, including "how our shops are changing eating habits "The Food & Health Alliance is managed by NHS Health Scotland and supported by the Scottish Government and Food Standards Agency Scotland.	Consuming
GB	Greenspace and Health -outcomes framework	Good Places, Better Health (2008) is a policy implementation plan about responding to the challenges we face in creating safe and positive environments which nurture better and more equal health and wellbeing.	Health
GB	Quality Housing – the Sustainable Development Scheme of the Welsh Assembly Government	A National Housing Strategy was developed in 2009 to provide a coherent direction for housing policy in Wales. It guides housing policies of the government, local government and non government organisations. It ensures that social housing continues to provide high quality, affordable homes that meet needs of people on low incomes.	Health
IR	A charge on plastic bags	A 15 cent (€0.15) levy on plastic bags reduced consumption of these bags by 92% and promoted the use of reusable bags by the majority of shoppers, with receipts going to a fund used to support waste management and other environmental initiatives.	Consuming
IR	Ireland's first National Cycle Policy Framework 2009-2020	There are recent policies and incentives – for example Ireland's green school programme (http://www.greenschoolsireland.org/) has a transport strand which encourages walking and cycling to school, and there is also a tax incentive for employees to purchase bicycles with the intent of encouraging cycling to work (http://www.biketowork.ie/). Ireland's capital city has also introduced a public shared bicycle scheme which is one of the most successful in Europe http://www.dublinbikes.ie/	Moving

Country	Type / name of initiative	Description	Domain(s)
IT	Education	In 1982, when chairing the Marrakech Task Force on Education for Sustainable Consumption, Italy set up a network of "Scholé Futuro" (schools of the future), which teach and practice environmental and social sustainability. The association works through communicative tools and projects in collaboration with local administration, companies, authorities and schools.	Cross-cutting
NL	Healthy environment – healthy children	If we want children to become more healthy and responsible citizens we need to give them an opportunity to play in the neighbourhood, go to school by bike; find nature close to the home or in school. Examples: Cycling on prescription- reaching out for under groups culturally not conversant to cycling; Playgrounds in neighbourhoods – John Cruyff, Holland's most famous football player has initiated a charity programme to create sports playgrounds in neighbourhoods in urban areas. There are more than 50 of these courts now, not only used by children but also by elderly or women groups for physical activities. The courts are managed by neighbourhood groups. NIGZ helps to organise activities for children, e.g. an annual sponsor run to collect money for construction and maintenance. Plants in the classroom – the project motivates and helps teachers and children to handle plants, which also helps to purify the air in the class. Schools that have the space for it can also get support in creating school gardens where children can grow vegetables.	Health / moving
NL	Sustainable purchasing	The *NU savings* programme, launched in 2002, is an incentive system for sustainable purchasing behaviour by consumers. Every cardholder buying a product or service from a shop that participates in the NU savings programme receives NU points. These points are automatically credited to their chip cards by means of a terminal placed by the NU card scheme.	Consuming

Country	Type / name of initiative	Description	Domain(s)
NO	An action plan for sustainable development	Norway is revising its Action Plan for Sustainable Development following a peer review by Sweden to, among other things, strengthen sustainable consumption provisions and link them to budget and indicator-based monitoring. And it is intended as a guide for the for all actors in Norwegian society.	Cross-cutting
NO	Keyhole label	Unhealthy diet is a considerable risk factor for cardiovascular diseases. Norwegian health authorities have introduced the Keyhole label (Nøkkelhullsmerket) to make it easier for consumers to choose healthy products. One regularly finds special offers on unhealthy food products and drinks. In many shops sugary drinks are cheaper than milk and water, and it's much the same when it comes to food products.	Health
RO	Cicloteque Romania	first bike renting program launched in Bucharest 3 years ago, funded by a private insurance company UNICREDIT and implemented by an NGO, MaimultVerde. It started with one renting centre - the success of the program has lead to three centres which are presently self funded. The new centres were launched by a cycling tour in Bucharest which involved more than 300 participants, including politicians supporting the project.	Moving, Health
RO	'fast food tax"	As a surprise to industry, consumers and the international community, the Romanian government had announced a tax on fast food in January 2010. The new tax would have been due by the juridical persons who produce, import or process unhealthy foodstuffs, with a high content of salt, fats, sugar and additives. It received a lot of media attention around the world. However, it was not put into force as planned but rather withdrawn with the option to put it back on the agenda in 2011.	Consuming, Health
Scandi-navia	Eco-labelling	The Nordic Swan eco-label, founded in 1989 and administered by the Nordic Council of Ministers, has stringent environmental and climate criteria for 63 product groups. Its strength are its multi-country coverage (5 Nordic countries), high product uptake B26(1 200 products in 60 categories), government certification, and extensive brand awareness among consumers.	Consuming

