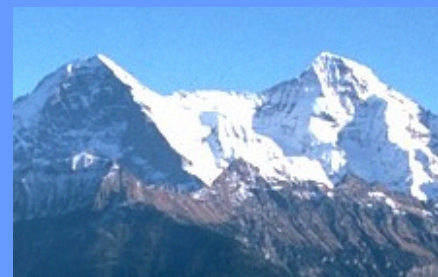


Consumption Opportunities

Strategies for change

A report for decision-makers



Sustainable Consumption

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We welcome your feedback to this document, and your participation in the activities described and suggested within it. Please forward any comments to consumption@unep.ch.

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Foreword



Sustainable consumption was raised as one of the key challenges of sustainability for the first time at the Rio Earth Summit in 1992. Since then progress on tracking consumption patterns, and devising the tools to change them, has been slow. This report presents UNEP's policy responses to the challenge of sustainable consumption. It has been prepared in part as a contribution to the implementation of Agenda 21 Chapter 4, and is aimed at decision-makers in government, business and civil society in general.

Since its inception in 1998, UNEP's sustainable consumption programme has focussed on the provision of information, education, training and outreach. In addition it has sought to bring various stakeholders into the sustainable consumption debate and identify their own particular challenges and opportunities. Youth, the advertising industry, the 'global consumer class', and the business sector are some of the sectors that have participated in UNEP's work on sustainable consumption over the past three years.

If we know what sustainable consumption should look like, and we know who ought to be involved, then how do we get there? One of the reasons for the slow uptake of the sustainable consumption challenge has been a lack of clarity, understanding and confidence around the question of sustainable consumption. *What is 'sustainable consumption'? How do the various aspects fit together? Isn't it about just having less?* These are some of the questions that this report tries to answer.

In *Consumption Opportunities*, sustainable consumption is presented as a means of partnership and opportunity leading to increased quality of life for all. By focussing on the core challenges for each major agent involved, *Consumption Opportunities* invites governments, businesses, consumers and citizens to see sustainable consumption as one of the key pathways to sustainability. The balance of responsibilities, and particular challenges, arising from the different consumption patterns in developed and developing countries is also one of the issues assessed here.

Consumption Opportunities will serve as a general resource document, and also as the basis for a series of workshops and briefings on consumption for Europe, focussing on the special needs and challenges of the 'transitional' economies of Eastern Europe. I call on all relevant stakeholders, to embrace the strategic policy message in this report and to meet the challenge of sustainable consumption.

A handwritten signature in black ink, appearing to read 'Klaus Töpfer', followed by a horizontal line.

Klaus Töpfer
UNEP Executive Director

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Executive Summary

Consumption Opportunities // *Purpose, Targets, Effects*

Purpose

This report's purpose is:

- to recap the development of the sustainable consumption debate since the Rio Earth Summit in 1992.
- to outline the core issues of sustainable consumption.
- to identify 'critical problems' which have hampered progress on sustainable consumption.
- to review the tools, policies and actions which have been suggested for delivering sustainable consumption.
- to suggest how sustainable consumption in practice can deliver social, cultural, economic and environmental benefits.

The core of the report puts forward a strategic model which may help overcome some of the problem issues of the debate and bind together the different policies which have been developed. It addresses consumption from various angles, encourages change, and assigns responsibility for the implied changes among the major agent groups.

Target readership

The expected readership is:

- government and industry decision-makers.
- policy-shapers at all levels.
- academic researchers.
- civil society leaders and organisers.

Consumption Opportunities is careful not to propose only one successful path towards sustainable consumption, nor to focus on the actions required by only one major group. Instead, by analysing the change required in strategic terms, and developing actions based on incentives and shared responsibility, it hopes to engage all relevant agents and further their understanding of and commitment to the promotion of sustainable consumption.

Effects

The desired effects of this report are:

- to invite government, industry, consumers, and society to work together to realise new mutual opportunities in the drive for sustainable consumption.
- to encourage society at large to engage in lasting and substantial debate about sustainable consumption, and the changes required.
- to provide a detailed and flexible strategic platform for policy and action programmes on sustainable consumption.
- to provide a starting-point for 'action-oriented', 'multi-agent' research.

Purpose

- Debate since Rio
- Core issues
- 'Critical problems'
- Tools, policies, actions
- Benefits
- Strategic model

Readership

- Government and industry decision-makers
- Policy-shapers
- Researchers
- Civil society organisers

Effects

- Mutual opportunities
- Lasting, substantial debate
- Strategic platform for policy and action
- Action-oriented research

Section I // Outline

Section 1

- Policy context of SC
- Global aims
- Definition, perception, conception
- 'Critical problems'
- Opportunities
- Quality of Life
- Impacts and response

Section I introduces and outlines the challenges of sustainable consumption. It highlights the **intergovernmental policy context** developed since the 1992 United Nations Conference on Environment and Development (UNCED) – popularly known as the Rio 'Earth Summit' and presents the global aims of sustainable consumption.

Subsequently, this section summarises the issues of **definition, perception and conception** of sustainable consumption from which **five critical problems** have emerged. These have thus far impeded an integrated movement towards more sustainable consumption patterns. The core strategic frame of the document, based on **Dematerialisation and Optimisation** of consumption patterns, is sketched, along with the network of **distributed responsibility**, which is coordinated among the major agents. Timeliness of **action**, potential **opportunities** and benefits, as well as a re-positioning of **quality of life** are discussed as the ultimate goal of sustainable consumption.

By summarising the **environmental and social impacts** of current consumption, the pressing need for this debate is made more clear. Here the **advocates of change** in consumption behaviour are identified, including their response to the Rio mandate so far.

Section II finishes with an analysis of two special issues, central to the sustainable consumption challenge:

- differences and convergence between consumption in Northern and Southern countries; and the changing consumption patterns of the 'transitional' economies of Eastern Europe.
- the relationship between consumption and international trade.

Section II // Strategy

Section 2

- Strategic framework
- Dematerialisation
 - Industry gains
 - Consumption patterns not disturbed
- Optimisation
 - Different Consumption
 - Conscious Consumption
 - Appropriate Consumption
- Social, environmental, economic benefits
- 4 summary questions
- North, South, East, West
- Trade and Consumption

Section II sets out a strategy to address the challenge of sustainable consumption, featuring a **modular strategic framework** to assess and implement policies for sustainable consumption. This framework is built around two principles:

- **Dematerialisation** of products and services.
- **Optimisation** of consumption patterns.

Dematerialisation focuses on:

- tracking **throughput** of materials and energy in industrial and consumption processes.
- cost **internalisation** to increase economic efficiency.
- major increases in **resource productivity**.
- addressing **needs and functionality** rather than the product alone.

The scope for **industry gains** are significant, and consumption patterns need not seriously be disturbed in the process of *Dematerialisation*.

The limitations, both theoretical and practical, of dematerialising products and services necessitate the development of a suite of *Optimisation* approaches and techniques. These propose various **realignments of consumption behaviour** in favour of economic efficiency, environmental security, and enhanced quality of life.

Optimisation implies the promotion and development of:

- **Different Consumption**, through changes in infrastructure and choice mainly engineered by government actions and investment.
- **Conscious Consumption**, releasing more quality of life and less environmental cost, through more considered 'choosing and using' on the part of confident, educated consumers.
- **Appropriate Consumption**, involving deep and broad debate in social circles about the type and level of consumption practised, and whether quality of life (particularly in civic, cultural and religious terms) is increased or impeded by consumption behaviour and its effects.

For transparency and flexibility, the strategic approach of *Dematerialisation* and *Optimisation* has been synthesised into **four questions**, and for each the balance of responsibility among the various major agents is suggested. Below, the table of these strategic elements is presented.

Strategic Elements

Major Agents

1. Dematerialisation – Efficient Consumption <i>What factor of increased resource productivity can be achieved in each product and service?</i>		Industry Government Consumers
2. Optimisation – Different Consumption <i>What changes in choices and infrastructure will satisfy consumer demand more sustainably?</i>		Governments Industry Consumers
3. Optimisation – Conscious Consumption <i>How can consumers increase their quality of life by 'choosing and using' more wisely?</i>		Consumers Industry Government
4. Optimisation – Appropriate Consumption <i>Are consumption <u>levels</u> sustainable? Is consumption the best way to achieve every type of quality of life?</i>		Society at large Communities Citizens

Section III // Policies & Opportunities

Section III of the report presents a **table of tools, policies and actions** which have been proposed in the policy debate for bringing on sustainable consumption as mapped out by the *Dematerialisation/Optimisation* frame. The text elaborates on these, discussing how they may be brought into play, what challenges may be anticipated, current experience, and the interlocking nature of responsibility among the major agents.

Finally, short **model descriptions** of how sustainable consumption might function across the major economic sectors are presented; and a summary of the **opportunities** to be realised by a proactive seeking of sustainable consumption is laid out at the end, before the report's summary and **recommendations** for next steps.

Section 3

- Tools, policies, actions
- Modelling change
- Opportunities
- Recommendations

Abbreviations and Acronyms

CP5	UNEP's Fifth High-Level Cleaner Production Seminar
CSD	Commission for Sustainable Development
DTIE	Division on Technology, Industry & Economics (UNEP)
EM	Environmental Management
EPR	Extended Producer Responsibility
ETR	Environmental Tax Reform
FSC	Forest Stewardship Council
HDI	Human Development Index (UNDP)
IEPAC	Industry and Environment Programme Activity Centre (UNEP)
IIED	International Institute for Environment and Development
ISEW	Index of Sustainable Economic Welfare
IWPCPP	International Work Programme on Changing Consumption and Production Patterns (CSD)
LCA	Life-Cycle Assessment
MIPS	Material Input Per Service-unit achieved
MSC	Marine Stewardship Council
NPO	Non-Product Output
OECD	Organization for Economic Cooperation and Development
PSS	Product-Service Systems
RET	Renewable energy technology
ROE	Regional Office for Europe
UNCED	United Nations Conference on Environment and Development
UNEP	United Nations Environment Programme
UNEP IE	United Nations Environment Programme Industry and Environment
UNDPCSD	United Nations Division for Policy Coordination on Sustainable Development

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I. Sustainable Consumption: An Outline

1) Introduction

Beginnings // What's it about?

Sustainable Consumption?

- Possible, through positive change
- Many paths
- Strategic approach required
- Quality of life
- Consumers are more enquiring
- What is the proper role of consumption in society?
- Taking action now

Sustainable consumption is possible. But it requires *change* – change that can be a positive, innovative experience. To effect this change, it calls for knowledgeable and committed agents at all levels of decision-making.

There are many paths to sustainable consumption. For example, UNEP works with governments, industry and civil society. It helps them identify the forces underlying unsustainable consumption, and thus better understand how to change consumption patterns and create new social and economic opportunities. This approach introduces sustainable consumption in a guided, constructive manner to benefit society without creating undue disruptions.

This report presents a strategic framework which can assist decision-makers in developing the broad approach required. It lists many methods and policy tools available to help industry and governments and urges them to recognise and seize the opportunities offered by sustainable consumption.

“Strategies should stress opportunities and benefits.... Sustainable consumption can be promoted in terms of improved quality of life.[...] Improving consumption may be one of several mechanisms for social transformation that have few losers and a wide array of associated benefits.”¹

Ultimately, sustainable consumption is about *quality of life*. Economic consumption is optimal only insofar as it improves the quality of life for individual consumers and for society as a whole. This report concentrates on changes that *maintain or enhance* such quality of life in real terms.

“The [...] focus of sustainable consumption [is] more on the quality...of consumption and less on the quantity.”²

Consumers themselves are becoming more demanding in their consumption. In purchasing goods and services, quality of life is a strong objective and is being delivered in important new ways. As UNEP Executive Director Klaus Töpfer has expressed it:

“It is becoming more evident that consumers are increasingly interested in the world that lies behind the products that they buy. Apart from the price and quality, they want to know how and where and by whom the products have been produced.”³

In fact, a debate on sustainable consumption may include a questioning of the role of consumption in delivering quality of life. Some argue that human well-being at the civic, cultural and religious levels is not best serviced by increased consumption.

“People’s needs can also be satisfied in other ways than by more goods.”⁴

Finally, sustainable consumption – now – is about taking stock of debates already advanced, building frameworks and strategies for moving ahead, and taking action.

“[OECD] member countries are implementing a range of separate, albeit sometimes linked, measures to affect consumer behaviour but they have yet to develop coherent strategies to address unsustainable consumption patterns.”⁵

Background // *Recognising the problem*

At the United Nations Conference on Environment and Development (UNCED) in 1992, the international community publicly recognised that current global patterns of consumption are not sustainable. It warned that excessive demands were being made on the planet's finite stock of resources and on its capacity to absorb the waste products of human activities. Chapter 4 of the major document to come out of Rio, 'Agenda 21', called 'Changing Consumption Patterns', gives a strong mandate for policy development in this area.

"4.7 Action is needed to meet the following broad objectives:

- a. To promote patterns of consumption and production that reduce environmental stress and will meet the basic needs of humanity;*
- b. To develop a better understanding of the role of consumption and how to bring about more sustainable consumption patterns."*

Unsustainable consumption of natural resources has two aspects: *overconsumption*, associated with the economically affluent industrialized countries of the 'North', and environmentally unsustainable *underconsumption*, linked to the less developed countries of the 'South'. In the latter, poverty and lack of infrastructure impair these countries' capacities to look after their own people and natural environments.

Since Rio, much work has been done to devise policies that mitigate the adverse effects of both over- and underconsumption.⁶ New ways of consumption have been promoted to maintain and enhance the quality of life without incurring irreversible environmental and social costs.

Present Situation // *Finding solutions*

The sustainable consumption debate has now completed its first phase in which core concepts were developed and refined, and policy instruments proposed. The second phase, to which this report belongs, involves integrating the proposed policies, developing workable strategies and managing change.

The UN Commission for Sustainable Development (CSD) - the key intergovernmental forum - has already accorded priority status to the task of 'changing consumption patterns'. In 1995, it set up an International Work Programme on Changing Consumption and Production Patterns (IWPCPP). This led to the further recognition of the need for sustainable consumption (at *Earth Summit II* in 1997) as an 'overriding issue', and a 'cross-cutting theme' in sustainable development.⁷ Such recognition has emerged despite differences among states over the nature and extent of consumption-related environmental damage, and the appropriate tools to remedy it.

Indeed, thanks to its far-reaching potential benefits, sustainable consumption may be a promising policy area where some long-standing barriers of distrust between developed and developing countries can be overcome and replaced with economic, environmental and social opportunities for mutual benefit.

The 'Rio+10' World Summit on Sustainable Development, to be convened in June 2002 in Johannesburg, South Africa, will assess progress made over the past decade since the 1992 Earth Summit. Meanwhile, national governments and involved stakeholders must address the challenge of sustainable consumption with increasing urgency.

Not only governments but also industry has much to gain from participation in sustainable consumption initiatives. As UN Secretary-General Kofi Annan said at the 1999 launch of a 'Global Compact' between business and the UN,⁸ the time is ripe for collaboration. The academic and NGO communities also have vital roles to play in achieving sustainable consumption. On the one hand, research is needed to better grasp the technical and sociological aspects of the issues at hand. On the other NGO advocates provide the clarity and forcefulness required to sustain a thorough debate. Together they can inform and inspire the whole debate on sustainable consumption.

The Problem

- Overconsumption
- Underconsumption

Finding Solutions

- CSD declares that sustainable consumption is:
 - "Overriding priority"
 - "Cross-cutting issue"
- Potential source of mutual benefit to North & South
- Source of opportunities for industry
- Debate informed by academia and NGOs.

2) What is 'Sustainable Consumption'?

The Challenge // *Finding a definition*

Defining Sustainable Consumption

- Simple/advanced definitions
- Demand-side lever – and beyond
- Five critical problems:
 - Sustainable consumption vs. Sustainable development?
 - Too wide a range of policies?
 - Ethical vs. material?
 - Moralism and negativity?
 - 'Consumption' as limiting concept?
- Systemic SC:
 - Inversion of SD
 - Starts with consumers, leads to change in to all sectors

Current Definitions

*"Sustainable consumption is not about consuming less, it is about consuming differently, consuming efficiently, and having an improved quality of life. It also means sharing between the richer and the poorer."*⁹

The basic approach to the phrase 'sustainable consumption' is to take standard economic 'consumption', the purchase of goods and services, and to examine how this can be made environmentally 'sustainable'. This approach to 'sustainable consumption' is a natural extension of efforts to ensure 'sustainable production'.

Such a definition seems workable in most contexts. An advanced definition was first developed at the major Oslo Symposium on sustainable consumption in 1994, additional conceptual work has been done by the OECD and others, and in 1995 the CSD formally adopted the following working definition for sustainable consumption:

*"The use of services and related products which respond to basic needs and bring a better quality of life while minimising the use of natural resources and toxic materials as well as the emissions of waste and pollutants over the life-cycle so as not to jeopardise the needs of future generations."*¹⁰

And yet even with this definition, precise though it may seem, serious drawbacks have been observed.¹¹ The subsequent paragraphs will analyse these problems and present responses.

Emergent problems

In the first place, the phrase 'sustainable consumption' refers both to the economic demand behaviour of consumers, and to the 'consumption' of resources which takes place to feed that demand. Distinguishing these two is crucial, because the correlation may not be straightforward. Furthermore, there are both perceptual and conceptual problems which will be presented here and summarised in a table showing the '5 critical problems'.

To date, in any case, despite the work on formulating and refining definitions of 'sustainable consumption', and elaborating concepts which may be a part of it, sustainable consumption remains poorly understood and little implemented. Such lack of clarity and action may not in the end only be founded upon inadequate *definitions* of 'sustainable consumption'. Public and political *perception* and a narrow and limiting *conception* of the role of consumption may be equally serious in hindering the progress of sustainable consumption.

In the first place, sustainable consumption suffers from negative perception, and not just at the level of the consumer. As DTIE Director Jacqueline Aloisi de Larderel pointed out at the Berlin business opportunities meeting:

*Developing countries as well as industries viewed the sustainable consumption program with scepticism....But for developing countries sustainable consumption does not mean not consuming. It means quite the contrary, namely leap-frogging. It means achieving a better quality of life for all, it means sharing between the richer and the poorer.... Industries fear losing markets. In reality, sustainable consumption will bring new business opportunities. The use of tools such as life-cycle assessment and eco-labelling should help identify such opportunities."*¹²

But more importantly, sustainable consumption is hampered by a limitation of *conception* – that is, whichever definition is applied seems inadequate to cover the range of considerations and actions which are ultimately required.

In this context, one can isolate the following *five critical problems* blocking the implementation of sustainable consumption, separate from questions of definition, of which the first four are issues of perception, and the last is a problem of conception.

Five Critical Problems of Sustainable Consumption	
1)	Poorly understood relationship between sustainable development and sustainable consumption. ¹³
2)	Confusing diversity of differing concepts, tools and policies. ¹⁴
3)	Difficult policy balance between material and ethical issues.
4)	Vision of sustainable consumption as a moralistic, negative exercise with significant economic risk.
5)	Lack of strategies and action extending beyond the conventional economic considerations, to include individuals as <i>citizens</i> , not just mere <i>consumers</i> .

It is these political obstacles, in addition to substantive and analytic challenges, which this report proposes to address.

Proposed Responses

The challenges represented by these critical problems are met both singly, in the detail of the report, and together by the overarching strategy around which the content is developed. Here are suggested five responses, which individually address and resolve each of the aforementioned problems, while together they form the basis of the overarching strategy presented in this report:

Five Responses	
1)	Differentiating between sustainable consumption and sustainable development.
2)	Packaging disparate policies into one overarching strategy.
3)	Bridging the gap between different issues and dimensions of sustainable consumption.
4)	Profiling sustainable consumption as an opportunity rather than a constraint.
5)	Exploring other perspectives of sustainable consumption beyond the purely economic.

‘Systemic’ Sustainable Consumption as ‘inversion’ of Sustainable Development

Sustainable consumption in practice has usually implied reducing resource consumption by changing the consumer’s purchasing behaviour. While this aspect – called the ‘demand-side lever’ – remains a crucial tool in altering consumer behaviour, modifying household/private demand is not enough.¹⁵

Fully sustainable consumption must also incorporate changes directed specifically at governments and industry. Recalling that governments themselves are major independent consumers of goods and services – spending up to 25% of GDP in some OECD countries – they should examine their own consumption patterns, not only those of the individual consumer.¹⁶

As for industry, in the absence of suitable incentives and regulation, it can waste energy and resources, and pollute the environment in ways only indirectly related to consumer behaviour. In such instances, the demand-side lever will not exert enough pressure to bring about more sustainable resource use.

The strategic content of this report lies in its elaboration of the concept of ‘systemic’ sustainable consumption. While similar to the demand-side lever in that it implies necessary changes in terms of consumer behaviour and related resource use, it also incorporates the changes in autonomous consumption of goods and services (and therefore resources) by industry and government themselves.

It may be useful, moreover, given the breadth of issues incorporated by this 'systemic' sustainable consumption, to see it as an 'inversion' of the hierarchy of sustainable development as a whole, rather than simply a part of it. In other words, sustainable consumption in this 'systemic' sense covers most of the same ground as sustainable development, but directs its efforts to the 'other end'. It engages, economically and socially, from the bottom up, using the actions and perspective of consumers and citizens as its starting point, rather than the big-picture assessments of the global environment of sustainable development discourse. Some may say that sustainable development itself incorporates the local: this is true, but the debate has started with the global level, and in real terms much of remains there. Indeed, one of the shortcomings of sustainable development since the Rio Earth Summit has been the difficulty in practice of bringing down to the level of communities the visions and commitments elaborated in intergovernmental circles. A 'systemic' approach to sustainable consumption is likely to overcome this, by starting at the personal and branching out to the broader issues.

Programmes for sustainable consumption need to be rooted and enacted at the regional and local level, engaging all relevant stakeholders. The potential for cooperation is great. Motivation, funding, tools and more can come from national governments and support needs to come from multinational industry. But economic consumption, in terms of individuals and households, remains by nature a local activity – despite the globalised supply chains and brand identification that nowadays may link the world's economies together. This is the real-world 'inversion' of sustainable development – starting at the local and branching out to the global – that is implied by 'systemic' sustainable consumption.

While the various problems of perception and conception will be treated more fully below, this report will not dwell further on the problem of defining or conceptualising 'sustainable consumption' per se. Instead the strategies and policies here will be focussed upon what sustainable consumption must *actually deliver in real terms*¹⁷, and be guided by the single principle of *quality of life*¹⁸ – the ultimate aim of all consumption practices.

The Ultimate Goal // *Quality of life*

Quality of Life

- Material necessities
- Society, culture, religion
- Determinants: time, health, rest, low-stress

Consumption in a Sustainable World, the report of a 1998 workshop hosted by the Norwegian Ministry of Environment in Kabelvåg, positioned sustainable consumption as a search for increased quality of life, both in developed and developing countries. This workshop broke new ground in seeking to draw together the complex threads of the sustainable consumption tapestry, focussing on the humanistic, quality of life dimension and proposing tools and paths for action.

Before Kabelvåg, much of this type of work overlooked the crucial consideration that consumption – indeed all economic activity – has a purpose. Economists call this 'maximising utility'. Others, however, refer to it more straightforwardly as 'enhancing the quality of life'. Indeed, sustainable consumption already provides a good framework to achieve the ultimate goal of improved quality of life. As the UNDP Human Development Report 1998, which deals specially with consumption, puts it:

*"Consumption can contribute much to human development but to deliver its potential it must be shared, strengthening, socially responsible and sustainable."*¹⁹

While there are no universal criteria for what constitutes 'quality of life' among different individuals and cultures, there are some common features. Consumption should be directed at enhancing these. For example, quality of life is impossible without satisfying basic human survival needs, such as food, shelter and clothing. Alongside these material basics, most cultures consider such social 'essentials' as companionship and community membership indispensable. Furthermore, cultural and religious practices provide uniquely human contributions to the quality of life. Experts have developed these themes into systematic principles of human needs.²⁰

However, in addition to quality living itself exist certain less well recognised 'determinants' which condition the experience of quality of life, and which are no less to be demanded as the proper outcomes of consumption. These include: individual health; sufficient time for rest, recreation, community and cultural participation, and opportunities for non-material personal development; low-levels of work-related stress, and high-levels of job-satisfaction.

In most developing countries, the standard of living and quality of life can be improved through increased but efficient consumption. Yet in developed countries where consumer demand is more than met, an understanding is beginning to emerge that quality of life may be lacking due to deficiencies of these 'determinants' noted above, without which the consumption achieved cannot efficiently deliver quality of life. We may say it is no longer controversial to suggest that mere consumption of materially-based goods and services is not sufficient for human well-being. The state of the physical, natural, social, and cultural, community contexts – quite literally, the environment – is crucial to the real, human validation of consumption practices.

Therefore, in the short term, strategies for establishing sustainable consumption need to be charged with the responsibility of delivering *increasing* quality of life for all while *decreasing* total material throughput. This separation of quality-delivery and material use has been described as the 'decoupling' of value and matter. In the long term, unsustainable consumption must be adapted by a gradual remodelling of economic and social processes along these lines, guided by quality considerations.

All of this can take place while debate continues regarding quality of life, its characteristics, and the extent to which consumption contributes to it – or detracts from it. Since it is inconceivable that any debate on quality of life will deliver simple conclusions in a short time-frame, assumptions and actions must be taken now, on the basis of sensitivity and common sense. Unsustainable consumption requires us to develop 'best possible' solutions now, rather than 'perfect' solutions when it may be too late. This is to say, sustainable consumption, no less than other aspects of sustainability, works on the basis of the 'precautionary principle'.

Three immediate goals // *Changes in consumption*

Sustainable consumption, therefore, has three major goals:

- 1) **Less** Radical reduction of aggregate material throughput in developed economies.
- 2) **More** Sustainable economic development in developing countries which responds to needs.
- 3) **Ethical** Changes in global patterns of consumption, based on re-considered values and cultural practices in the North; access and redistribution in the South.

Three Goals	
•	Less
•	More
•	Ethical

Realising these objectives will require co-operation between stable industrialised societies and developing states, supported by visionary yet concretely committed programmes at the level of international and national government. Tackling these challenges will neither be easy nor straightforward.

However, progress can be made by establishing clear and workable action plans, taking into account the strategy tools outlined in this report. The incentive is there: systematically addressing the challenge of sustainable consumption will enable countries to enhance industry performance and social benefits in both the short and long term.

A Strategic Framework // *Dematerialisation and Optimisation*

The extensive range of policies which have been proposed in the debate as elements of a sustainable consumption programme can be systematically integrated under two headings:

- Dematerialisation.
- Optimisation.

Strategic framework	
•	Dematerialisation
•	Optimisation

This conceptual distinction is the seminal basis of this document and these two concepts will provide the strategic framework for the discussion on sustainable consumption in Section II.

Dematerialisation of economic consumption means the reduction of the total material and energy throughput of any product or service, and thus the limitation of its environmental impact. This includes reduction of raw materials at the production stage, of energy and material inputs at the use stage, and of wastes at the disposal stage. (For comments on alternative uses of the term *Dematerialisation*, see endnote.)²¹

Optimisation of consumption means the institution of new patterns of consumption which themselves act to limit excessive resource use, whilst promoting enough resource use in the less developed countries. *Optimisation* of consumption entails a redevelopment of the material and institutional infrastructure upon which economic and social practices are based – in order to create different choices for the consumer – in addition to conscious ‘choosing and using’ in consumption as it takes place. Ultimately, *Optimisation* implies a questioning of the driving forces and total levels of consumption.

These two factors – *Dematerialisation* and *Optimisation* – work in synergy with each other, and can be balanced to address sustainable consumption issues in multiple contexts: government, industry and civil society.

Incremental implementation // *How to do it*

Assessment and Implementation

- Indicators
- Policy selection
- Incremental implementation
- Sub-national, local implementation
- National SC coalitions

The first requirement of a sustainable consumption strategy is the development of indicators to quantify consumption levels and patterns and their environmental impacts, as well as to assess the opportunities for each major agent: government, industry and civil society. *Unlocking Trade Opportunities*, a pioneering sectoral study undertaken by the IIED and CSD, highlights some of the gains to be realized.²² Secondly, potential economic and social actions and policies must be adjusted to the specific problems of the relevant unsustainable practices. This matching process might select both *Dematerialisation* and *Optimisation* policies, assessing each for its capacity to meet sustainability objectives. Thirdly, Given the cross-sectoral nature, and economic and social sensitivities, of sustainable consumption, a phasing-in of sustainable consumption policies is crucial. Therefore, implementing a strategy that has been developed and selected in this way is doubtless best managed by a process of *incremental implementation*.

Finally, the targeting of specific stakeholders in specific situations and development of programmes and projects, though in the context of a broader, national or international plan, will need to take place at the sub-national and local level. Creating action ‘coalitions’, multi-stakeholder groups focussing on key shifts, may be a good way to facilitate change.

Three Major Agents // *Who will do it*

Three Major Agents

- Governments
- Industry
- Civil society

Commonly, in the implementation of policy, the major sectoral agents are identified as governmental, industrial and civil. A fourth category, academia, though rarely positioned to effect change directly, has a special role in enabling us to understand the social complexities of how consumption behaviour is formed and how consumers can be encouraged to change it.

Within each major implementation group, sub-sectors can be isolated: within government, a major sub-element would be local government (in particular municipal authorities in large urban areas), and within industry (which includes commerce and retail), one can consider financial services and the media as groups with special roles to play in sustainable consumption. And within civil society, private/household consumers and NGOs are clearly the major constituents. But other groups can play a role, including trades unions, religious groups and ad-hoc community-based organisations. Finally, civil society as a whole needs to take ultimate responsibility for deciding the role of consumption in daily life.

Sustainable consumption is possibly the most complex and multi-faceted of the policy areas within sustainable development. This means that whilst identifying sectoral agents is necessary and useful, it is also important to develop policies in such a way that the sharing of responsibilities becomes clear. On this basis, the report proposes a tiered allocation of responsibility within each strategic element – governments, industry, consumers and society as a whole.

3) Why Sustainable Consumption?

Impacts of unsustainable consumption // *What is wrong?*

There are three main impacts of sustainable consumption, environmental, social and economic.

Environmental Impacts

Unsustainable consumption leads to three main types of negative environmental impacts.

- **Resource depletion** – exhaustion of finite resources and damage to renewable resources.
- **Pollution** – overloading of the environment's capacity to disperse and process pollutants.
- **Biodiversity reduction** – elimination of valuable ecosystem and speciate diversity.

Excessive resource extraction and consumption, largely caused by overconsumption, contributes significantly to all of these. Underconsumption too is partly responsible for decisions with negative impacts on resources and the environment. UNEP's *GEO-2000* report puts these impacts into stark figures, characteristic examples of which include the following:²³

Key environmental impacts from unsustainable consumption
• Between 1990 and 1995, 65 million hectares (the size of 130 million football fields) forest were lost, out of a global total of 3500 million hectares.
• In 1996, 25% of the world's approximately 4630 mammal species and 11% of 9675 bird species were at a significant risk of total extinction.
• The global marine fish catch almost doubled between 1975 and 95 and now an estimated 60% of fisheries are at or near the point at which yields decline.
• 400 million tonnes of hazardous waste is created from chemicals each year, with 75% of the use and waste generation attributed to the industrial countries.

Tracing the impacts that particular consumption choices have on the environment is not easy, particularly so the further one goes back down the supply-chain of materials and energy. However, the general connection between consumption and environmental impacts cannot be questioned, based on data now gathered.²⁴

Social Impacts

UNDP's *Human Development Report 1998* makes a special study on the social impacts of consumption patterns, particularly underconsumption.²⁵ It posits that an increased incidence of poverty, and worsened conditions for those already poor result when food security, itself partly contingent upon environmental security, and local economic viability are jeopardized. The example of Eastern Europe's transition economies shows how even access to consumption can become a problem: despite the existence of disposable income in some parts of these societies, overall economic progress is blocked because, *inter alia*, goods and services are unavailable due to weak markets, high economic risks, and a general state of insecurity.

Much less work has been done on *overconsumption*, the social impacts of which are less visible on a daily basis. Nevertheless, a few symptoms of a society dissatisfied by its own excess consumption can be tentatively suggested. 'Community' was formerly a symbol of an efficient system for distribution and sharing of scarce resources, where specialised or expensive goods would be held in common by the community. Today, consumer commodities are so cheap, that everyone can afford to have their own – from luxury cars, to do-it-yourself toolkits, and sophisticated music systems. Hence, the fragmentation of community with the resulting social injustice – a demonstrable phenomenon in many high-consumption countries – can at least partly be ascribed to modern patterns of overconsumption.²⁶

Environmental impacts

- Resource depletion
- Pollution
- Biodiversity reduction

Social impacts

- Poverty
- Economic damage
- Community and cultural damage
- Diminishing marginal growth in welfare

Similarly, high consumption and short product-lives can tend, perhaps, to lead to a cultural shallowness and un-rootedness. As fashions and tastes change, products become undesirable even before their short utility-life has been exhausted. As a result, many anchorage or orientation points in day-to-day life can be lost, in favour of endlessly changing 'novelties'.²⁷

Therefore, it seems that overconsumption often results in personal dissatisfaction, or even loneliness amidst apparent plenty. There is even empirical evidence that beyond a certain 'threshold', simple economic growth has a negative effect on quality of life.²⁸ Such observations call into question the validity of using GDP as the sole – or even primary – indicator of national welfare and progress. 'Money is not everything' – nor is consumption of tangible goods and services. Lasting satisfaction seems to lie elsewhere.

Economic Impacts

Economic impacts

- Unforeseen impacts
- Unplanned infrastructure
- Economic shocks/downturns

Thirdly, unsustainable consumption has a raft of economic costs. The costs of global warming, caused primarily by unsustainable use of fossil fuels, will be huge, both in terms of costs of impacts (for example on the insurance industry) and in terms of retooling of industry. In fact, this is the basic economic instability – costs of both unforeseen impacts and unplanned infrastructure developments – of all major environmental damage. The economy itself is based on the environment's ability to supply resources as well as a healthy work force, and if these cannot be provided, it is also the economy that will ultimately suffer.

Furthermore, unsustainable consumption is often brought about by so-called 'perverse subsidies'. Such subsidies are usually not intrinsically perverse, but have become so due to new insights into their full impacts and the actual quality of life they can deliver. For example, at the time of its conception, nuclear power promised to be an eternal source of clean energy, while recent experience has revealed the hidden costs, and potential dangers that have marked it out as both environmentally and economically unsound. Therefore, perverse subsidies not only support ecologically unsound activities, but are also a major source of economic inefficiencies.

Finally, one should note the interdependence between unsustainable consumption and problems on the supply side. Unstable consumption patterns often cause production to decline rapidly in certain regions and sectors, which usually results in economic and structural damage. The threat of economic disruption is particularly great if production of commodities, for economies of scale or comparative advantage, is too centralised in a region or country. In each case, sectoral and regional economic diversity is key to stabilising economic performance in times of change of consumption patterns.

4) Advocates of Sustainable Consumption

Diverse though they are, the advocates of sustainable consumption – pioneering NGOs, IGOs, governments, consumer groups, businesses and academia- share at least one thing: a realization that destructive consumption patterns must change.

Environmental and social groups (such as *Friends of the Earth International*, and the *Centre for a New American Dream*) have been among the first to point out the cost of overconsumption to environmental damage. They have sought to lay bare the links between consumer demand and resource consumption to bring this problem to the attention of politicians and other stakeholders involved, while appealing to consumers as responsible citizens.

Gradually, the international political community, led by, the *Organization for Economic Cooperation and Development* (OECD), UNEP, and the Commission for sustainable development (CSD) has produced the required conceptual and substantive policy approaches (see *Sustainable Consumption: Documents and Events* at the end of this report for details)²⁹ From the outset, UNEP has been involved in this development, its Sustainable Consumption Programme taking an integrated approach aimed at putting various tools into perspective for both consumers and producers

Certain governments (including Norway, the Netherlands, the Republic of Korea, and Austria) have spearheaded pioneering research, set up pilot programmes to change domestic consumption patterns and actively contributed to the international debate.

National and international consumer groups (led by *Consumers International*) and consumers themselves as individuals or community members have come together to demand more sustainable consumption patterns. Besides calling for 'greener' consumer choices, they redrafted the *UN Guidelines on Consumer Protection* to incorporate references to sustainable consumption and advocated changing consumer behaviour itself.

On the side of international business associations, the *World Business Council for Sustainable Development* (WBCSD) has taken its own approach to sustainable consumption, focusing on market aspects, renaming its work 'Sustainability Through the Market'.³⁰

Finally, a variety of work has been done outside the policy arena with an academic background. This includes much pre-Rio work, examining the development of modern consumption patterns, along with other pre/post-Rio projects to study the sociological implications of current consumption behaviour. For example, the *Oxford Commission on Sustainable Consumption*, which was launched at 1999 Session of the CSD, is currently preparing a variety of academic assessments of sustainable consumption. Furthermore, The *Wuppertal Institute for Climate and Energy* has been one of the central development bodies for the environmental space methodology and also pioneered analysis of resource flows. Another academic contributor is the *International Institute for Environment and Development* (IIED). Shortly after Rio, it began to produce a stream of valuable materials which have positively shaped the international debate on sustainable consumption (see *Sustainable Consumption: Documents and Events* for details.)

However, all of the aforementioned agents have not only worked individually, but have formed wide-ranging coalitions. At the international level, IGOs, governments, researchers, industry associations and major NGOs are all beginning to work together. The UN is assuming a central role in this process. At the national level, governments have begun to take the need for national programmes on sustainable consumption more seriously. At the regional and local level, municipal governments, industry, NGOs and community groups are forming partnerships to tackle consumption-related issues. These alliances are particularly important when one considers the multifaceted aspect of the sustainable consumption challenge.

However, it must also be pointed out that there are those who feel that sustainable consumption – and indeed sustainable development – is an unnecessary, and perhaps even artificial, challenge for human society. On the one hand, some disagree that aspects of environmental impacts, such

Advocates

- Environmental NGOs
- IGOs
- Pioneering governments
- Consumer groups
- Businesses
- Academia
- Diverse alliances

as climate change, are as severe as widely claimed. On the other hand, certain economists, while agreeing that environmental impacts are real and severe, deny that any significant market intervention is appropriate: their view is that markets, with mild property-allocation and pricing adjustments, will naturally act to correct distortions such as pollution-related externalities.