Country	Type / name of initiative	Description	Domain(s)
SE	Eating habits and food	The goal of this food policy is ecologically, economically and socially sustainable food production. The public health perspective of this policy is important and focuses on an increase of the public's knowledge of the connection between diet and health. It involves formulating a target for societal efforts with regards to eating habits; intensive marketing of sugary and fatty foods, often in the form of ready-to-cook and fast food are recognised as main causes.	Crosscutting, Health
SE	Traffic congestion charge	The Stockholm congestion charge is a traffic congestion and environmental tax. It has been imposed on the majority of vehicles in Stockholm in 2007 to reduce traffic congestion and improve the environmental situation in central Stockholm.	Health, Moving
SE	Sustainable Living action plan	"Think Twice!" is a fully integrated sustainable consumption programme, launched in 2005, with a four-year action plan to teach consumers how to eat, live and travel sustainably. It also aims to make the concept of sustainable consumption more comprehensible.	Cross-cutting
SE	Malmö's Sustainable Energy Action Plan (SEAP)	The city is working in a number of ways to provide the tools and methods to involve residents in reducing their climate impact. A pilot "carbon dieting" programme with a small number of households helped develop methods on which a modified programme involving 1000 households in a peer training and development programme has been created. The city's climate friendly food strategy has trained more than 1,000 employees in the city in sustainable cooking skills, promoting low-climate impact food across the city. Malmö festival with its 300,000 visitors has become a flagship of sustainable living and important communication platform with residents and businesses in the city. Branch specific partnerships are being developed to bring sustainable consumer choices to a broader audience. Eco-driving is promoted in the transport sector.	

Country	Type / name of initiative	Description	Domain(s)
SK	Eco-labelling	The *National environmental labelling scheme for Environmental friendly products* (adapted by Act No.469/2002) aims to promote the production and consumption of products that lower negative impacts on environment, energy consumption and consumption of raw material and hazardous substances, to improve better knowledge about environmental performance of products among the public, producers, suppliers, sellers.	Consuming
UK	Communication, awareness raising on climate change	The *Climate Change Communications Initiative (CCCI)* was launched in December 2005. The initiative built on an evidence base which indicated that there was a need to focus on helping people understand that climate change was a "here and now" issue, and emphasised the value of using "trusted intermediaries" to shift attitudes. The initiative uses the latest multimedia techniques, including interactive websites, champion blogs and films, to promote individual involvement in action against climate change under the theme *Tomorrow's Climate: Today's Challenge*.	Cross-cutting
UK	Education	The academic year 2006/2007 was the year of action on sustainable schools, sponsored by the governmental Department of Education and Skills. It aimed to embed sustainability in all areas of school life.	Cross-cutting
UK	Public sector and sustainable food	The *Government Collaborative Food Procurement Programme* was established to identify how public sector organisations can work together when buying food to achieve improved sustainability.	Consuming
UK	Sustainable public procurement	*Government Buying Standards* (developed by a Cross-Government Stakeholder Group and introduced in 2010) are designed to make it easier for government buyers to buy sustainably. The standards include: •Official specifications that all government buyers must follow when procuring a range of products; •Information about sustainable procurement and how to apply it when buying; •Direct links to websites with lists of products that meet the standards.	Consuming