5) North, South, East, West

One of the major considerations in the drive for sustainable consumption, which needs to be handled with great care and attention, is the question of North-South economic and social relations. One of the elements of the CSD's work programme is an assessment of the impacts on developing countries of changes in consumption patterns in the developed world.

Simultaneously, in terms of pan-European development, there is the core question of the changing patterns of consumption in the 'transitional' economies of the former Soviet bloc in Central and Eastern Europe, and the relationship between that change and the socio-economic situation in Western Europe.

This report does not aim to deal with the issues here in depth. The statistics and examples below are drawn from the UNDP Human Development Report 1998, focussing on consumption, which has more comprehensive information on the topic.³¹ Not only are the specifics different in each national and regional case, the situation is also changing rapidly. This report aims to propose a modular strategic framework which can be deployed and appropriated to the specific situation. For example, *Dematerialisation* may well be a key element for the inefficient, formerly state-run industries of Eastern Europe, whereas the challenge of *Conscious* and *Appropriate Consumption* is hardly an immediate priority for those societies of the region where consumption is minimal, and choice very limited. Similarly, whereas *Dematerialisation* is not yet appropriate for developing countries in which an industry base is still establishing itself, the process of implementing the right infrastructure, allowing *Different Consumption* to take root (in this case the difference is between pre-industrial underconsumption and post-industrial, sustainable consumption) is timely.

However, in all countries – North, South, East or West – whether more or less developed, at least starting a debate over *Appropriate Consumption* remains crucial. The loss of traditional knowledge, local and regional practices, cultural identity, and regional economic autonomy and security are all strong concerns in both advanced industrial cultures and emerging developing countries. It cannot be overstressed that to promote the debate on *Appropriate Consumption* is not necessarily a gesture of the industrialised world anxious about the general effects of global resource use, and unconcerned by the development interests of less developed regions. It is a question rooted in personal and social concerns, shared all over the world, about the costs of development, industrialisation and globalisation.

When we look concretely at the differences among global consumption patterns, it is necessary first to clarify that sustainable consumption is not simply a challenge framed and driven by Northern governments. It is certainly true that the North is overwhelmingly responsible for unsustainable consumption: 80% of resources are consumed by less than 10% of the people.³² Individuals in the South are seeking to emulate the models of consumption offered by the North. Accordingly, Agenda 21 and subsequent CSD decisions recognise the need for leadership in sustainable consumption being taken by the Northern, developed countries:

"4.4. Measures to be undertaken at the international level for the protection and enhancement of the environment must take fully into account the current imbalances in the global patterns of consumption and production."

However, this does not mean that the South is not implicated in the necessary changes in order to resolve existing over- and underconsumption and the resulting inequity. In the South, even the access to basic facilities can differ vastly between the Northern oriented upper class and often traditional underconsuming poorer class. For example, in Mexico, almost all the richest fifth have access to sanitation, while few of the poorest fifth enjoy the same facility. In fact the local impacts of industrialised consumption behaviour – intensive automobile use, use of natural resources – can be comparatively more significant in contexts where regulatory controls are not as strong as in more developed countries.

The general impact of unsustainable resource consumption on the poor is less balanced between North and South. Not only are the poor often living in marginal lands, where impacts of resource degradation and pollution are most keenly felt, they are often unable to move on or to spend

North, South, East, West

- Global North-South differences in consumption
- European East-West differences in consumption
- Flexible application of 'Consumption Opportunities' frame
- *Appropriate Consumption*: question for all regions
- North has main responsibility, but inequity and overconsumption also exist in South

North, South, East West

- Impacts of change in North on South: can lead to comparative advantage
- Local and regional stability
- Globalisation and globalised consumption impacting on local culture
- South poised, but needs more support, to 'leapfrog' dirty development
- Consumption interlinked with other global issues:
 - financial architecture
 - capital flows
 - debt

extra on protecting their resources and livelihoods. For example, climate change, now understood as a result of intensive fossil fuel use in the industrial North over the past hundred and fifty years, will deliver its harshest effects in areas, such as Bangladesh, which have simply not contributed to, nor benefited from, this industrialisation phase.

Socially and culturally impactful change in consumption patterns is not hard to detect, with a significant general increase in uniform, Western consumption choices becoming the standard in developing countries. Clearly, not all of this is negative: information technology, for example, tends to require a global standard, but need not negate local and unique applications. But more conventional consumption activities are tending to converge to a global norm, for better or worse. By the early 1980s in the Philippines, a well-known global soft drink brand had effectively eliminated from the market indigenous beverages like kalamansi (lime juice), buko (coconut water) and gulaman (seaweed gelatine with sugared water or coconut milk).

Nevertheless, on the positive side, projects do exist that aim to counterbalance the homogenising trends of global consumption behaviour. In Senegal, the *pamible* or "rich bread" project, and the *bro* bread initiative in the Cote d'Ivoire have successfully introduced breads made of local cereals and tubers (e.g. millet, maize, yam) which are less costly, keep for longer than European-style breads introduced in the colonial period and reduce Southern dependence on the North. The South can even provide a positive example for the North and is already a part of enriching northern culture. Thus the abovementioned Philippine soft drinks have found their ways into cook books and high cuisine.³³

Furthermore, changing consumer patterns in the North can lead to investment, industrial development and trade worldwide. Approached in a constructive way, the South is set to gain from changes in Northern consumption patterns. The CSD report mentioned above, *Unlocking Trade Opportunities*, is a pilot study for the type of comparative advantage scenarios that can be built up to exploit the need for new, more sustainably produced goods and services. However, the appropriate intergovernmental measures – including financing, technology transfer, and capacity-building – need to be in place in order to ensure that these benefits become widespread. However, bearing in mind the increasing concerns for regional economic and cultural autonomy, the path of sustainable commodity exports – enabling the South to gain by producing manufactures for increasingly sustainable consumption patterns in the North – is not the only solution to the North-South divide. Locally-specific goods and services, for consumption in the locale or region, represent an equally legitimate and possibly more stable development path for the South.

For the future, it is clear that the South, beyond taking advantage of new markets for sustainable products due to changes in consumption patterns in the North, is poised to 'leapfrog' the 'dirty industry' phase that now-industrialised countries have been through. This is the opposite of suggesting that less developed countries should look to environmental conservation before economic development (which is not what the developed North has done): it is a question of promoting clean development and environmental protection at the same time, using the best that modern industry, technology and social development paths can offer. Development aid in general will also have to be assessed according to its ability to supply a standard of sustainability and quality of life. This is particularly relevant since development in the South has often idealised unsustainable lifestyles with huge trophy projects like bigger dams, highways etc.

Finally, it needs to be stressed that sustainable consumption takes place in the context of broader debates about relations between more and less developed parts of the world. The direction of globalisation, the role of technology, the nature and extent of trade, global financial architecture, capital flows, debt, regional and cultural autonomy: all these are powerful themes which, as resolutions emerge, will influence the nature of consumption patterns, and the path of sustainable consumption. It seems misguided to imagine that the sustainable consumption debate stands outside these other concerns, and further policy work is required to trace the linkages and implications between them. In particular, the issue of global trade, with the special implications raised by the rules of the World Trade Organisation, requires a detailed discussion.

6) Trade and Consumption

Trade is now a crucial feature in all globally-relevant policy discussions because international trade law, presided over by the World Trade Organisation (WTO), is now one of the strongest and best established international legal and policy regimes. Therefore, almost all other issues in terms of globalisation – including resource use and environmental damage – intersect with trade.

The General Agreement on Tariffs and Trade (GATT) was finalised in 1948 to promote rules-based liberalisation of international trade, and to curtail damaging distortions in international economic development caused by heavily protected domestic markets. After various rounds of renegotiation, during which the membership of the GATT continued to grow, the Uruguay Round (between 1986-1994) comprehensively redefined the scope of international trade rules, addressing a diversity of sectors and a range of new, non-tariff barriers to trade that had been outside the scope of the original GATT. Moreover, it mandated the creation of the WTO to adjudicate on trade disputes, monitor ongoing developments in international trade, and handle trade-related negotiations in the future. Key differences between the GATT and the WTO include the stronger and more streamlined dispute-resolution and sanctions mechanism of the WTO, the bundling of agreements on trade in intellectual property and services (as well as trade in goods, which was the focus of the GATT) by means of the WTO, and a stronger focus on non-tariff barriers to trade.

In various respects, the existence of a strong set of rules and mechanisms for international trade is beneficial for promoting sustainable consumption. As a result, access to Northern markets for sustainable goods produced in the South is gradually widening, and foreign direct investment and development in Southern markets is increasing.

However, the WTO rules may also present an obstacle for certain paths leading to sustainable consumption. One issue generally raised against the WTO is that in bringing down 'barriers to trade' it depletes the capacity of developing countries to nurture their own infant industries before exposing them to full competition on the world market. Additionally, in relation to sustainable consumption, there are serious disagreements over the role of environmental protection in relation to trade:

- Have the WTO and its members sufficiently incorporated into their rules and practices a recognition of the environmental and social impact of trade?
- What standing do other international agreements (including multilateral agreements on the environment (MEAs) have in relation to the WTO's trade rules?
- Should instruments designed to identify and promote environmentally-minded products and services be classed as 'barriers to trade'?
- What environmental criteria can producers be encouraged to demand from operatives in their supply chain without being seen to 'discriminate' on an unfair basis amongst competing suppliers?

These are just some of the many issues standing at the interface between social and environmental issues and the international trading system. Partly as a result of these, and partly also as a result of a perceived bias against the interests and participation of developing countries, the Ministerial Conference at the end of 1999 in Seattle failed to produce a mandate for a new Millennium Round of trade negotiations. This was a crucial setback for the advancement of trade liberalisation, though one which, many commentators believe, will ultimately encourage greater coherence among the otherwise uncorrelated regimes of international law and governance: trade, environment, rights, labour, social development.

The resolution of these disagreements, the nature of any further full negotiation round, and the progress of upcoming negotiations on services and other sectors will show whether trade liberalisation can be fully allied with sustainable consumption. In any case, trade issues are likely to continue to pose something of a challenge for environmental and social policy makers.

Trade and Consumption

- General Agreement on Tariffs and Trade (GATT) finalised 1948 to promote liberalisation of global trade
- WTO emerged from GATT, with:
 - Stronger dispute - resolution
 - More agreements: intellectual property, services
 - Non-tariff barriers in focus
- Problems for environment and development:
 - Environmental/ social incorporation into WTO rules?
 - Relation of WTO to MEAs?
 - Environmental/ social measures as 'barriers to trade'?
 - Environmental/ social criteria as 'unfair discrimination'?
- Seattle Millennium Round 'failure' leading to greater transparency

Timeline // *What happened when?*

1992
Event: Earth Summit (Rio de Janeiro).
Document: <i>Agenda 21 Chapter 4, 'Changing Consumption Patterns'.</i>
1993
Document: UNEP IEPAC (1993), <i>Cleaner Production Worldwide</i> . Paris: UNEP IEPAC.
1994
Event: Symposium on Sustainable Consumption (Oslo).
Document: UN CSD (1994), <i>Report of the Secretary General, "Changing Consumption Patterns"</i> . New York: UN.
Document: UNEP IE (1994), <i>Government Strategies and Policies for Cleaner Production</i> . Paris: UNEP IE.
1995
Event: Ministerial Roundtable Conference on Sustainable Production and Consumption (Oslo).
1996
Document: UNEP IE (1996), <i>Life-Cycle Assessment: What it is and How to do it</i> . Paris: UNEP IE.
1997
Event: Earth Summit II (New York).
Document: OECD (1997), <i>Sustainable Consumption and Production</i> . Paris: OECD.
Document: Robins, N. and Roberts, S. (eds) (1997), <i>Unlocking Trade Opportunities: Changing Consumption and Production Patterns</i> . London and New York: IIED and UNDPSCD.
1998
Event/Document: Kabelvåg Workshop/Robins, N. and Roberts, S. (1998), <i>Consumption in a Sustainable World: Report of the Workshop held in Kabelvåg, Norway June 2-4 1998</i> . Oslo: Norwegian Ministry of Environment.
Document: Robins, N. and Roberts, S. (1998) <i>Upshifting? Exploring the challenge of sustainable consumption in the South</i> . London: IIED.
Document: UNECE (1998), <i>Fourth ministerial conference: Environment for Europe Aarhus, Denmark, 23-25 June 1998, Recommendations to ECE governments on encouraging local initiatives towards sustainable consumption patterns</i> . Geneva: UNECE.
Document: UNEP IE (1998), <i>Cleaner Production: a Guide to Sources of Information</i> . Paris: UNEP IE.
1999
Event: UN CSD 7th Session, focussing on sustainable consumption; launch of Oxford Commission on Sustainable Consumption (New York).
Document: UN CSD (1999), <i>Report of the Secretary General, "Changing Consumption Patterns"</i> . New York: UN.
Document: UNEP DTIE (1999), <i>Towards the Global Use of Life-Cycle Assessment</i> . Paris: UNEP DTIE.
2001
Document: Charkiewicz, Eva (2001), <i>Transitions to Sustainable Production and Consumption: Concepts, Policies and Actions</i> . Maastricht: Shaker Publishing.

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II. Sustainable Consumption: A Strategy for change

1) A simple, flexible approach

The strategy presented in this here addresses the five critical problems, identified in the previous section, which impede sustainable consumption. As previously suggested it aims to:

- 1) differentiate between sustainable consumption and sustainable development;
- 2) package disparate policies into one overarching strategy;
- 3) bridge the gap between different issues and dimensions of sustainable consumption;
- 4) profile sustainable consumption as an opportunity rather than a constraint; and
- 5) explore other perspectives of sustainable consumption beyond the purely economic.

The strategy divides sustainable consumption into two categories of activity:

- Dematerialisation.
- Optimisation.

In this section the main aspects of each are first explained in outline, demonstrating how the challenges of sustainable consumption are met. The essence of each strategic element is then presented as a question regarding the unsustainable consumption practices which currently confront us. Couching the key considerations of a sustainable consumption strategy as questions is probably essential to its flexibility, and hence to its success.

One may look to the appropriate agent for leadership in providing answers and action in relation to each strategic element. Therefore, next to each strategic element a ladder of responsibility is added, suggesting the balance of roles in sustainable consumption likely to bring the easiest and fastest changes.

Finally, at the end of this section the debate is summarised, grouping the strategic elements into one package. In order to situate this document better in the real context of intergovernmental policy and international economic relations, a commentary on the North-South dimension of sustainable consumption is presented here, including its relation with trade.

Strategic Framework

- Tool for decision-makers
- Clear yet comprehensive
- Robust yet flexible
- Overcomes the five critical problems of sustainable consumption
- Two elements
 - Dematerialisation
 - Optimisation
- Ask the right questions

2) Dematerialisation

Inputs and Outputs // *Transparency*

The consumption of products and services involves both inputs of raw materials and energy, and outputs of waste. The process, generically, is as follows:

- **Production Stage** Extraction, production, marketing, transportation.
- **Use Stage** Purchasing, use, maintenance, transportation.
- **Disposal Stage** Kerbside disposal, reclamation, transportation, industrial disposal.

Clearly, the material and energy input to a product or service is not simply what is in one's hand, nor is disposal of the product the only waste generated. What one sees and what one gets, as a consumer, represent only one surface aspect of the activities listed above, all of which also require material and energy inputs and generate waste outputs. For this reason it is central to *Dematerialisation* that efforts must be made simply to reduce the material and energy inputs and waste outputs at every stage of the life of a product or service.

In the current commercial culture of consumerism, short product-life and short technological upgrade cycles, and in-built obsolescence, alternative design and production practices are too easily overlooked. A thorough strategy of *Dematerialisation* will place the goal of resource efficiency in the foreground for both the producing industry, and consumers.

Better 'resource productivity' // *Much more with much less*

Dematerialisation is, at its most basic, about efficiency in the creation, deployment and disposal of products or services. *Dematerialisation* implies two types of efficiency:

- **Product Efficiency** *Using less to create the same product or service.*
- **Process Efficiency** *Doing less to create the same product or service.*

Product Efficiency is largely a question of technological advance and product design, enabling greater productivity yield from a given amount of resources.

Process Efficiency is more a matter of management, strategy and process design, cutting out activities and processes which are in fact unnecessary to achieve the desired end product or service. Examples of process efficiency include: reducing the number of separate assembly processes to produce a given item or component, and siting together different parts of a factory (or different refinement/assembly plants) to eliminate unnecessary haulage.

The key consideration is that *Dematerialisation* is as much about maximising the productivity of resource inputs as it is about simply reducing total levels of inputs and outputs. Since the Industrial Revolution, we have seen a 200-fold increase in labour productivity: it is now time to see that same increase in productivity from material resources.³⁴ Furthermore, *Dematerialisation* can contribute greatly to sustainable consumption, without actually changing the patterns of consumer demand themselves. Properly done, it should not result in increased consumption as an automatic result of resource savings. On the contrary, one of the roles of *Optimisation* is to ensure that the benefits of *Dematerialisation* are not forfeited by increased consumption. Economists are therefore now looking at *Dematerialisation* as a new catalyst for industrial development, linking efficiency and environmental conservation to apparently normal consumption patterns.

Inputs/Outputs of Products and Services

- Inputs of energy and materials
- Outputs of waste
- At each stage of life
 - Production
 - Use
 - Disposal
- What you see and what you get are not all there is

Dematerialisation

- Improved efficiency
- Product Efficiency: *using less*
- Process Efficiency: *doing less*
- Maximising resource productivity

The Tools of Dematerialisation // *Factor X reductions*

Dematerialisation tools

- Factor X increases in resource productivity
- Also:
 - Durability
 - Upgradeability
 - Craftsmanship
 - Quality
- Dematerialisation as 'win-win' policy

One tool with which to conceptualise and implement a programme of *Dematerialisation* is the 'Factor X' approach. Here, the factor of reduction of total inputs and outputs and the potential for increased resource productivity are given in the same statistic. For example, any product or service which can achieve one of the following:

- a four-fold reduction total of inputs
- a four-fold increase in resource productivity
- a two-fold reduction of inputs plus a two-fold increase in productivity

– is a 'Factor 4' item.

Detailed methodologies and manifold case studies have been published proving the viability of both a 'Factor 4' and 'Factor 10' approach.³⁵ But this does not stop other researchers going further and looking, in all seriousness, for 'Factor 50' and 'Factor 100' resource reductions and productivity gains.

Dematerialisation not only implies greater efficiency of resource use in products currently available, but also the development – incorporated at the design stage – of products which are simply more durable, or at least properly upgradeable. In this context, UNEP has been exploring Ecodesign, Product Service Systems and Life-Cycle Assessment as methodologies for the technical deployment of *Dematerialisation*. Aspects of these methods include the need for designs that provide for repair, easy take-back, and disassembly.

Indeed, there is a strong case to be made, in the context of *Dematerialisation*, for the selective blending of the best of old and new practices. Craftsmanship, attention to detail, quality of materials, longevity of products – none of these need to imply a rejection of modern production and distribution methods, technological development, or modern lifestyles. Because there is already a widely felt discomfort with a system that makes a the replacement of a partially defective product more expensive than getting a new one, they may well encourage greater loyalty from, and increase quality of life for, both producers and consumers.