Country	Type / name of initiative	Description	Domain(s)
UK	Information, awareness raising	The *We're in this together (WITT)* campaign, launched in April 2007, is based on the voluntary commitment of companies to provide attractive, practical and environmentally sound offers to consumers. It aims to make sustainable consumption easier.	Consuming
UK	Improving energy efficiency	The *WarmZone* programme was funded by the local authority Kirklees Council and Scottish Power, a large power company, and implemented in the years 2007-2010. It offered free cavity wall and loft insulation to all citizens.	Living
UK	Education information, awareness raising	Northumberland Care Trust has worked in partnership with Alnwick Garden to develop and implement the "Roots and Shoots" programme to selected schools in North East England. Children have the opportunity to learn how to plant and grow food and to join "growing clubs". These encourage children to eat more fruit and vegetables, as well as to be more active.	Consuming, Health
UK	Grants for low carbon houses	*Low Carbon Buildings Programme* (initiated in 2006) provides grants to householders, communities, businesses, public and charitable organisations towards the cost of installing solar photovoltaic, wind turbines, small scale hydro, solar hot water, ground source heat pumps, air source heat pumps, biomass and, in the future, renewable CHP (combined heat and power), microchip and fuel cells.	Living
UK	Climate change and energy saving scheme	The *CRC Energy Efficiency Scheme* is a mandatory scheme aimed at improving energy efficiency and cutting emissions in large public and private sector organisations. It operates as a "cap and trade" mechanism: organisations buy allowances equal to their annual emissions; a "cap" is placed on the total allowances available to each group of CRC participants; organisations determine the most cost-effective way to reduce their emissions, through buying extra allowances or investing in ways to decrease the number of allowances they need to buy; all the money raised through the allowances is recycled back to participants, according to how well they perform.	Living

Country	Type / name of initiative	Description	Domain(s)
UK	Improving environmental product performance	*Product Roadmaps Defra* is piloting product roadmaps to help improve the environmental performance of ten priority products. The roadmaps aim to: identify the impacts that occur across each product's life cycle; identify existing actions being taken to address those impacts; develop and implement a voluntary action plan to address any gaps.	Consuming
UK	Assessing GHG emissions	The *Product carbon footprinting standard PAS 2050* was introduced in 2008 for assessing the greenhouse gas (GHG) emissions arising from products across their life cycle. Published by the British Standards Institution, it was co-sponsored by The Carbon Trust and Defra. It is the first widely-consulted method that specifically addresses the emerging interest of both organisations and consumers in understanding the carbon footprint of goods and services.	Living/consuming/moving
UK	Waste reduction	*Courtauld Commitment*, a voluntary agreement between the government and the food industry to achieve a demanding net packaging reduction target and substantial cuts in food waste from households and businesses by 2012, by design. Although voluntary, it was brokered by WRAP (Waste & Resources Action Programme) to facilitate commitments by retailers that would avoid regulation.	Consuming

APPENDIX B

LIST OF ACTORS AND INITIATIVES INVOLVED IN THE SPREAD SOCIAL PLATFORM (STATUS OCTOBER 2011)[18]

Country	Organisation
AT	Ecocounselling Europe
AT	Generation Europe Foundation
AT	GLOBAL 2000
AU	Collaborative Consumption
BE	ANPED
BE	Ashoka
BE	BEUC / ANEC, THE EUROPEAN CONSUMERS" ASSOCIATION
BE	ecolife
BE	European Partners for the Environment
BE	EVA vzw
BE/IT	Experentia
BE	Friends of Europe
BE	Generation Europe Foundation
BE	Low Impact Man
BE	Minister of sustainable development
BE	Pantopicon
BE	RLKM
BE	Strategic Design Scenarios
BE	Université Catholique de Louvain
BE	VODO
BE	VITO
BG	Bulgarian Housing Association
CA	One Earth

18 Not all participants of the SPREAD online community are included in this list.

Country	Organisation
CG	Kondakis
CH	Fair Labor Association
CH	Impact Investment Consulting
CH	Quadia Impact Finance
CH	SLF - Sustainable Luxury Forum
CH	The Value Web
CH	WBCSD
CH	World Economic Forum
CH	World Business Council on Sustainable Development
CZ	National Institute of Public Health
EU	EuroHealthNet
EU	European Commission, DG Energy, DG Environment, DG Research & Innovation,
EU	Eurosif
DE	:response
DE	2nd floor
DE	A.T. Kearney GmbH
DE	adelphi research
DE	Agenda 21 Hannover
DE	Alanus University
DE	Ashoka Changemaker City Wuppertal
DE	Ashoka Germany
DE	Autostadt
DE	beeh_innovation
DE	Bergische Entwicklungsagentur GmbH
DE	BLUEWATER CAPITAL GmbH
DE	Borderstep Institute for Innovation and Sustainability
DE	brexnet Top Management Consulting
DE	BSH Bosch und Siemens Hausgeräte GmbH
DE	Büro Dodo Schulz
DE	CENSET
DE	Cologne Graduate School in Management, Economics and Social Sciences (CGS)
DE	Confederation of Indian Industries - Centre for Excellence in Sustainable Development
DE	connosco consulting e.V.
DE	Corporate Sustainability
DE	Coworking Space GarageBilk
DE	CSCP
DE	CSCP - SWITCH-Asia Network Facility
DE	CST Change Support Team

Country	Organisation
DE	Deloitte & Touche
DE	Deutsche Bundesstiftung Umwelt
DE	Deutsche Telecom AG
DE	Director Colabora
DE	e-fis
DE	Ecologic Institute
DE	ecoScan
DE	ecosign/Akademie für Gestaltung
DE	empirica GmbH
DE	Endeva
DE	European Association of Development Research and Training Institutes (EADI)/ Bonn Sustainability Portal
DE	Fairtrade International
DE	Federal Centre for Health Education (BZgA)
DE	Federal Environment Agency of Germany
DE	FH-Potsdam
DE	Firmenich GmbH
DE	Florian Dieterle Markenmanagement
DE	folkwang university of the arts
DE	Forum für Business Design und Creative Leadership / Dezentrale / Cow-orking Wuppertal
DE	FuldaerWeg.de
DE	Futureparty.net
DE	Gesamtverband der Aluminiumindustrie
DE	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
DE	Green Economy Center Langenfeld
DE	Gruner + Jahr Wirtschaftsmedien
DE	GS1 Germany GmbH
DE	Henkel AG & Co KG aA
DE	Hochsssechule Bonn Rhein Sieg
DE	Ideen3 e.V. / Universität Witten/Herdecke
DE	independent - market place
DE	Institute for Environmental Communication
DE	ITT-Terma
DE	JOLOCOM
DE	kisd
DE	Konrad & Schmidt OHG
DE	Lebensunternehmer eG
DE	Lernprozesse für Nachhaltige Entwicklung
DE	Lobomob

Country	Organisation
DE	Ministry for Climate Protection, Environment, Agriculture, Nature Conservation and Consumer Protection of the State of North Rhine-Westphalia (Germany)
DE	Mundraub (mundraub.org)
DE	Netzwerk für Umweltpädagogik
DE	ninehours
DE	nova-Institute
DE	Institut für Forst- und Umweltpolitik der Albert-Ludwigs-Universität Freiburg
DE	Oeko-Institut
DE	Phase II
DE	Philips Research
DE	Plamper Consulting
DE	PreMAnet
DE	projecta köln
DE	PUMA AG
DE	pvXchange GmbH
DE	REWE Group
DE	Schöne neue Welt delüx!
DE	sedes research, Köln International School of Design
DE	Swane
DE	Technical University Munich
DE	Technical University Dortmund
DE	tractor. bureau für kommunikation
DE	Transition Town D/A/CH
DE	triple innova
DE	UNEP/WI Collaborating Centre on Sustainable Consumption and Production (CSCP)
DE	Universität Frankfurt am Main - Student
DE	Universität Witten/Herdecke, oikos, denkleister
DE	University of Applied Sciences Aachen FB Gestaltung
DE	University of Duisburg-Essen
DE	University of Siegen
DE	University of Vechta
DE	Utopia AG
DE	Verbraucherzentrale NRW
DE	Volkswagen AG
DE	WeGreen - Die Nachhaltigkeitsampel
DE	WiZable GmbH
DE	Wuppertal Institut für Klima, Umwelt, Energie GmbH
DE	yellow design | yellow circle