Dematerialisation seems in principle therefore to be a 'win-win' option in every case, serving the ends of environmental protection and industrial productivity in equal measure. The only sectors which are likely to experience impact are those in which quantitative throughput of raw materials is the prime factor (such as extractive industries): and yet these may be well placed to develop new markets in the 'reclamation' industries of the future. But even beyond this range of opportunities, there are ways to increase the incentives for *Dematerialisation*.

Incentives for Dematerialisation // *Internalising full costs*

Internalising the full cost

- Assess costs accrued at all stages
- Include impacts on marginalised
- Include cost of 'environmental services'
- Define environmental property rights
- Define liabilities
- Promote product take-back

A full view of material inputs and outputs features marginally, if at all, in the work of mainstream economists and engineers. Commonly, the only supply-side aspects of it worth tracking are the extraction of raw materials, and the production and marketing processes. And on the demand-side, in simple terms, once a product or service has been sold, economic and technical attention paid to its use and disposal is minimal. However, resulting depletion of resource stocks, widespread pollution, and reduced biodiversity all demonstrate the unsustainability of such a view of consumption of goods and services. Unsurprisingly, the full inputs and outputs of products and services are now being called into question.

The economic problem here are the unaccounted costs. Hitherto, many costs associated with inputs and waste clean-up have been externalised and left outside the final price of the product or service. Usually, this means a severe undervaluation of the resources used. The environment's provision of air, soil, water and other economic essentials, and its capacity to remove and process waste outputs – sometimes together called 'environmental services' – have been accorded a value-free status. Often enough, too, impacts and costs for marginalized and disenfranchised countries and members of society have simply been ignored or devalued.

The economic response to this challenge is the 'internalisation' of the full cost of inputs and of properly managing waste outputs in the price of the product or service in question. This practice has been called the 'Polluter Pays Principle' (PPP). It is beginning to be accepted by major industries as a legitimate check on their capacity to emit waste without responsibility for its impacts.

There are many ways to internalise costs, such as encouraging or enforcing the take-back of post-consumer waste by product manufacturers. The preferred method in economic practice is to more clearly and more fully define 'property rights' for environmental resources and for 'liabilities' for damage caused. In this context, pricing can be established for the use of such resourceful 'property', and liabilities established for damage both to property and to the social and economic fabric, in the course of economic activity.

However, one flaw that has arisen in this price-correction process is that definition and 'liabilities' have not been properly allocated in new property regimes. This is particularly the case where certain resources (often those held in common), and also various practices and general coherence of society, are difficult to define in 'property' terms. In that context, it becomes difficult to establish what the precise liabilities are, where damage appears to be accruing. In financial and economic terms, one may say liabilities for environmental damage have been even more poorly defined than environmental property rights.

A natural starting point // *Efficient consumption*

The policy community, with a strategy of *Dematerialisation*, is offering industry and national governments an approach which achieves major benefits in economic, social and environmental terms.

Once consumption has been made resource-efficient using a 'Factor X' approach to *Dematerialisation*, would consumer patterns need to change? In principle, no. Furthermore, since *Dematerialisation* is largely an industry issue, resolved in-house before the product or service reaches the consumer, there is a reduced visibility of the entire process. Hence 'Factor X' approaches allow consumption patterns to remain stable while resource use is decreased and do not require any effort or sacrifice on the part of the consumers. This implies very strongly that *Dematerialisation* is the natural starting point for a realistic strategy for sustainable consumption, ready for broad scale implementation now.

Factor Four, a book dedicated to exploring the potentials of *Dematerialisation* using the Factor X concept, contains at least 50 case-study examples of real-world delivery of Factor X efficiency gains, looking at energy productivity, material productivity and design/logistic efficiency. Specific examples include energy-savings in a chemicals factory: even after ten-years of energy-saving projects, efficiencies were being discovered that delivered a 305% return-on-investment. Again, a redesigned refrigerator, using both design and material advancements, can achieve a four to eight-fold increase in material and energy productivity.³⁶ Such examples and field-tested technologies are beyond question ready for mass-dissemination. Indeed, many of them are already in mass-production and rapidly growing in acceptance.

It is important to isolate, however, which major agent seems best placed to lead in the drive for *Dematerialisation*. This is industry, closely supported by governments and encouraged by consumers. Industry, with the financial incentive to cut costs, has the most to gain, directly, from a serious programme of *Dematerialisation*. Given the extent to which benefits can be expected to accrue from this approach, governments ought not feel the need to regulate this development very heavily. However, more *Dematerialisation* opportunities will become available when cost-internalising and pollution-reducing regulations are strengthened; when fiscal support is transferred to low-resource-intensity industries; and when consumers begin to express clear preferences for such products and services. It is for this reason – action by one major group facilitating action by the others – that this report focuses throughout on the 'cycle of responsibility' required by the challenge of sustainable consumption.

Efficient consumption

- No consumer effort required
- Increased productivity – decreased resource use
- Natural, speedy change
- Led by industry, supported by governments

Sceptics have asked of the promoters of industrial *Dematerialisation*, if resources and costs can be saved by producing dematerialised goods and services, why has it not already been done? The answer is firstly that it is being done: Xerox, 3M and Interface are examples of corporations which have gained financial and environmental benefits through *Dematerialisation*. Still, in the absence of regulatory and fiscal incentives, full cost internalisation and a developed marketplace for these new products and services, it is no simple task to identify good opportunities. This is why, frequently, only the large, socially responsible multinationals or innovative start-ups are in a position to utilize commercial opportunities for *Dematerialisation*. Even then entrepreneurial risk-aversion at all levels has yet to be overcome – practices and ideas which seem to work do not always give way readily to innovations which will turn out to work better.

The process of efficient consumption through *Dematerialisation* may be distilled into one simple question – a question which can and should be asked repeatedly of every product and service:

Dematerialisation – *Efficient Consumption*

What factor of increased resource productivity can be achieved in each product and service?

Section III shall revisit the implementation principles, and actual policies which flow from this question.

Limits of Dematerialisation// *The need for Optimisation*

Limits of Dematerialisation

- Limits to efficiency gains
- More consumption per capita
- More people
- Is efficient consumption enough?

Ultimately, there are several constraints that demonstrate that the challenge of sustainable consumption does not end with *Dematerialisation*.

Firstly, even the efficiencies won by expanding productivity have their limits. As maximum efficiency is approached, a law of diminishing returns sets in, making it less and less profitable to seek further gains. In addition, many processes have only a modest potential (up to, say, Factor 4) for efficiency gains.

Secondly, without consumer re-education, consumption has proved to increase significantly per person. Take the automobile industry: fuel-mileage efficiency has increased significantly since the beginning of the 1990s while the number of passenger miles travelled, for example in Europe, has increased even more.³⁷ This trend will continue as efficiency gains are outweighed by increased consumerism.

Thirdly, efficiency gains in the production process or per product-unit are offset by consumption increases and by population growth. What's more, those countries experiencing rapid population growth are often the same ones also trying to increase per capita consumption for legitimate human development reasons, thereby reinforcing the trend towards increasing overall consumption.

Finally, maximising production efficiency may be a laudable goal, but only if everyone has access to the end products and services – and only if they are beneficial to society at large. Sustainable consumption should not create a better world only for the affluent few; nor should it ignore cultural sensitivities and the overarching aims of social development. Thus, *Dematerialisation* needs a complementary strategy of *Optimisation* of consumption patterns because only in combination can the two approaches be brought to their full potential.

3) Optimisation

Optimisation has three aspects:

- **Different Consumption** Changing infrastructure and choices.
- **Conscious Consumption** Choosing and using more consciously.
- **Appropriate Consumption** Questioning levels and drivers of consumption.

It should be noted that Optimisation is not simply a process of consumers adjusting their consumption behaviour in relation to prices or information. Those aspects are important to sustainable consumption, but not sufficient to build a complete strategy.

Optimisation

- Different Consumption
- Conscious Consumption
- Appropriate Consumption

Different Consumption // *Infrastructure and choices*

Infrastructure – the hard core of consumption patterns

Beyond *Dematerialisation*, consumption patterns can be optimised by *Conscious* and *Appropriate Consumption* on the part of consumers and citizens. However, in between these strategies, there is a need for governments and industry to create a platform of *Different Consumption*, which facilitates *Conscious* and *Appropriate Consumption*.

It is not realistic to suggest that new demand for different products and services causes them to emerge from the market, let alone that consumers will be prepared to forego a broad swathe of consumption preferences. There are many material, non-material and institutional factors which create barriers to change in consumption patterns. Existing conditions, key facts and assumptions, financial and policy methods, bureaucratic structures and social considerations are just a few of them. These *infrastructural* issues create a framework of choices available to the consumer.

Different Consumption

- Changing material infrastructure
- Changing institutional infrastructure
- Creating new choices

Changing these infrastructural issues can best be handled directly by decision makers in government and industry. It implies balancing out the workability and desirability of different choices for consumers, making sustainable consumption practices no less preferable in terms of quality of life. But, in order to achieve sustainability and increase quality of life, it needs to be faced that certain choices may have to be re-evaluated or even stripped out altogether.

It is these challenges, amounting to the implementation of *Different Consumption*, which represent the hard core of sustainable consumption efforts. This part summarises the main material and institutional infrastructural questions which decision-makers face when preparing to optimise consumption patterns. Without action in these areas, it is unlikely that broad changes in consumption patterns can be achieved.

Changing institutional infrastructure

The institutional infrastructure of assumptions and engrained patterns of thinking clearly need to change radically in order to achieve sustainable consumption. This requires reviewing and adapting – some have said ‘re-wiring’ – the economic system so that it focuses more on delivery of human welfare and less on economic growth for its own sake.

There is a range of practical shifts which could be initiated by government to provide a proper foundation for sustainable consumption. Two actions in particular could be readily initiated.

Firstly, national accounting procedures can be developed in order to measure and account properly for natural resources and environmental services. Second, policy guidance and political manifesto commitments can be developed to integrate explicitly issues of sustainable consumption and environmental sustainability into policy development programmes (including internal government performance). The UK’s research into green national accounts, and its sustainability White Paper, *A Better Quality of Life*, are good, realistic examples of this sort of commitment.³⁸

Changing institutional infrastructure

- Led by governments
- National accounting
- Outlook of political parties and economic system
- Policy guidance
- Product-Service Systems (PSS)

Consumer behaviour will only change as a result of a thorough education process, the responsibility for which rests mainly on the shoulder of governments. In fact, no other agents are in a position to change these key aspects of institutional infrastructure such as legislation, national utilities, and major public entities. For example, it was only the national government in the UK, that could implement a nationwide procurement reform programme at the local level. This meant that new contracts for goods and services are given only to suppliers with accredited levels of environmental performance.

More practically, the institutional frameworks for making policy and social choices need to be developed to ensure sustainable consumption. One major component of this institutional restructuring is the adoption of 'new service-economy' models of economic prosperity and social organisation. Such 'Product-Service Systems' (PSS) are based on conceptual remodelling of the functioning of the economy. Usually, consumers purchase *products*, without consideration of usage and waste management. In a PSS context, consumption centres around the purchase of 'services', where functionality of the product and the needs of the consumer. Thereby, usage and disposal become integral to the proper provision of the total service. For example, photocopiers become components of a 'document provision service' and carpets, just one aspect of a 'floor covering service'. Consequently, consumers receive an enhanced service concentrated on the desired outcome of the product, producers improve their relationships to clients and cost internalisation encourages waste reduction and product durability. Therefore PSS improves the quality of life, increases profitability and tackles the problem of unsustainability; in short, it creates a win-win situation.

A potential problem for PSS is the consumer's desire for ownership of products for convenience or as a status symbol. However, also in this context PSS is still relevant. Through appropriate leasing arrangements, ownership is the effective result of the service-provision, though with enhanced customer services, and without negative aspects – such as convenience of disposal through manufacturer-led take-back.

What governments can do in this context is work with industry to promote and support the shift towards greater service intensity in product provision, for environmental, economic and social benefits. PSS models are the paradigm examples where different, more sustainable choices will be made available to consumers only when institutional infrastructure – how things are conceptualised, planned, organised, regulated – takes significant strides forward.

Changing material infrastructure

Sustainable consumption also requires changes in the material infrastructure of consumption. Each sector of activity (for example, transport, cities, energy, food, water) must undergo infrastructural shifts, representing changes which can lead to greater stability and profitability if seized as development and innovation opportunities. Clearly, key facets of *Dematerialisation* (such as UNEP programmes on Cleaner Production and Life-Cycle Initiative) overlap with *Optimisation*. The point is not to make a rigid separation, but to appreciate that, at least initially, *Dematerialisation* and *Optimisation* utilise different approaches and different agents.

In each sector, the first question to be considered is: 'Which basic conditions cannot be compromised?' In terms of transport, the critical condition may be access or mobility.³⁹ In terms of urban planning, housing and sanitation may be identified as factors which must not be compromised while infrastructural shifts in favour of sustainable consumption take place. Other than these critical factors, everything else is open to innovation. For example, it is becoming common throughout Western Europe to offer housing with only shared or even non-existent parking spaces. Location and layout are more geared towards public transport and non-car mobility. Although this might appear to curtail the consumer's options and free choice, in fact these developments are oversubscribed and very popular. Generally it should be noted that sustainable consumption actually provides consumers with increased personal freedom and choice. And, just as importantly, only in a sustainable system will a consumer be able to enjoy the same breadth of choices in twenty or fifty years time.

Changing material infrastructure

- Major sectoral reconstruction: manufacturing, transportation, energy
- Led by governments, supported by industry

Energy is one sector in which both institutional and material infrastructure changes can be made. While consumers have no interest in buying energy *per se*, measured in kilowatt-hours, they do want to purchase the services (e.g. heating, light, power) and thus have access to the quality of life which energy services provide. Therefore, successful experiments are taking place in which fuel companies change into energy service companies. This is a classic example of change the institutional infrastructure through a shift to PSS.

On the side, of material infrastructure, At the same time, the world's big fuel providers are already investing in renewable energy technologies (RETs). Nevertheless, this 'clean energy' infrastructure shift - some call it the 'solar revolution' - could take place quicker: investments and subsidies for non-renewable technologies are still far higher than those in RETs.

An example for governmental support of renewable energy sources is the German 'Stromeinspeisegesetz', which guarantees a fixed price for energy generated from renewable sources.⁴⁰ Finally, managed liberalisation of the energy market facilitates the establishment of 'green energy' providers, giving consumers the chance to exclusively buy alternative energy and thereby contribute to the change towards sustainable energy production.

Telecommunications is another area that will have an enormous impact on the way material infrastructure is used and developed. The capacity to change transport patterns and support a shift to service-based, dematerialised and decentralised economies is significant, though still largely latent.⁴¹

Looking for major agents in terms of alterations in material infrastructure, again it is *governments* that are the driving force, operating with a judicious balance of incentives and regulations. They are joined by industry to the extent that the private sector owns significant portions of the material infrastructure. A promising development is the emergence of innovative partnerships between government and industry, particularly in the area of telecommunications.

Creating new choices

By altering the institutional and material infrastructure of economies, governments and industry will be creating a new framework of choice for consumers. In this context, new choices can be encouraged to develop. Governments and industry can furthermore accelerate the uptake for new consumption models by investing appropriately in creating new choices for consumers. These options, first of all, should fully exploit a new economic and social 'playing field' in which service provision packages replace crude product-and-waste streams. They may, conversely, be improved versions of already familiar consumer choice options. For example, low-energy and zero-emission household and office products are likely outcomes of new investment in this context.

There is some overlap between *Dematerialisation* and *Different Consumption* as presented here, in the sense that both will promote 'dematerialised' infrastructure, and products. Though it is indicated above that *Dematerialisation* and *Optimisation* are not rigidly separate, we can illustrate the effective difference between an efficient petrol-engine car and an electric car. Whereas *Dematerialisation* is capable of providing a more efficient combustion engine and re-designed chassis and body for petrol-driven cars, infrastructure changes – *Optimisation* – will be required before an electric car becomes a viable choice for consumers. This is because charging one's car will require roadside charging points, an infrastructural change which will have to be provided beforehand. In addition, electric car owners will need to wait for garages and mechanics to adapt before they can get full service for their vehicles. Similar infrastructure considerations apply to other aspects of optimised consumption.

This can be put more simply in terms of cycle-lanes: will consumers cycle more and drive less in cities until there are extensive and safe cycle-lanes? Who is responsible for creating the cycle lanes? Of course, it is the government.

Creating new choices

- Changed infrastructure represents new framework of choice
- Investment stimulates development of new choices

It is misleading to imagine that truly *Different Consumption* will be, or can be, led straightforwardly by the consumer. Once changes in infrastructure are well advanced – that is, when there really are new choices to consume differently – consumers in large numbers can and will take advantage of the new *Consumption Opportunities*. It is up to governments and industry to devise and drive these comprehensive avenues of change. The business opportunities are there, particularly in the development and maintenance of new material infrastructure. They can guide themselves by replies to the following question, the first strategic element of *Optimisation*:

Optimisation – *Different Consumption*

What changes in choices and infrastructure will satisfy consumer demand more sustainably?

Conscious Consumption // *Conscious choosing and using*

Conscious Consumption

- Responsibility of consumers, supported by governments and industry
- Conscious choosing, conscious using

The second and third aspects of *Optimisation* of consumption patterns deal more directly with consumers and citizens.

Firstly, governments and industry themselves can prepare the ground for a practice of *Conscious Consumption* by promoting more considered practices of both *choosing* and *using* products and services. Whilst it may not be the place of decision-makers to criticise the consumption behaviour of consumers, it may well be a special responsibility of politicians to generate important debate among their electorates, and a demonstration of the responsibility of industry to participate positively in them.

The main body of responsibility for *Conscious Consumption* however, lies with the consumer. Consumers can develop a practice of *Conscious Consumption* without either *Dematerialisation* or *Different Consumption* being in place. This is because the aim of *Conscious Consumption* is to maximise quality of life and minimise adverse impacts from all and any consumption, including that which is already taking place.

Conscious Choosing – Education about the product

Consumers not only have a right to choose: they have the right to know what they are choosing. This requires all agents – particularly governments and industry – to work together to ensure that the right information is available to consumers. Beyond information which is available at point-of-sale, broader consumer education can help to promote environmentally responsible citizenship. However the role of industry together with governments, is not enough: consumers do have their own strong role to play in using that information, and educating themselves sufficiently to understand it.

Conscious Choosing – Discerning consumption and enjoyable consumption

More innovatively than merely informing themselves, consumers can get more out of consumption itself by conscious choosing. The need for discerning consumption has throughout time been reduced due to the increase in standard quality of the products (partly through mechanisation), and the unimportance of defective items often due to the low cost of their replacement.

Conscious choosing

- Information at point-of-sale
- General education about products and services
- Judicious choice on grounds of durability, reparability, quality, as well a cost
- Enjoying consumption itself

However, an ‘art’ of consumption may well be worth reviving – perhaps as a counterpart to a modern revival of craftsmanship and product quality. This would entail the weighing of all available information about the quality and desirability of a product or service, taking into account its price, suitability for required purpose, quality of materials and manufacture, durability, and ease of repair, remanufacturing or recycling. Governments, industry and other agents can and should stimulate such a process, but again it is the responsibility of the consumers actually to practise it.