Country	Organisation
DE	Yesil Cember / BUND (FoE)
DE	Zukunftspioniere GbR
DK	Danish Environment Protection Agency
ES	Barcelonya
ES	CAD
ES	Centro de Alianzas para el Desarrollo
ES	DENOKINN
ES	Regional Activity Center for Cleaner Production (CP-RAC)
ES	Ecoinstitut Barcelona
ES	Enviu - Innovators in Sustainability
ES	Funky Projects
ES	Ihobe, Basque Environmental Agency
ES	Megadvise/MegamCapital
ES	Ministry of Industry
ES	Tecnalia
ES	Urban Ecology Agency of Barcelona
EU	AVERE European Association for Battery, Hybrid and Fuel Cell Electric Vehicles
EU	CECODAS Housing Europe
EU	CEN- CENELEC management centre
EU	Coalition for Energy Savings
EU	European Environment Agency
EU	EEB – European Environmental Bureau
EU	EREC – European Renewable Energy Council
EU	ETUC – European Trade Union Confederation
EU	European Hydrogen Association
EU	Federal Public Service - environment
EU	ICLEI - Local Governments for Sustainability
FI	Aalto University, School of Art and Design, Department of Design
FI	BM Design Oy
FI	Finnish Association for Nature Conservation
FI	Netcycler
FI	Nokia Corporation
FI	Rautakesko Ltd
FI	Demos Helsinki
FR	Ademe
FR	BSR
FR	IDDRI
FR	mutual benefits
FR	PPR Luxury Group
FR	Roule Ma Frite 17

Country	Organisation
FR	Saint-Gobain - Insulation
FR	Sustainable Design Solutions
FR	Sensibilities
FR	United Nations Environment Programme
FR	YVES ROCHER
global	DOW
global	Emirates Wildlife Society / WWF
global	International Union for health Promotion and Education
global	The Club of Marrakesh
global	UNCTAD
HU	GreenDependent Sustainable Solutions Association
HU	Regional Environmental Center for Central and Eastern Europe
IE	Trinity College Dublin, Ireland
IN	Confederation of Indian Industries - Centre for Excellence in Sustainable Development
IT	Greenbean
IT	Italian Association for Women in Development - AIDOS
IT	Panorama
IT	Politecnico di Milano
IT	LifeGate Group
IT	UNIMI - Recco from Juliet Schor, Centre for the New American Dream
JP	National Institute for Environmental Studies
LU	Luxemburg Bank - Fund for Good
LV	Ekodoma
MK	KOCKA Training Institute
MK	Milieukontakt International, Local Office Macedonia
NL	Dutch Energy Agency
NL	FARO
NL	CSR Consulting Turkey
NL	Energy research Centre of the Netherlands
NL	GRI
NL	Henkel
NL	ICIS
NL	Knowmads
NL	Maastricht University
NL	ModelMinds Company
NL	Netwerk Bewust Verbruiken – Plan C
NL	NIGZ - Netherlands Institute for Health Promotion
NL	Rabobank Rotterdam
NL	Rank a Brand e.V.

Country	Organisation
NL	RMC
NL	Stichting 8
NL	Vrije Universiteit Amsterdam - IVM
NL	Transition Towns
NL	Upfrnt
NL	Unilever
NO	Bellona Europe
PH	Association of Development Financing Institutions in Asia and the Pacific
PL	Centre for Systems Solutions
PL	Grupa eFTe Warszawa
PL	National Institute of Public Health
PL	Orgmasz Warszawa Poland
PL	Wroclaw University of Economics
SE	IIIEE at Lund University
SE	DEKRA Industrial
SE	IKEA of Sweden AB
SE	LUMES
SE	Royal Institute of Technology, Architecture School
SE	The International Inst. for Industrial Environmental Economics at Lund University
SE	Swedish Society for Nature Conservation
SE	AtKisson Group
SE	KTH
SE	Swedish Environmental Protection Agency
SE	UNCTAD
SI	Umanotera, Slovenian Foundation for Sustainable Development
SK	Centre of Environmental and Ethical Education Z.I.V.I.C.A
TR	Turkish Business Council for Sustainable Development
UA	Green Dossier
UK	Consumers International
UK	Collaborative Consumption
UK	Do The Green Thing
UK	Ecomodo
UK	Ethical Fashion Forum
UK	forum for the future
UK	Futerra Sustainability Communications
UK	Green Alliance
UK	Homes and Communities Agency
UK	London School of Economics
UK	one earth innovation

Country	Organisation
UK	Personal Registration
UK	Pidgin Perfect
UK	SEED Initiative
UK	Shell International
UK	the centre for sustainable design at uca
UK	UnLtd
UK	WWF-UK
UK	Green Alliance
US	Collective Invention
US	First Solar
US	Share it

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