Here advertising and company public relations can play a new role: Instead of creating artificial desire for consumption itself, advertisers can creatively explore how to encourage consumers to make a choice for products based on environmental and quality features. This kind of positive advertising will not only go hand in hand with an increase in available information, but will also strengthen consumer confidence in the companies. UNEP has been working in concert with the advertising and media world to explore such positive contributions and to develop communication strategies to boost sustainable consumption.⁴²

Conscious Using – Using products and services through the community

In addition to conscious choosing, consumers may be able to get more benefit from their products and services through ‘conscious using’ of products.

One possibility is collaborative consumption by different members and groups within a community. Shared consumption in a modern setting can be a tool for highly creative community development, involving the participation of all agents. It is likely that presenting co-operative consumption (of, say, power tools, cars, video cameras) as a ‘return to old ways’ of living will be unsuccessful. Consumers and citizens are understandably keen to see themselves as modern. However, co-operative consumption need not be unsophisticated. Community websites, indicating where the local lawnmowers, or car trailers, are and when they are booked is an example of how modern technology can be allied to alternative patterns of consumption behaviour.

Such a pattern of consumption can also lead to diminished crime and greater personal security. Some major common goods can be kept in well-secured storage areas away from people’s homes, decreasing the likelihood of burglary and therefore increasing home security. Once again, both sophistication in the development and positive presentation of these new modes of consumption can help to overcome the possible stigma attached to community-based consumption that may especially remain in developing and ‘transitional’ contexts.

Conscious Using – Developing skills of conscious use

Finally, *Conscious Consumption* can invoke skill development at both the personal and community level. One reason why disposable goods are desirable, and have become necessary, is that local skills of repair have begun to disappear. At the same time, craft and hobby groups in many western countries are teaching people how to (re)acquire traditional skills. Aligning these two phenomena together will help to build a movement for ‘repairable products’.

More obviously, consumers can encourage themselves, their families and their fellow citizens to ‘look after’ things – both public and private – a bit better, so that repair or replacement become less necessary.

Conscious using

- Use through the community
- Skills of conscious use

For the use of policy makers, the following question tries to capture the essential elements of *Conscious Consumption*.

Optimisation – *Conscious Consumption*

How can consumers increase their quality of life by ‘choosing and using’ more wisely?

Appropriate Consumption // *Assessing drivers and levels*

Appropriate Consumption

- Reassessing drivers and levels of consumption
- Evaluating consumption with relation to civic, cultural and religious/spiritual quality of life
- Reviving civic, cultural, and religious/spiritual quality of life

There are two reasons for questioning consumption itself. Firstly, the point may come at which even highly dematerialised and optimised patterns of consumption are still unsustainable. If it becomes inappropriate, for environmental reasons, for consumption to remain at a certain level, it will be relevant to consider alternatives.

Secondly, at the other end of the scale there is the question of whether or not consumption is really capable of delivering improved quality of life in its fullest sense. On this point, it may be worthwhile for decision-makers and stakeholders to consider to what extent quality of life is efficiently realised through consumption – and to what extent consumption behaviour actually hinders achieving quality of life. Civic quality of life – family, community and society – may be impaired if social activity (and the concrete aspects of social life such as town centres) are too much geared around shopping and consumption. Cultural depth and authenticity, leading to quality of life, may be in jeopardy if people ‘consume’ culture at the expense of actually participating in it, learning skills and practising creativity of their own. And spiritual and religious quality of life is clearly at risk if personal well-being is solely centred on ever-higher levels of material wealth. The importance of the role a society, whether developed or less developed, accords to consumption must not be underestimated.

In cases of sustainability constraints, politicians and industry can pose to themselves, or indeed their electorates and customers, the following questions regarding both the motives or ‘drivers’ and also absolute ‘levels’ of consumption patterns – and base their policies on the responses.

- What is making this company/this economy produce this way? – **Reassessing Drivers**
- What is making me/my community consume in this way? – **Reassessing Drivers**
- What is blocking changes in my/our consumption/production – **Reassessing Drivers**
- What are the aggregate consequences of my/our consumption patterns – **Reassessing Levels**

Ultimately, the question arises as to what extent quality of life increases with increased consumption levels. The answer to this and other questions can only come from society itself. These are questions about the role of consumption in society. The following is a thought-provoking fact in this context: the percentage of Americans calling themselves happy peaked in 1957, although consumption has more than doubled in the meantime.⁴³

In sum, while *Dematerialisation* is a special challenge for industry, changing material and institutional infrastructure to generate *Different Consumption* is a priority task for governments, *Conscious Consumption* is the responsibility of individual consumers. Finally, it is the challenge for society at large – members of all groups and sectors – to decide what *Appropriate Consumption* is in both qualitative and quantitative terms. The question may be phrased as follows:

Optimisation – *Appropriate Consumption*

Are consumption levels sustainable? Is consumption the best way to achieve every type of quality of life?

A variety of research and advocacy organisations are now studying and promoting *Conscious Consumption* and *Appropriate Consumption* – grouping these together as *Responsible Consumption*.⁴⁴ They argue that a practice of *Responsible Consumption* will have taken root if consumers are approaching their consumption activities more consciously, looking at the pros and cons of each purchase choice, and if society as a whole is deciding what role to give consumption in the fuller picture of social life.

4) The four strategic elements

The various characteristics of the strategic elements have been presented above. Here, they are presented again, together with a summary of the proposed major agents responsible for each of the four elements.

Strategic Elements

Major Agents

1. Dematerialisation – *Efficient Consumption*

What factor of increased resource productivity can we achieve in each product and service, and across each sector?



Industry

Government

Consumers

2. Optimisation – *Different Consumption*

What changes in choices and infrastructure will satisfy consumer demand more sustainably?



Governments

Industry

Consumers

3. Optimisation – *Conscious Consumption*

How can consumers increase their quality of life by ‘choosing and using’ more wisely?



Consumers

Industry

Government

4. Optimisation – *Appropriate Consumption*

Are consumption levels sustainable? Is consumption the best way to achieve every type of quality of life?



Society at large

Communities

Citizens

Implementation of the strategic elements above requires sensitivity. While *Dematerialisation* can be introduced immediately, some aspects of *Optimisation* may not succeed unless governments change the material and institutional infrastructure. However, at the very least, *Conscious* and *Appropriate Consumption*, these can be promoted even without the other elements of sustainable consumption being in place. Still, realistically speaking, it is unlikely that individuals or societies would spontaneously change their consumption patterns without new options or an altered infrastructure through which to create them.

Sustainable consumption must be initiated by many agents simultaneously. Each strategic element should be introduced gradually, building up credibility. A ‘systemic’ approach to sustainable consumption, such as this, tells us not only that major groups need to act together, but that consumers and household consumption are not the sole targets of a full, realistic policy approach.

III. Sustainable Consumption: Policies and Opportunities

1) Overview

Making consumption sustainable

- Tracking patterns
- Developing programmes for change
- Implementation of policies

A strategy for implementing sustainable consumption translates an environmental problem into opportunities for social and economic development. It requires a clear view of the current situation, a well-planned programme for introducing change, and a carefully designed package of policies. Below, these needs are addressed. Various indicators and tools for tracking consumption patterns are presented, as well as aspects of a possible implementation programme. In the subsequent parts of this section, the range of policy options are presented according to their potential within a *Dematerialisation/Optimisation* strategy as outlined above.

2) Planning for change

Tracking Consumption Patterns // *Getting the data*

Objective indicators and normative tools

Unsustainable consumption is evident from its impacts on the global environment. Using empirical analysis, both the CSD and OECD have developed indicators to assess the state of the environment and to provide evidence for informed decisions and timely action.⁴⁵ In terms of promoting sustainable consumption, however, such action can be successful only if it is based on comprehensive knowledge of consumption patterns. Therefore, the CSD and OECD have set up pilot projects to assess the state of household and sectoral consumption.

Furthermore, methodologies such as *ecological rucksacks*, *ecological footprints*, and *environmental space* have also been developed to facilitate linking the indicator-based impact measurements to trends in consumption patterns in a normative way.⁴⁶ These three methods can be summarised as follows:

- **Ecological rucksacks** externalised environmental impacts of products and supply-chains.
- **Ecological footprints** environmental impacts aggregated in terms of land-use.
- **Environmental space** setting parameters for sustainable and equitable resource use.

The ‘ecological rucksack’ of a product is the estimation of amount of resources used and impacts caused in the production, distribution, and disposal of a product beyond what is required for the product itself and its normal use. The rucksack, therefore, is the ecological ‘burden’ carried by the product but invisible to the consumer.

Ecological footprints and environmental space are distinctive in that they explicitly integrate issues of equity and redistribution. In developing an ecological footprint assessment, the impact of an economic activity is assessed in terms of the ‘land-take’ required for it, and analysed in relation to the other potential activities and their land-use requirement. It is assumed fundamentally that no individual or society has any special right to claim more ‘land’ than any other, and so such assessments can be used to ensure equity and sufficiency in the development of consumption policy. Environmental space is similar, in that it also assumes a fundamental equity in access to resources, but it bases its analysis in an assessment of sustainable resource extraction rates and pollution dispersal rates of the environment. The ‘environmental space’ for individuals and groups is the freedom that the environment gives them – through resource availability and pollution dispersal – to live their lives, and must be distributed and used in an equitable way.

Subjective Indicators?

The analysis of both the impacts and trends of consumption patterns is useful, in particular for developing policies for *Dematerialisation*, the reduction of material throughput of products and services.

In order to really change consumption patterns, however, one needs to be able to change the behaviour of the consumer. Indicators of the forces which *motivate* particular consumption patterns are hard to develop. Reliable data on the complex of cultural, social and psychological forces which drive personal and household consumption behaviour may be difficult to obtain. Clearly, the *driving forces* of consumption will tend to remain in the subjective, personal realm, despite the recent research aimed at uncovering these forces.⁴⁷

The most pragmatic approach remains to examine the *effectiveness* of consumption against a supposed goal of quality of life. Quality of life itself remains a contested concept, but whatever it may be for each culture and individual, it is agreed that it should be the ultimate goal of all economic activity, including consumption. The challenge remains to ensure that replacement modes of consumption exhibit the same levels of quality of life in the eyes of the consumers themselves.

Consumption patterns

- Objective indicators: levels and trends
- Normative tools: ecological space, footprints, rucksacks
- Subjective indicators?
- Drivers of consumption?
- Effectiveness of consumption?

Optimising consumption implies on the one hand the need to open fully the question on quality of life – debating its characteristics for any given social situation, and questioning to what extent current consumption delivers it. At the same time as this debate, *Optimisation* seeks to explore strategic options for replacing current unsustainable modes of consumption with sustainable patterns which deliver equal or higher levels of quality of life. In this way, the difficulty of obtaining objective, reliable data on the true drivers of consumption behaviour can be partially bypassed. In other words, people can know that one form of consumption is as satisfactory as another – without the need to scientifically analyse this themselves.

Policy analysis // *Developing implementation programmes*

Implementation

- Regional focus
- Where, when – and who
- Cycles of responsibility
- National SC coalitions
- How much benefit?

Sustainable consumption is a relatively new issue on the international political agenda. Even pioneer governments, such as Norway and the Netherlands, and innovative corporations, offer only context-specific insights at this point in time. Although programmes for sustainable development have been extensively developed by governments, industry, academia and NGOs, these may lack a sharp focus on the specific issue of consumption and hence be too general. Nevertheless, there are some generic recommendations that should be incorporated when developing a program of sustainable consumption.

Regional implementation

With a strategic set of tools – such as those suggested below – a programme of action on sustainable consumption can be launched by national governments. With the complexity of this debate and process, and given the special role for consumers and citizens, the natural approach may be to launch simultaneous processes at the regional level, exploring what opportunities and what challenges sustainable consumption can bring in each area..

With a mandate – and funding – from national governments, regional governments, local industries and local groups can develop a programme of dialogue and activity to explore what Dematerialisation and Optimisation of consumption patterns can mean on a regional level. Clearly, alongside the regional and local processes, national governments retain a key role in maintaining and feeding the debate, and in particular are responsible for ensuring that the key elements of national and institutional infrastructure (market regulation, subsidy, legislation) are changing in such a way as to promote the development of sustainable consumption. Similarly, much industrial change will need to be developed by the large multinational firms, who either own parts of local industry or exert strong influence over its behaviour. SMEs may need to be supported in engaging fully, but once markets are clear and opportunities established, they may become the most innovative of the agent groups.

Above all, the value of developing implementation at the regional level demonstrates how 'systemic' sustainable consumption is usefully viewed as an *inversion* of the responsibility ladder of sustainable development, as suggested above. Even if a programme is developed and initiated by the government, planning of the process really starts with citizens and consumers, their behaviour and their interests, and moves upwards and outwards to the bigger, governmental, industrial, and international issues of sustainable development.

Time, place and sector

Processes to define and limit both geographic scope and timescale of a sustainable consumption programme are raised for consideration in some of the policy literature on sustainable consumption.⁴⁸ What can be added, as being of special importance, is the sectoral and social balance of policies used to achieve sustainable consumption.

Any programme for sustainable consumption needs a meaningful geographic scope and realistic time-frame, and needs to take into account which industry sectors, and which social groups, are being given the greatest share of responsibility. Sectors and groups, which are making, through their consumption, the greatest impact on the environment, ought to take the most responsibility for change. By realising the opportunities inherent in sustainable consumption, they can and should at the same time reduce their expenditures and enhance their quality of life through timely action. The *Consumption Opportunities* approach may help in this respect by attempting to take a positive, opportunities-focussed approach in the first place, and, furthermore, by explicitly directing each strategic element toward the most appropriate agent.

‘Cycles of responsibility’ and ‘National Sustainable Consumption Coalitions’

It may be seen that, to create action on sustainable consumption, a new approach to policy development is required. Rather than expecting that one major agent group needs to change completely, in order to create the conditions for change in all the others, more realistic may be to look for small changes in each agent group, which themselves create space for change in the others. This approach, more collaborative and requiring less commitment, in the first instance, from each agent, may be called a ‘cycle of responsibility’.

One option for brining together the right stakeholders in a positive, collaborative way – in order to develop cycles of responsibility – is to establish ‘national sustainable consumption coalitions’. Here, ensuring high-level support and continued input from national and local government, and industry, the relevant stakeholders can concentrate on developing programmes and projects – or promoting pre-existing work – which deliver positive changes in sustainable consumption. The *Consumption Opportunities* report is designed to be used in this sort of context, where, with all stakeholders present, the challenges, responsibilities and opportunities for each major agent group can be picked out and discussed, and put into action together. The strategic framework specifically indicates which agents can be expected to lead in each aspect of sustainable consumption, and this section of the report details the range of tools, actions and policies open to them.

Quantifying efforts and benefits

As far as *Dematerialisation* is concerned a quantification of intended and actual efforts of government, industry and social agents in terms of mitigating negative effects on the environment is fully possible.

However, in terms of *Optimisation*, which deals with the remodelling of consumption patterns for security, sustainability and greater quality of life for all, there are problems in trying to quantify the benefits. Firstly, the extent to which new patterns of consumption offer similar or higher levels of ‘quality of life’ is highly contingent on the outcomes of the debate as to what quality of life is – and how consumption does or does not deliver it. Secondly, in order to detect the precise extent to which new patterns of consumption benefit the environment, new methods of measurement may be necessary, including those indicators described above.

Therefore, one way forward is to advance the general debate on what sort of quality of life societies are trying to develop, and more particularly, which alternative types of consumption will be accepted as replacements. In addition, tools and methods will need to be developed which enable decision-makers and community leaders to assess whether new models and patterns of consumption really are *optimal*. The sooner quantitative methodologies and case studies for ‘replacement consumption’ modes can be developed in the sphere of quality of life and *Optimisation* of consumption patterns, the sooner decision-makers can develop and expand programmes for sustainable consumption.

Here, national sustainable consumption coalitions can be crucial: with only small, tentative successes – but ones which demonstrate possibility and generate enthusiasm among stakeholders – national governments and all other stakeholders can be emboldened to go further in developing sustainable consumption programmes.

3) Policy options

Policy groupings

- “Regulatory, economic, social” may not be the best grouping

To be successful, a programme for sustainable consumption cannot rely only on diagnostic tools and tactical foresight – it also requires a clear view of what policies are available, and examples of their success. A standard approach to analysing policy options is to divide the policies into the following three types:

- **Regulatory** – legislation compelling a certain type of behaviour by individuals or institutions
- **Economic** – structural and ad-hoc adjustments to market conditions to stimulate certain outcomes.
- **Social** – usually some form of awareness-raising or education, involving individuals and communities in ways closely relevant to them.

The complexity of sustainable consumption, coupled with the need for solutions with maximum benefit and minimum disruption, requires a thoroughly integrated approach. The traditional division of policies above does not readily lend itself to this approach. Therefore, it will be more useful to define policies in terms of the strategic frameworks of *Dematerialisation* and *Optimisation*, clarifying the role of each major agent – government, industry, and civil society.

This clarification is given in the following three tables that outline tools, actions and policies, which may be open to each of the three major agents in the drive for sustainable consumption. This information is drawn from a wide variety of sources in the sustainable consumption literature. On many of these strategies, including Life-Cycle Assessment, Product-Service Systems, and Ecodesign, studies exist published by UNEP and other actors in the debate. For core sources and further reading, see the Annotated Bibliography. The rest of this section expands on the contents of the tables, explaining in outline what the likely implications of such policies are for sustainable consumption.

Government tools, actions & policies

Dematerialisation <i>For Efficient Consumption</i>	Optimisation <i>For Different, Conscious, Appropriate Consumption</i>
Tools and actions	
• Indicators – tracking levels and patterns of consumption, tracking environmental impacts.	• National accounts – including the right indicators in the national accounting regime.
• Normative methodologies – ecological footprints, rucksacks and environmental space.	• Targets – financial, social and qualitative targets.
• Efficiency benchmarks – standards-setting for efficiency of products and processes; reporting and labelling standards.	• Management benchmarking – standards-setting for all environmentally-relevant behaviour.
• Information – gathering and publishing aggregate data on energy and material use levels; government certification and labels.	• Policy guidelines/instructions, policy integration – sustainable consumption integrated across policy spectrum.
• Award schemes – rewarding best practice in <i>Dematerialisation</i>.	• Procurement – government as green purchaser.
	• Strategies and programmes – long-range, diverse plans of action.
	• Education and training – general and special dissemination of information
	• Debates – raising issues & questions, bringing facts to people's attention, bringing stakeholders together.
Regulatory and economic policies	
• Legislation – legally binding requirements to change levels of material and energy use.	• Legislation – legally binding requirements to change sectoral behaviour.
• Assessment, enforcement – legislation useless without these.	• Assessment, enforcement – legislation useless without these.
• Taxes/charges on resource extraction – inducement to greater process and product efficiencies.	• Environmental Tax Reform (ETR) – taxing 'bads' not 'goods', ring-fencing new revenues.
• Taxes/charges on products – penalising process or product inefficiencies.	• Removal of perverse subsidies – exposing uncompetitiveness of dirty sectors.
• Taxes/charges on emissions – material emissions into air, water, ground; socially-harmful emissions such as noise, light.	• New investment, subsidies, tax breaks – supporting fledgling, green industries.
• Investment – promoting <i>Dematerialisation</i>.	• Internalisation of costs (Polluter Pays Principle) – letting prices reflect true costs.
• Ad-hoc support – tailored support for specific industry efforts toward <i>Dematerialisation</i>.	• Tradable emissions permits – letting the market decide where best to target pollution reduction.
Intergovernmental and international actions	
• Technology trade & transfer – clean technologies find new markets.	• Strategic trade – mutual benefit to stimulate good sectoral performance in both countries.
• Sharing experiences and best practice – collaborative learning and policy development for Factor X gains.	• Sharing experiences and best practice – collaborative learning and policy development for sectorally and strategically optimised consumption.
• Capacity building – new skills for product and process efficiency.	• Capacity building – new skills for sectoral and strategic change.
• Free flow of information – facilitate debate on and progress in <i>Dematerialisation</i>.	• Trans-border shared management – shared responsibility for major consumption impacts.
• Legal instruments – joint action on efficiency standards to prevent 'race-to-the-bottom'.	• International conventions – guidelines on sectoral and strategic improvements.
	• Finance – investors find new partners, industries, customers, and simpler regulatory environment.
	• Bi-lateral cooperation – resolve trans-border problems
	• Traditional cultures – the technological West learns from the old masters.

Industry tools & actions

Dematerialisation <i>For Efficient Consumption</i>	Optimisation <i>For Different, Conscious, Appropriate Consumption</i>
Tools and actions	
• Pollution prevention/Waste management – pollution prevention does pay, waste is unused raw materials.	• Product-Service Systems (PSS) – shifting from products to end-use services.
• Product efficiencies - Life-Cycle Assessment (LCA), Integrated Product Policy (IPP), Extended Producer Responsibility (EPR), Ecodesign.	• Environmental Management (EM) – control and management methods, for example Total Quality Management .
• Craftsmanship, local production, new management – blending old and new, increasing human ‘efficiency’, increasing quality of life of staff and consumers.	• Research – PSS and EM research.
• Durability, Upgradeability – increasing lifespan of product and quality of life of consumers.	• Reporting – auditing to benchmarked standards, full disclosure, wide set of indicators.
• Environmental Management (EM) – minor process efficiencies.	• Product information/labelling – informing and engaging the consumer.
• Major process efficiencies - Cleaner Production/Eco-Efficiency/Industrial Ecology.	• Collation and dissemination of best practice – sharing PSS and EM experiences wisely.
• Packaging reduction – dematerialising delivery.	• Codes of conduct – both voluntary and negotiated agreement.
• Research – product & process efficiency developments, market research.	
• Collation and dissemination of best practice – sharing (in)efficiency experiences wisely.	
• New markets – development of new markets (especially in South) for dematerialised goods.	

Civil society actions

Dematerialisation <i>For Efficient Consumption</i>	Optimisation <i>For Different, Conscious, Appropriate Consumption</i>
Tools and actions	
• Lobbying – Demanding dematerialised products and services; as well as information through labels, briefings and publications.	• Conscious choosing I – information procurement, learning about impacts and implications of production, products and services.
• Corporate monitoring – Watchdog groups and publications tracking developments.	• Conscious choosing II – discriminating and enjoyable consumption.
• Information sharing – Mutual education and campaign development.	• Conscious using I – using products and services through the community (‘sharing’).
• Shopping – Actually consuming dematerialised products and services, creating markets.	• Conscious using II – developing skills of conscious and conscientious use (‘saving’).
	• Civic participation – social clubs, workshops, leisure and cultural associations.
	• Cultural renaissance – arts and crafts skills and creativity.
	• Religious and spiritual development – reconnection with ethics and transpersonal values.
	• Local debates – issues and questions of regional concern.

4) Government tools, actions & policies

Dematerialisation

Tools and actions

Although the primary responsibility for *Dematerialisation* lies with industry, governments should both enable and enforce the shift to efficient consumption. To level the playing field they can introduce tools and rules - applicable to all. With these in place, far-sighted industry players can formulate their contribution to sustainable consumption more effectively, without losing their critical competitive edge or potentially even gaining one.

In the first instance, governments can take the lead in establishing accurate information on consumption patterns and levels, and to publish these widely. In this way, all industry will be able to work on the basis of the same pool of data in targeting new markets, or investing in new technologies in the confidence that the market for their goods and services is stable and promising.

Secondly, governments can support research into normative methodologies – ecological rucksacks and footprints, or environmental space – not only to help pinpoint where consumption may be becoming unsustainable, but suggest balanced distributive programmes for how to remedy it. The challenge for governments is to ensure that such methodologies are rigorous, and accepted by the industrial community. One can imagine, for instance, products and services which are labelled, according to the extent of their ecological rucksack, the size of their ecological footprint, or the amount of environmental space they occupy.

Thirdly, as for industrial processes, products and services, governments are well placed to establish benchmarks and targets for efficiency. They can offer certification (for example, using the 'Factor X' approach). In this way, whole industry sectors within a given country or region could be moved in the same direction and guided by the same parameters. Such benchmarking – translated into reporting and labelling standards – could be as useful for investors as for consumers in assessing the quality and desirability of a product or service, corporation or sector.

Finally, beyond benchmarks and targets, governments have the responsibility of gathering and publishing data on the actual operational efficiency of products and services, and of companies and sectors themselves. In this way, industry sectors and industrial corporations will be placed in open competition with each other to improve their efficiency in the use of energy and material in the production of goods, and in the goods and services themselves. Governments themselves, in certain instances, can take responsibility for certification and labelling, particularly in the context of high-tech, or otherwise complex product and service applications. Award-schemes are a way of bringing positive attention to best practice, and encouraging positive competition among rival firms.

Regulatory and economic policies

A strong tool for encouraging industry to develop and produce dematerialised goods and services is legislation. To be effective, such legislation should be accompanied by impact assessment and enforcement.

In terms of economic policies, the classic instruments to encourage cleaner, more efficient production and pollution prevention would be various taxes, including resource extraction taxes, taxes on products (and their inefficiencies), and taxes on emissions. Resource extraction taxes directly induce *Dematerialisation*, by financially enforcing product and process efficiencies. Taxes on products, and in particular inefficient products, promote greater efficiencies at the production and use stage, and also incentivise product take-back (and therefore the whole life-cycle approach to product development). Emissions charges – whether on material emissions into air, water, or land or noise and light and other socially-disruptive emissions – encourage waste minimisation, resource productivity, and sensitivity to the environment at all stages of production.

Government: Dematerialisation (Tools and actions)

- Indicators
- Normative methodologies
- Efficiency benchmarks
- Information
- Award schemes

Government: Dematerialisation (Regulatory and economic policies)

- Legislation
- Assessment, enforcement
- Taxes/charges on resource extraction
- Taxes/charges on products
- Taxes/charges on emissions
- Investment

In each case, a certain standard can be set: 'X percentage' (or 'Factor X increase) in terms of efficiency/inefficiency of resource use. Beyond this where voluntary approaches are either seen to be unworkable or liable to benefit unsustainable companies or sectors in favour of others, governments can regulate to enforce corporate compliances with the benchmarking, certification, information and labelling procedures mentioned above. And of course, without proposing a broad shift in economic behaviour (implied by *Optimisation*), it remains open to governments to invest in the most promising *Dematerialisation* projects.

Finally, certain institutional issues (to be dealt with much more fully under *Optimisation*) can be relevant to *Dematerialisation*. Planning rules and procedures, for example, may be altered to help those industries and industry sectors that wish to remodel, retool and regroup in order to leverage the process efficiencies mentioned above. Generally, however, governments' institutional efforts will need to respond to the plans of industry itself to deliver *Dematerialisation*.

Intergovernmental and international actions

In the sphere of international relations, governments can assist overseas *Dematerialisation* by engaging in trade and transfer of modern technology: not just computers and telecommunications equipment, but state-of-the art industrial plant, and engineering technology. Capacity-building and training can also help to ensure that developing countries are able to take advantage of these new technologies.

Also, a free flow of information and understanding promoted through workshops and conferences can facilitate the debate on and progress in *Dematerialisation*. Finally, international legal instruments could be developed to help frame the global implementation of more 'sustainable' consumption patterns.

Again, it needs to be borne in mind that while governments can stimulate *Dematerialisation*, it is ultimately the role of industry to make it happen – and to reap the most immediate rewards from doing so.

Optimisation

In the sphere of *Optimisation* of consumption patterns governments themselves can do a lot, in particular as far as changing infrastructure and choices leading to *Different Consumption* patterns are concerned.

Tools and actions

National accounts are part of the economy's institutional infrastructure: they provide information on the state of the nation's economic health. If environmental and social factors are not included, national accounting falls short in providing an accurate indication of the welfare of the state. Alternative or supplementary systems of national accounting exist and have viable track records. These include the Index of Sustainable Economic Welfare (ISEW) and UNDP's Human Development Index (HDI). The UK work on green national accounts, mentioned above, looks at up to 21 indices of sustainability.⁴⁹

Coupled with national accounts, various targets can be set as clear guidance on what is to be achieved in terms of changing consumption patterns. These targets can be financial (for example, expenditure on sustainable products), social (for example, amount of time spent in positive interaction with the community per week, a high ratio of teachers per capita) or even qualitative (such as level of 'job satisfaction'). By setting targets, governments demonstrate their commitment to sustainable consumption. 'Factor X' targets, (across the whole economy, not just certain products and services) such as those adopted by the German and Austrian Governments, are powerful motivators for sustainable consumption.⁵⁰

In particular, it is important that governments assist industry sectors to adopt their own shared benchmarks and targets. Governments, for example, will have a role in allocating greenhouse gas emission reduction targets under the Kyoto protocol to the UN Framework Convention on Climate Change. Based on that, targets may be set, in collaboration with industry.

Government: Dematerialisation (Intergovernmental and international actions)

- Technology trade and transfer
- Sharing experience and best practice
- Capacity building
- Free flow of information
- Legal instruments

Government: Optimisation (Tools and actions)

- National accounts
- Targets
- Management benchmarking
- Policy guidelines
- Procurement
- Strategies and programmes
- Debates
- Education/training

Also, benchmarking and standardisation procedures for environmental management can be agreed upon between government and industry, particularly in terms of a broader life-cycle approach. Obviously, all the benchmarking, certification, information and labelling tools and actions suggested for promoting *Dematerialisation* are relevant for *Optimisation* – but in a much broader context than just efficiency.

In an attempt to tackle the main issues of SC at once the European Union is in the process of developing its 'Integrated Product Policy' (IPP) method, to provide a standard regulation and incentives platform for closing the product and resource cycle across the span of economic output, rather than for one or two products. It is also pioneering legislation on the take-back of both cars and electronic components at the end of the use-life.⁵¹

IPP is a partial example of a broader principle of policy guidelines or instruction being implemented across governments departments. It makes good sense, when one department, for example commerce, legislates on sustainable consumption, that all others (particularly including finance) adopt parallel measures, or at least do not contradict it. This requires policy integration for sustainable consumption as an explicit aim of the whole government programme.

Governments themselves are also consumers. Some OECD governments consume the single largest share of GNP, even up to 20-25%.⁵² Clearly, this position can be used to significant effect. Governments should therefore contribute to the *Optimisation* of consumption patterns by developing their own internal, cross-departmental environmental management programmes, and in terms of procurement, choosing 'greener' - thus pushing responsibility up the supply chain. The OECD has already begun to look into the potential for improving the environmental performance of governments, and in Europe and North America there are a variety of initiatives which deal with environmental procurement for governments. By pioneering methods of *Optimisation*, the governments could even serve as role models for other consumers.

Looking outward, governments are best placed to develop and promote long-range, diverse strategies and programmes for sustainable consumption. Strategically, using a framework such as the one presented here in *Consumption Opportunities*, plans can be developed which provide incentives and goals for all major agent groups, and structures for interaction around concrete activities.

Part of any consensus-led programme of implementation will be education and public debate: in the UK, for example, the government White Paper on sustainability was co-launched with a national advertising campaign, aimed at the everyday consumer, entitled '*Are You Doing Your Bit?*'⁵³ The message of this campaign was to ask consumers and citizens whether, in their everyday lives, they were 'doing their bit' – taking an element of responsibility – for the environment. Governments may wish to distribute *Consumption Opportunities*, and other materials, as basic starting points for further education, training and debate on sustainable consumption.

Regulatory and economic policies

Government regulations are essential to reconfigure the infrastructure of a national economy. A shift from products to services, as implied under a Product Service System (PSS) approach, would typically entail deregulation of the service sector, coupled with legislation on extended producer responsibility (EPR) for a life-cycle approach. Impact assessment and enforcement policies also need to be implemented to ensure effectiveness of EPR, or any other legislation.⁵⁴

Clearly one cannot directly regulate individual consumer choice, nor force companies to produce certain goods and services. However, more indirect solutions include economic policies, in particular environmental tax reform (ETR), towards taxing economic 'bads' (pollution, waste) instead of the economic 'goods' (work, entrepreneurship, innovation, clean products and services). Incremental taxes on resource use (regardless of pollution) can help encourage efficiency through the production chain, and beyond – they will likely create pricing signals which induce changes in consumption patterns.

Government: Optimisation (Regulatory and economic policies)

- Legislation
- Assessment, enforcement
- Environmental Tax Reform (ETR)
- Removal of perverse subsidies
- New investment, subsidies, tax breaks
- Internalisation of costs (Polluter Pays Principle)
- Tradable emissions permits

ETR, however, will only be effective with the removal of so-called 'perverse subsidies' which promote and protect inefficient and ecologically unwholesome economic activities. Removing these subsidies will expose such activities to their true costs, diminishing their viability, whilst ensuring jobs and economic prosperity through other, newer industrial means. These new sectors – for example, renewable energy technologies – ought to be helped by transferring subsidies and other economic benefits, including investment loans and grants and tax breaks, to them.

One industrial reform which governments can enact, using both legislative and economic approaches, is internalisation of costs – that is making the producer pay for the full price of production (with environmental and social damage included), which would then be reflected in costs. In order to reduce the cost and burden to producers, flexible market mechanisms such as 'trading bubbles' of emissions of certain pollutants can be developed, to let the market decide, where best to reduce emissions. In the US, this has worked successfully for reductions of sulphur dioxide.⁵⁵ A similar approach is being discussed globally in terms of greenhouse gasses, under the UNFCCC Kyoto Protocol.

Intergovernmental and international actions

An important contribution governments can make to sustainable consumption in an international context is to promote sustainable, mutually beneficial international trade. In this context, best practice dissemination and a general practice of experience sharing would be helpful. This is where the intergovernmental agencies can help, with their long expertise in capacity-building.

The basic parameters of trade-for-sustainable-consumption are in the first place a focus on new products and services for Northern markets. Developing countries have, in many instances, a competitive advantage when facing the prospect of tooling and retooling for development of sustainable products and services which will become more and more marketable as consumption patterns shift in the North.⁵⁶ Secondly, Southern producers can also expect to find sizeable markets of their own for sustainable goods and a services opening up, as incomes rise but environmental legislation also increases in step. Such sustainable industrial development in the South will require openness and cooperation on the part of Northern governments and industries. Northern markets will need to be more open to Southern goods produced sustainably, and Northern technology will need to be made more readily available to Southern developers. The so called 'Clean Development Mechanism' that are envisaged in the Kyoto Protocol are an interesting, if controversial, example on how this process could be brought about in the future.

Finance is a crucial aspect in all such international dealings. The international finance institutions must be ready to support the efforts of developing and transitional economies to respond to the challenge of sustainable consumption. In particular, the regional development banks can begin proactively to define and develop investment opportunities in the field of new and environmental technology, and infrastructure designed for sustainable consumption. Compared with the prospect of tentative investments in now-outdated technology and infrastructure, this forward-looking approach seems more desirable from the financial, social, and environmental aspects: It has the advantage of avoiding risk, looking to the long-term, and protecting social and environmental assets.

Bilateral co-operation is essential where issues are primarily trans-border. Sustainable water consumption, for example, is an issue which can and should be addressed by the water-sharing states with an interest in the management and use of the water body. Here, and in many other intergovernmental contexts, formal agreements between nation-states in the form of conventions can be the decisive factor in promoting sustainable management and use of resources.

Finally, it is legitimate and important to point out that cultural practices and traditional techniques from countries that are on the road to development may be crucial to sustainable consumption, providing examples for better and more sustainable development in the West and North. Western medicine, for instance, has already discovered that traditional medical practice can provide for successful complementary alternatives. In this context the loss of the traditional culture is beginning to be recognised as an unnecessary and undesirable aspect of globalisation.

Government: Optimisation (Intergovernmental and international actions)

- Strategic trade
- Sharing experience and best practice
- Capacity-building
- Shared management
- International conventions
- Finance
- Traditional knowledge
- Bilateral Co-operation

5) Industry tools and actions

Dematerialisation

It is in the field of industry that *Dematerialisation* as a means to sustainable consumption works best. Innovative industries stand to benefit from the new markets created by broad-scale *Dematerialisation*, which relies on methodologies, benchmarks and data dictated by *Factor X* reductions. Without these, the economic playing field on which new products are developed will not be level, and will thus distort market efficiency and competitiveness.

At the head of industry's efforts to dematerialise must lie pollution reduction. Pollution represents not only the primary impact of industry on the environment, but it is also equivalent to the waste generated by industrial activity. Waste management, by definition, is the first target for efficiency gains. Unaccounted waste can be considered as a 'Non-Product Output' (NPO) which should be integrated into company and sectoral reports and analysis. Shrewd investors may wish to know just how much pure waste – resources bought and not used productively – a company generates. Positively, companies can look for reductions in NPO in order to maximise efficiency. 3M, as an indicative example, has designed its own waste-reduction strategy called '3P' – 'Pollution Prevention Pays'.⁵⁷

Beyond 'end-of-pipe', pollution-related *Dematerialisation*, industry can undertake more proactive strategic planning for *Dematerialisation*. In the area of *Product Efficiency* four methodologies stand out as being particularly developed and promising:

- Ecodesign.
- LCA (Life-Cycle Assessment).
- EPR (Extended Producer Responsibility).
- IPP (Integrated Product Policy).⁵⁸

Each of these four approaches addresses the claims of corporate, social and individual stakeholders involved in the chain of production, and takes product policy beyond the realm of material efficiency into the sphere of social protection and development. Each approach concentrates on the supply-side of the economy, and in particular on the actions of industry. In all four, the role of governments is less central, and the role of the consumer (accepting new products and services) is to some extent taken for granted.

IPP is a good example of policy development which, by capturing a range of issues in one package, makes legislation more efficient for industry: less regulations to administer, more competitive and efficient performance overall.

New socially-minded endeavours can be blended with these technical efforts for sheer efficiency to promote craftsmanship, local production chains (for regional economic stability), and new management structures, all of which deliver 'efficiency' in terms of the well-being, loyalty and productivity of staff.

Furthermore, as suggested above, products (particularly as a result of ecodesign) can be rethought with a new emphasis on quality and durability, and also on upgradeability. Whilst increased durability may possibly imply more resources used at the production stage (to make a more robust product), in a more sophisticated analysis of resource-use (for example, material input per service-unit achieved, MIPS) applied across time, we can see how more durability will encourage greater resource efficiency. In some cases products will need to be designed for upgradeability. This is particularly so with computers where internal technology changes fast, but the casings and input devices need not be replaced when the internal hardware is being upgraded.

Industry: Dematerialisation

- Pollution prevention/Waste management
- Product efficiencies
 - Ecodesign
 - LCA
 - IPP
 - EPR
- Craftsmanship, local production, new management
- Durability
- Upgradeability
- Environmental management
- Process efficiencies
 - Cleaner Production
 - Eco-efficiency
 - Industrial Ecology
- Packaging reduction
- Research
- Collation and dissemination of best practice
- New markets

Not least, both staff and consumers involved in producing, and using crafted, high technology and high quality goods may become more loyal to the brand and company responsible for these improvements, but also experience greater quality of life.

On the side of *Process Efficiency*, an entire industry process, or indeed sector, is taken as the starting point. A first and most important tool for achieving *Process Efficiency* is environmental management (EM). EM implies reviewing the industrial processes involved in production with a focus on ensuring their environmental efficiency. Generally, this can 'clean up' an industrial process, but tends not to lead to overall re-design. For more substantial process efficiencies, the following methods have been developed:

- Cleaner Production.
- Eco-Efficiency.
- Industrial Ecology.

All these methods aim to review and remanage the whole cycle of industrial inputs, usage and outputs, in order to maximise production, whilst stabilising or reducing material input and eliminating waste. Other forms of this enterprise are now emerging, including methods known as 'Industrial Metabolism', 'Total Material Productivity' and 'Zero Emissions'.⁵⁹

Outside of the strict product and process efficiency, attention should be paid to packaging as a significant source of production-related waste of materials. Whilst packaging can be essential, it can also be badly designed and at times unnecessary. For example, some toothpaste is now packaged in such a way that it can stand on the shelf on its cap: it is securely packaged, manageable for stock-keeping, and presentable for display purposes, and thus requires no cardboard shell. Reduction of packaging is clearly a producer's responsibility, and could make a significant contribution to *Dematerialisation*.

There has already been a large amount of cooperation between industry and other stakeholders in this area. UNEP has been driving Cleaner Production, holding High-Level Seminars at periodic intervals to promote the concepts and practice, producing a variety of training and information documents, and holding capacity-building events around the world. At 'CP5', the fifth UNEP High Level Seminar on Cleaner Production which was held in Seoul, Republic of Korea, in October 1998, UNEP launched its *International Declaration on Cleaner Production*. The declaration encourages sustainable production and consumption practices. Furthermore, it calls attention to the need for creating innovative solutions for cleaner production "by supporting the development of products and services which are environmentally efficient and that meet consumer needs".

In association with efforts towards *Dematerialisation*, industry should undertake research to assess the viability of their industrial processes and products. This includes market research to understand the desire of the market for dematerialised products, particularly if such products should be significantly different from non-dematerialised counterparts. Through industry associations, in governmental forums, or in private groupings, companies can and should share this research, and their experiences in seeking efficiency gains. Whilst sharing best practice may seem anti-competitive, in fact it is likely to improve industry performance generally. Also, industry which is primed by its own efforts in relation to resource efficiency is likely to either resist government regulatory intervention, or at least be in a position to guide and receive it favourably.

One special area for new market development is of course the developing world and 'transitional' economies: where there are booming markets for cars, televisions, washing machines, telephones and the like, it becomes both especially important – but also especially lucrative – to expand markets for dematerialised products and services.

Optimisation

Dematerialisation work can extend well beyond the sphere of products and processes into promoting a more service-oriented economy and *Optimisation* of consumption patterns. The process of shifting from product orientation to service orientation is based on what is called the

Product-Service Systems (PSS) (see above), and clearly this blends *Dematerialisation* (particularly through process efficiencies) with *Optimisation*.

The worldwide pioneers of this approach include Xerox (remanufacturing office machines), Interface (refitting carpets), Dow Chemical (ensuring chemical take-back and reconstitution, closing the resource cycle), Electrolux (service for launderettes ranging from installation to training and financial assistance) and Philips (eco-design and green system innovation).⁶⁰ UNEP has been working with such companies and experts on PSS, to develop clear guidance on what will be workable and profitable.⁶¹ Clearly, this development itself is a natural extension of work on life-cycle assessment and integrated product policy.

But industry's contribution to the *Optimisation* of consumption patterns can reach beyond its part in an overarching PSS approach. Far-sighted corporations, of which there are more and more examples, are using their EM framework as a basis and guide for more substantial shifts in business orientation. Conceiving EM in broad terms, beyond basic efficiency gains, the whole ethos of the company can be reconsidered. A methodology which is already broad in application, and can be made broader is 'Total Quality Management' (TQM). This can be coupled with EM for a wide search for environmental improvement.

Such a search might lead to reconsideration of the product (or service) base, the client base, location of the office and plant, suppliers, systems of packaging and distribution, the issues of product take-back. Companies can even become involved in the social debates about the role of consumption. In other words, for companies to participate in *Optimisation* of consumption patterns, they need to explore how, in addition to a general efficiencies and use of a PSS model, they can change their outlook and practices to facilitate positive change in consumption patterns. If companies are willing to be flexible, options open up on all sides.

As a starting point for broader contributions, industry can invest time, money and expertise in further research about PSS and the various EM practices. Detailed and extensive research on PSS is in short supply, and since some experiments in PSS have been only partly successful more analysis of best practice will be useful. Investors also are in the position to contribute effectively to research that would benefit both themselves as companies as well as society as a whole.

Industry can also contribute to optimising consumption patterns through more accurate and comprehensive reporting. Reporting for industry, in terms of social and environmental performance, is now develop standard practices (crucial for comparison), based on full disclosure and a wide range of indicators. There is a now move for industry to consider itself has having a 'triple bottom line': having to deliver not just in terms of profits, but also in terms of tangible environmental and social benefits, and therefore having to report fully in all three respects. Reporting in this way, policymakers, lobbyists, investors, analysts, industry agents and the public will gain insight into the changes needed for sustainable consumption.

At the same time, industry must take responsibility for better labelling of products and information about services: not just *more* information, but more useful and accurate information, delivered in a more comprehensible way. For example, most consumers will want to know that their foodstuffs contain 'E-numbered' artificial additives – but they may also want to know what the E-numbers mean, and what their harmful results may be. In a similar way, customers of financial and banking services are increasingly interested in where their money is being invested. UNEP's Financial Institutions Initiative is looking at this question, among others in the financial sector. The UK Government, for example, has just legislated to ensure that pension companies declare precisely where their money is invested, so that the policyholders themselves can assess the ethical status of the return.⁶² Two examples of successful labelling initiatives (which are themselves indicative of successful interaction between governments and industry) are the 'Forest Stewardship Council' (FSC) label to indicate sustainable wood products and the new 'Marine Stewardship Council' (MSC) which proposes to label environmentally-sound fish/seafood products.⁶³ Both initiatives are far from mere end-of-supply-chain tags: they imply serious planning, implementation and monitoring for industries and suppliers involved.

The FSC and MSC, indeed, are also advanced forms of 'codes of conduct', the most common instrument in voluntary initiatives for social and environmental ends. Even where the stringency of the FSC and MSC processes is not deemed viable or necessary, there remains tremendous

Industry: Optimisation

- PSS
- Environmental management
- Research on EM & PSS
- Reporting
- Information/labelling
- Codes of conduct
- Collation and dissemination of best practice

scope for industries to develop suitable codes of conduct to guide their performance and development, and make their actions more transparent to the relevant stakeholders. Codes of conduct can form the basis for industry alliances and consortia in the context of which a general sharing of best practice can become mutually beneficial exercises in improving performance, enhancing public confidence, and reducing exposure to economic, strategic and regulatory risk.

It must be pointed out again, however, that such experiences are not uniformly positive. Industries have in the past experimented with various labelling techniques, and created voluntary associations, which have in some instances not improved performance environmentally, and in others not significantly interested the consumers. What becomes useful here is a frank exchange of best practice among industry members, even across sectors, to enhance an understanding of how such efforts actually achieve their environmental ends, whilst also engaging and inspiring the consumer. Again, pan-industry collaboration can ensure that regulation is either unnecessary, or at least harmonised well to industry needs and capacities.

6) Civil Society actions

Where individual consumers and citizens are concerned, the first and crucial recognition is that a strong strategic approach such as the one presented here enables great strides toward sustainable consumption patterns without impossible or unrealistic changes being demanded of consumers. The potential problem of agency and assignation of responsibility is addressed by adopting a cycle of responsibility, as described above.

Dematerialisation

It has been noted above that *Dematerialisation* is primarily an industry activity, with appropriate support from governments. Given this, the role of consumers in *Dematerialisation* is not easy to identify. One tangential role, other than of course buying dematerialised products and services, is in lobbying industry and government for dematerialised goods. By expressing their preferences both at the till and by other means (specifically: letter-writing, campaigns, petitions, support for lobby-groups, etc) citizens and consumers can show that dematerialised goods are desirable and necessary. Furthermore 'watchdog' groups can serve to ensure that consumers can be confident of the quality of the goods that they are purchasing. This can lead usefully to information sharing where important information about products and companies is networked among consumer and community organisations, to promote awareness and changes in consumption patterns. Of course, products that use less energy and materials are likely to be cheaper for the consumer in all ways, an incentive of its own.

Civil Society: Dematerialisation

- Lobbying
- Corporate analysis
- Information sharing
- Shopping for dematerialised products

Optimisation

In the context of *Optimisation* of consumption patterns, the consumer and citizen have critical roles in making consumption patterns *Conscious* and more *Appropriate*. In fact, in this area governments and industry can do very little, besides raising debates and providing information.

Conscious Consumption

In the sphere of conscious choosing, consumers themselves can initiate community-based educational initiatives as well as lobby campaigns to ensure that they not only assimilate the information about what they consume but obtain it in the first place.

Once information is in the public domain, consumers can organise to share it. For example, families and households in a neighbourhood – particularly those which use co-operative purchasing power – may be willing and able to share and network consumption-related information. Local networks, backed up by the lobbying and research power of national and international consumer advocacy groups, can be a powerful force in ensuring that more and more companies are compelled, either through public pressure or legislation, to provide information on their products and services, and overall corporate performance.

Conscious Consumption means active discernment and informed selection. It is important for consumers to 'enjoy shopping for quality'. Indeed, if consumers can't *enjoy* consuming sustainably, then sustainable consumption will be difficult to achieve.

Civil Society: Optimisation

- Conscious Consumption
- Conscious choosing
- Conscious using
- Appropriate Consumption
- Civic participation
- Cultural renaissance
- Religious, and spiritual development
- Local debates

In addition, consumers can engage in creative, collaborative consuming. 'Sharing' can be modern, efficient and effective, without any reduced standard of living. In fact, increased community interaction may well result in heightened quality of life. Car-pooling and car-sharing are two models which are rapidly becoming attractive and realistic options for neighbourhoods and groups of families with busy schedules, confronted with congested streets and limited parking spaces. The Swiss 'Mobility' car-sharing scheme now has 15,000 members, with one car per 20 members.⁶⁴ This is another good example how sustainable and cooperative solutions actually improve personal freedom and choice. Thus a car-sharing scheme allows the participants to use cars in different cities, and if they occasionally need to use a different model (for example a mini-van), they do not have to buy it.

Local co-operative shopping is also a realistic option for many communities, particularly those that do not have access to nearby shopping facilities. The Seikatsu Consumer Cooperative in Japan is one of the better-known consumer initiatives, with over 300,000 members. This group is so powerful collectively that they negotiate their own deals, for example for milk, with local suppliers.⁶⁵ More simply, creative, productive but ecologically sensitive gardening – on rooftops, in back gardens – is a means to consume sustainably in a very literal way.

Furthermore, consumers can engage in ‘saving’ their products from damage and unnecessary wear, and from producing unnecessary waste, by learning skills of careful, conscious use. For example, car drivers are now being encouraged by car manufacturers to learn ‘green driving’ techniques which lessen both environmental impacts and wear on the vehicle itself.

A couple of the better-known broad-scale approaches to *Conscious Consumption* which have emerged include a greater focus on and commitment to the productive capacity of the region – known as ‘bioregionalism’ (of which a good example is ‘permaculture’) – and so-called ‘voluntary simplicity’ or ‘downshifting’.

Appropriate Consumption

Appropriate Consumption

- Reassessing drivers and levels of consumption
- Evaluating consumption with relation to civic, cultural and religious/spiritual quality of life
- Reviving civic, cultural, and religious/spiritual quality of life

The final challenge of sustainable consumption is to reassess the role of consumption in society, and its relation to other factors contributing to quality of life. What decision-makers and institutions can do is raise important questions and bring forward important information about measurable levels of consumption and their apparent drivers. In addition, if levels of consumption are too high, governments have a responsibility to inform their electorates of the damage that is being caused. But, the real agents remain citizens: not just in their capacity as ‘consumers’ but as individuals with a wide range of interests and responsibilities. They themselves must assess the levels and drivers of their own consumption, and the broader issues described below.

One crucial pathway to sustainable consumption remains to approach citizens asking them what they would consider a suitable *replacement* for the quality of life delivered by consumption and consumption-related activities. Answers to this question have included greater time for family and community life, more involvement in cultural practice and development, and more time for religious and spiritual observance. Therefore, as pointed out in Section II, what is crucial in assessing *Appropriate Consumption* is continual discussion of quality of life beyond the economic sphere. Sustainable consumption debate has been thoroughly limited by its reference only to economic models, concepts and tools. Beyond quality of life achieved through consumption – which some would call ‘standard of living’ – the elements of civic, cultural and spiritual quality of life need serious consideration and space to develop. Thus, programmes for sustainable consumption cannot afford to ignore these dimensions.

What may be required is a ‘renaissance’, or revival, of autonomous social development at the civic, cultural and spiritual/religious levels. Promoting civic participation – and not just in terms of awareness of consumer issues – can itself lead to enhanced quality of life. And culture and the arts are surely due for a ‘renaissance’ at the level of communities: before the age of mass-media, participation in culture was much more likely to be in terms of performance or at least live attendance, rather than passive ‘consumption’. Finally, there is the danger – objectionable when merely mentioned – that our religious and spiritual observation becomes bracketed as ‘consumption’ also, if not swept away entirely. Clearly this cannot be for the best. Religious and spiritual life is, according to all major traditions, about the transpersonal, altruistic, and self-regulating – the very antithesis of self-serving consumerism.

All of this adds up to the pressing need for large amounts of reliable, engaging information available to consumers and citizens, and supportive structures through which it can be exchanged and the relevant issues debated. Ultimately, local debates on consumption, raising these deep questions over extended periods, need to involve all parties, and to be prepared to face up to difficult conclusions about the nature of social and economic organisation. Society as a whole needs to pick up this challenge of positioning consumption in the round of human activities – no one group can sustain such a challenging and influential debate. It may be that consumption patterns in the ‘modern’ style are simply socially unsustainable more profoundly than they are environmentally unsustainable.

Even *Efficient Consumption* (based on dematerialised products and services), when delivered in a pressured and artificial context of consumerism, may soon become undesirable. People's capacity to enjoy buying and using, and people's capacity to plan their lives outside of the consumption experience, can well be jeopardised by overemphasis on consumption of whatever type.

UNEP DTIE in 2000 published an article reflecting a small scale study on the 'consumption patterns' of global consumers, a group of consumers with similar tastes and habits. The interaction was conducted via an email-based survey in six major cities around the world: Sao Paulo, New York, Bombay, Sydney, Lagos and Paris. This research proposes to help understand better how consumers identify themselves, and what they are looking for in – and behind – the products and services they buy. ⁶⁶

7) Some Examples

Below are a few summary models of sustainable consumption in a variety of key sectors. In each case, governments, industry and consumers must work together to ensure the appropriate 'win-win' results, integrating a package of policy measures into a strategy including both *Dematerialisation* and *Optimisation*. The consumption patterns will be altered, but the aim remains to achieve the same – or better – quality of life.

Transport
• Policies for environmentally sustainable mobility, using many modes of transportation not just private cars. • Investment in public transport infrastructure, and removal of 'perverse subsidies'. • Internalisation of full costs of personal, motorised transport via taxes, road charges or tolls. • Private-sector expansion into multi-modal mobility schemes, vehicle leasing, clean fuels and clean vehicles. • Social debates regarding the position of 'mobility' and 'access' in achieving fulfilment.

Planning, Cities and Housing
• Planning policies which promote environmentally and socially sustainable consumption, minimising travel to work, amenities, and leisure. • Mixed-use, architecturally diverse, human-scale developments. • Planning for combined municipal heat-and-power generation, in so-called cogeneration plants to minimise energy use. • Housing strategies such as rainwater collection, improved isolation and ventilation, individual power-creation through solar cells, 'low-energy houses'. • Social strategies for sustainable community consumption – local growing, collective purchasing.

Energy
• Policy and investment shift toward more sustainable, renewable energy sources. • Shift to 'energy service' provision, delivering heat, light, and power, not just raw fuel. • Industry innovations to deliver low-energy products in every category. • Social education for energy conservation.

Agriculture and Food
• Policy and investment shift towards 'organic' and sustainable agriculture. • Economic incentives for ecological land management. • Social programmes of engagement in agriculture, regional purchasing.

Financial Services
• Regulatory shifts in favour of socially and environmentally favourable investment. • Transparency of dealings. • Environment as key feature of risk assessment. • Special investment packages for 'green start-ups'.

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|--|
| • Finance for dematerialised technology: Cleaner Production, Ecodesign, Life-Cycle Assessment. |
| • Support for local currencies, community credit, and social investment. |

Media

- | |
|---|
| • Regulation of commercial media and advertising representations. |
| • Incentive structures for best practice in environmental reporting and promotion. |
| • Social debates on role and effect of media and advertising on consumption patterns. |

8) Summary: Opportunities for All

Consumption Opportunities

- Quality of life as primary theme
- Systemic SC as way to approach SD
- Dematerialisation/Optimisation groups policies coherently
- Dematerialisation/Optimisation bridges material analysis and human issues
- Questions create flexibility and open opportunities
- Discussion and action beyond economic sphere
- Agents' roles are clarified
- Modular framework as basis of specific actions

In what sense does the strategic approach presented in *Consumption Opportunities* actually help sustainable consumption become a path of opportunities for governments, industry, consumers and society at large?

In the first place, *Consumption Opportunities* takes as beyond question that sustainable consumption must be based on a search for enhanced quality of life. No policy approach can hope to retain the interest of people, nor undergo the scrutiny of the market, without a clear and beneficial aim. Abstractly attempting to 'correct' for 'overconsumption' or environmental irresponsibility is not likely to be viable. The corollary of this approach is the focus on opportunities: an incentivised, innovative path to changed consumption patterns.

Secondly, by overcoming the five critical problems of the sustainable consumption debate – problems of political and public perception and conception – the *Consumption Opportunities* approach creates real political space for movement. As mentioned in Section I, it contains five answers that individually address and resolve each of the aforementioned problems, while together they form the overarching strategy. In sum, the five answers are:

- 'Systemic' sustainable consumption can be seen as an inversion of traditional ladder of responsibility of sustainable development, coming from the standpoint of consumers and citizens and from there extending to industry and government.
- The *Dematerialisation/Optimisation* approach groups diverse policies in a manageable way.
- The *Dematerialisation/Optimisation* split is also crucial in helping us overcome the otherwise problematic relationship of material and technical approaches to human, lifestyle and value-based issues.
- The presentation of the strategic elements as questions designed to release positive, self-determined outcomes promotes an opportunities-focussed debate, in which benefits for agents are clear. Sustainable consumption, in this sense is about rewards for new paths struck. As is clear from above, much of it can deliver win-win solutions.
- *Conscious and Appropriate Consumption* as strategic elements take us beyond the standard economic definition of consumption – in a controlled, transparent way – into the realm of human aspiration and development.

In addition to these clarifications, action is facilitated by identifying realistic roles for each major agent. Liability is not simply assigned to consumers (and industry) in general, but instead responsibility for each change is allocated to the best suited agent. These clarified roles, with the tools, actions and policies clearly isolated, ought to help, as suggested above, in the establishment of national sustainable consumption coalitions which themselves both embody, and promote generally, 'cycles of responsibility' leading to positive changes in consumption patterns.

Consumption Opportunities, in this way, proposes a modular, scaleable and – it is hoped – widely applicable starting point for focussed debate and realistic action on sustainable consumption. A summary of the opportunities that may be realised through such an approach to sustainable consumption is contained in the following tables:

Government opportunities

- | |
|---|
| • Less disruption & cost caused by environmental damage. |
| • More efficient economy, level economic playing-field, global competitiveness. |
| • Costs for environmental damage no longer solely carried by government. |
| • Less-risky infrastructure, delivering greater quality of life. |

- Integrated policy framework, across environment, economy and society.
- Implementation of international legal commitments.
- Quality of life – delivering but also going beyond material standard of living for all people.
- Far-sighted strategy, long-term electoral advantage.

Industry opportunities

- Savings through efficiency.
- Enhanced profile.
- Consumer confidence/loyalty.
- Marketshare through green credentials.
- Cost reduction through reduced regulatory costs.
- Competitive position enhanced by reduced exposure to perceived or actual regulation.
- General competitive advantage through proactive management of above issues.

Civil Society opportunities

- Cleaner environment, better health, more interactive communities.
- Products and services, delivering better quality of life, with less cost.
- Consumer power through conscious choosing. More enjoyable consumption from conscious choosing.
- Community development through conscious and conscientious using.
- Cultural and personal development through *Appropriate Consumption*

9) Next steps: Sustainable consumption *now!*

Next steps

- Engaging all agents
- Action **now!**
- Sustainable Consumption Opportunities for Europe (SCOPE)
- National SC coalitions
- Additional materials

The first important step on the basis provided by *Consumption Opportunities* is to further identify and engage all agents in the debate on sustainable consumption. UNEP's portfolio of activities is already reaching out to diverse sectors and agent-groups: youth, advertising, business, and others. In particular, governments need to be brought further into the debate and encouraged to initiate medium-term strategic debates and programmes on sustainable consumption: it is in the context of this type of broad, strategic work that *Consumption Opportunities* is expected to be most useful. Above all, the balance of responsibilities and the need for action *now*, however tentative, perhaps should be the emphasis of follow-up work to this strategic report.

In order to encourage an action-oriented debate on sustainable consumption, which builds alliances and activities with all relevant agents, UNEP has started to work regionally, holding Roundtables and stakeholder meetings to discuss the challenge of sustainable consumption. In particular, UNEP Regional Office for Europe is launching a pan-European multi-stakeholder dialogue process, using *Consumption Opportunities* as the starting point: Sustainable Consumption Opportunities for Europe (SCOPE). SCOPE will help develop sub-regional debates and networks dedicated to energising the debate on sustainable consumption, and helping to translate complex challenges into manageable and realistic programmes of engagement, innovation and opportunity. In particular, UNEP is already working with partners across Europe to develop national sustainable consumption coalitions, as focuses for both debate and concrete actions towards sustainable consumption.

In addition to *Consumption Opportunities*, supplementary material will be developed to explore in detail the specific challenges of the European context, looking at the consumption-related issues for 'transitional' economies, the new factors raised by accession to the European Union, and specifics of regional culture as well as economic and political autonomy. Further policy and training materials, and detailed manuals for development of policy and action programmes based on *Consumption Opportunities*, are possible additions to the set of tools UNEP hopes to offer.

UNEP invites all those reading and intending to use *Consumption Opportunities* to become involved at all levels: to assist with the general debate on sustainable consumption, to contribute to regional policy development and action debates, and to assist with the generation of tools. Sustainable consumption is, perhaps more than any other policy challenge in sustainability, a collaborative and integrated exercise. UNEP looks forward to expanding its ability to promote debate and action on sustainable consumption, and to reveal new opportunities, with governmental, intergovernmental, industry, civil and research partners. Contact details are found inside the front cover of the report.

Sustainable Consumption: Documents & Events

Sustainable consumption and production rose to the fore of sustainability debates at the Rio Earth Summit in 1992. Chapter 4 of Agenda 21 recognised that “the major cause of the continued deterioration of the global environment is the unsustainable pattern of consumption and production, particularly in industrialised countries” and called for action to “promote patterns of consumption and production that reduce environmental stress and will meet the basic needs of humanity”. In chronological order, this section outlines the subsequent work on sustainable consumption and production, including conferences, workshops and key documents.

Document: UNEP IEPAC (1993), *Cleaner Production Worldwide*. Paris: UNEP IEPAC.

This document uses case studies from around the world to show how industries and consumers can gain from environmental benefits and cost reduction through the use of cleaner production.

Document: UNEP IE (1994), *Government strategies and policies for cleaner production*. Paris: UNEP IE.

Published with the aim of showing decision-makers how cleaner production can lead to both environmental and economic gains, this document outlines some of the strategies and policies that governments can use to stimulate cleaner production in developing countries and economies in transition.

Event: Symposium on Sustainable Consumption. Oslo, 1994.

This symposium brought together ministers and observers to follow-up on Agenda 21 recommendations and outline an agenda for change towards sustainable consumption, to include raising public awareness and providing incentives and strategies. It also proposed the first working definition of sustainable consumption, that it is “the use of goods and services that respond to basic needs and bring a better quality of life, while minimising the use of natural resources, toxic materials and emissions of waste and pollutants over the life-cycle, so as not to jeopardise the needs of future generations”.

Document: UN Secretary General (1995), *Report of the Secretary General – “Changing Consumption Patterns”* New York: UN CSD.

This analytical report looks at the use of policy measures such as economic instruments for changing consumption patterns in developed countries, with special reference to the sectoral issues on the agenda of the Commission on Sustainable Development at its third session.

Event: Ministerial Roundtable Conference on sustainable production and consumption. Oslo, 1995.

The objective of this roundtable was to prepare elements for an international work programme on sustainable production and consumption as mandated by the second session of the CSD (May 1994), for discussion at the third session. In reiterating the need for the developed world to take the lead in promoting sustainable production and consumption, it provides recommendations for key actors (governments, business, NGOs and citizens) to work together to bring about sustainability through improving understanding, applying tools for modifying behaviour and monitoring and evaluating performance in these areas.

Document: UNEP IE (1996), *Life-Cycle Assessment: what it is and how to do it*. Paris: UNEP IE.

This report provides background information on the concept of Life-Cycle Assessment and examples of its current practice.

Document: OECD (1997), *Sustainable consumption and production*. Paris: OECD.

This document summarises the findings of the first two years of the OECD work programme on sustainable consumption and production, and as such includes a council recommendation and its sister resolution aimed at spurring on the governments of member countries to reduce the environmental impacts of their own operations and decision-making processes.

Document: Robins, N. and Roberts, S. (eds) (1997), *Unlocking Trade Opportunities: changing consumption and production patterns*. IIED and UNDPSCD.

This document was commissioned by the UN Department of Policy Coordination and Sustainable Development as part of its implementation of Agenda 21. It shows how producers in developing countries can exploit the niche of environmental responsibility in their export markets (particularly in the developed world) by means of a variety of case studies; e.g. fair trade agricultural products, and sustainable non-timber forest products.

Document: UNEP DTIE (2001) *Cleaner Production: a guide to sources of information*. Paris: UNEP DTIE.

This summary booklet presents sources of information that may be of assistance to companies looking to implement cleaner production, namely cleaner production centres and activities, publications, databases, audio visuals, training courses, institutes and training support materials.

Event/Document: Robins, N. and Roberts, S. (1998), *Consumption in a sustainable world: report of the workshop held in Kabelvåg Norway June 2-4 1998*. Oslo: Norwegian Ministry of Environment.

This meeting brought together pioneers from business, government and citizens' organisations to discuss how to give rise to a chain of opportunities, emphasising the consumption side. Drawing on a range of positive experiences from both the developed and developing worlds, over 50 recommendations were produced for improving analysis, raising awareness, integrating the demand-side into policy development, making markets serve sustainable consumption and investing in change.

Document: Robins, N. and Roberts, S. (1998), *Upshifting? Exploring the challenge of sustainable consumption in the South*. London: IIED.

This discussion paper concentrates on the South and how they can bring about sustainable consumption through "upshifting"; that is, meeting basic needs and empowering consumers to improve their quality of life, whilst leapfrogging the stage of unsustainable consumption evident in the Northern model. It concludes by recognising that immediate action is critical, as with accelerating rates of globalisation there is increasing danger that the South will begin to become entrenched in unsustainable patterns of consumption, as in the North.

Event/Document: UNECE (1998), *Fourth ministerial conference: Environment for Europe Aarhus, Denmark, 23-25 June 1998, Recommendations to ECE governments on encouraging local initiatives towards sustainable consumption patterns*. Geneva: UNECE.

The Environmental Programme for Europe, as endorsed at the 1995 ministerial conference Environment for Europe, aims to make Agenda 21 more operational in the European context and encourages the necessary changes in consumption patterns and individual lifestyles through awareness-raising, technical regulations and economic incentives. This report outlines procedures for encouraging sustainable consumption which can be implemented at the local (e.g. urban) level.

Event: UN CSD 7th Session. New York, 1999.

The 7th Session of the CSD deal specifically with sustainable consumption, as both a 'cross-cutting' and 'overriding' issue. Classic issues were raised by delegates, including disagreement over 'common but differentiated responsibility' for changes in consumption patterns, with the North required to act more promptly and fully than the South to correct its own excesses and environmental interventions in trade being cried off as 'barriers to trade'. The event was particularly marked by the updating of the *UN Guidelines on Consumer Protection* to incorporate sustainability criteria, and the launching of the *Oxford Commission on Sustainable Consumption*.

Document: UNEP DTIE (1999), *Towards the global use of Life-Cycle Assessment*. Paris: UNEP DTIE.

This is a follow-up document to the 1996 publication. Using data from a global survey on the use of LCA, it shows the current level of acceptance and use, and reviews the main barriers to a more widespread adoption of the technique. Based on these, UNEP outlines an Action Plan to promote the wider use of LCA worldwide.

Document: UN Secretary General (1999), *Report of the Secretary General – “Changing Consumption Patterns”* New York: UN CSD.

This report focuses on the work done by the UN, other inter-governmental organisations, governments, business and industry, and non-governmental organisations towards the programme of changing consumption and production patterns, as adopted by the CSD at its third session in 1995.

Document: Charkiewicz, Eva (2001), *Transitions to Sustainable Consumption Production and Consumption: Concepts, Policies and Actions*. Maastricht: Shaker Publishing.

This book is the definitive overview of the international sustainable consumption debate to date. Summarising in detail all the contributions, the book challenges the main assumptions of the debate from a variety of alternatives and radical perspectives. Concluding not that policies and concepts are lacking for successful piloting of sustainable consumption, but that institutions and ideological frameworks are hampering progress; the book is upbeat about possibilities, though realistic about the little achieved to date. The annexes are unique in offering summaries of issues and links to resources in the broad consumption-related debate.

About UNEP

UNEP and Sustainable Consumption

- 'Cleaner Production' since 1989
- European Roundtable, 1995
- 'Sustainable Consumption' programme since 1998
- Advertising and Communication
- Regional Initiatives
- Youth
- 'SC.net' information network
- Life-cycle initiative
- Product-service systems
- UN Consumer Guidelines
- Green procurement
- GEO-2000

UNEP's Mission is:

To provide leadership and encourage partnership in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations.

UNEP has set itself the task of promoting sustainable consumption, alerting the world's decision-makers to the real issues behind today's environmental crisis. Therefore, in its major publication, the *Global Environmental Outlook 2000 (GEO-2000)*, the need for changes in consumption patterns is articulated in the strongest possible terms:

*"The continued poverty of the majority of the planet's inhabitants and excessive consumption by the minority are the two major causes of environmental degradation. The present course is unsustainable and postponing action is no longer an option."*⁶⁷

UNEP is aware that sustainable consumption may be neither easy to conceptualise nor simple to implement. But given sufficient clarity, courage and vision it may be possible to turn what is, as *GEO-2000* suggests, at the root of the environmental crisis into a major new horizon for economic and social development.

This report has been developed at the request of UNEP Division of Technology, Industry and Economics (DTIE) and UNEP Regional Office for Europe (ROE). It is a parallel to the 1994 UNEP DTIE document *Government Strategies and Policies for Cleaner Production*, which presented the eco-efficiency practice of cleaner production in terms of the strategic policy solutions likely to make it more widespread.

UNEP Division on Technology, Industry & Economics

The mission of UNEP DTIE is:

To encourage decision-makers in government, industry, and business to develop and adopt policies, strategies, and practices that are cleaner and safer, use natural resources more efficiently, and reduce pollution risks to human beings and the environment.

UNEP DTIE has been working on Cleaner Production since 1989 and in 1998 a programme dedicated to Sustainable Consumption was developed. A summary of the key aspects of the current programme is listed opposite. For a fuller analysis of UNEP's diverse, ongoing contributions to the sustainable consumption debate, see the end of Section I. Other DTIE and UNEP work contributing to sustainable consumption is mentioned in the body of the document.

UNEP Regional Office for Europe

In 1995 UNEP ROE organised a Roundtable meeting, in conjunction with Friends of the Earth International, examining paths to sustainable consumption in Europe. Since then, ROE has collaborated closely with DTIE on its sustainable consumption programme. ROE is now promoting a regional dialogue process, to build consensus and capacity for sustainable consumption in the Central and Eastern European region, including the Newly-Independent States: *Sustainable Consumption Opportunities for Europe (SCOPE)*.

Endnotes

- ¹ The Netherlands (1995), *Facilities for a Sustainable Household Workshop: Report*. The Hague: Netherlands.
- ² Robins, N. & Roberts, S. (1998), *Consumption in a Sustainable World: Report of the Workshop held in Kabelvåg, June 2-4 1998*. Oslo: Norwegian Ministry of Environment.
- ³ Klaus Töpfer, UNEP Executive Director, 23 August 1999.
- ⁴ Rensvik, H. (Norway) (1994), p.91, in Norway, *Symposium: Sustainable Consumption*. Oslo: Norwegian Ministry of the Environment.
- ⁵ OECD (1999), <http://www.oecd.org/env/consumption/scp23g.htm> (page viewed in October 1999).
- ⁶ See timeline in Section I.
- ⁷ UN Secretary-General (1999), *Comprehensive Review of Changing Consumption and Production Patterns*, Report of the Secretary-General, CSD, Seventh Session, New York: UN.
- ⁸ www.unglobalcompact.org
- ⁹ Jacqueline Aloisi de Lardere, Director UNEP DTIE, 4th International Business Forum, October 1999.
- ¹⁰ UN CSD IWPCPP, adopted in 1995.
- ¹¹ OECD (1995), *OECD Experts Seminar on Sustainable Consumption and Production Patterns: Final Report* (MIT, December 1994), Paris: OECD.
- ¹² UNEP/CDG (1999), *'Creating Opportunities in a Changing World, International Business Forum, Berlin, October 13 to 15, 1999' Report*, Paris/Berlin: UNEP DTIE/CDG.
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- ¹⁴ OECD (1995), *Sustainable Consumption and Production: Clarifying the Concepts, Workshop Report*, Paris: OECD.
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- ¹⁸ Cf. endnotes 3 and 5.
- ¹⁹ Richard Jolly, Principal coordinator of the Report.
- ²⁰ Max-Neef, M (1992) p.47, in Ekins, P., *Wealth beyond Measure: An atlas of new economics*, Gaia Books: London.
- ²¹ The primary reference for the usage here is: Herman, R., Ardekani, S.A. & Ausubel, J.H. (1989), *Dematerialisation*, pp.50-69, in Ausubel, J.H. & Sladovich, H.E. (1989), *Technology and the Environment*, Washington D.C: National Academy Press.

It has also been suggested that *Dematerialisation* is a term and concept which can generally characterise the increasing material sustainability of society, both through an increasing reliance on services rather than products, and through changes in the choice patterns of society. This definition is helpful in extending the material reduction process of industry beyond products. However, some problems remain. In characterising sustainable consumption in this way, the role of the consumer is largely lost: consumers cannot directly drive the process (though their choice of eco-labelled products may help), even in terms of a shift to a service-oriented economy. In turn, losing a focus on the consumer means that the question of drivers of consumption is not addressed, which may ultimately be key to ensuring fully sustainable – rather than just more efficient – consumption.

Finally, *Dematerialisation*, as a phrase describing a social phenomenon, has become associated with the 'voluntary simplicity' or 'downshifting' movement, an activity beyond the scope of this report to describe. However, the earlier definition of *Dematerialisation*, focussing on material and energy reductions for products (and to some extent services too) is the one which will serve for the report as it stands.

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- ²² Robins, N. & Roberts, S. (eds) (1997), *Unlocking Trade Opportunities: Changing Consumption and Production Patterns*. New York: UNDP/PCSD.
- ²³ Cf. endnote 1.
- ²⁴ For example, UNDP (1998), *Human Development Report 1998*, London and New York: Oxford University Press. OECD (forthcoming 2001), *Household Food Consumption Patterns*. Paris: OECD. OECD (forthcoming 2001), *Household Tourism Travel*. Paris: OECD. OECD (forthcoming 2001), *Housing and Sustainable Consumption* (provisional title). Paris: OECD.
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- ²⁶ Ekins, P. (1992), *Wealth Beyond Measure: an atlas of new economics*. London: Gaia.
- ²⁷ Packard, V.O. (1961), *The Waste Makers*. London: Longman.
- ²⁸ Feminist Perspectives on Sustainable Development, edited by Wendy Harcourt. p. 66, Zed Books Ltd, London & New Jersey, 1994. Referring to Max-Neef, Manfred et al., (1989) 'Human Scale Development', in *Development Dialogue* no. 1, DHF, Uppsala: and Daly, H.E. and J. Cobb (1989) *For the Common Good: Redirecting the Economy Towards Community, the Environment and a Sustainable Future*, Merlin Press, London.
- ²⁹ Cf. endnote 6.
- ³⁰ See annotated bibliography and www.consumersinternational.org, www.wupperinst.org, and www.wbcsd.org. Most recently: WBCSD (2001), *Sustainability Through the Market: Seven Keys to Success*. Geneva: WBCSD.
- ³¹ UNDP (1998), *Human Development Report 1998*, London and New York: Oxford University Press.
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- ³⁴ Lovins, A. & H., and von Weizsäcker, E. (1997), *Factor Four: Doubling Wealth – Halving Resource Use*, London: Earthscan.
- ³⁵ Ibid.
- ³⁶ Ibid, p 65, p 91
- ³⁷ Banister, D. Stead, D. Steen, P. Åkerman, J. Dreborg, K. Nijkamp, P. and Schleicher-Tappeser, R. (2000), *European Transport Policy and Sustainable Mobility*. London: E and FN Spon.
- ³⁸ United Kingdom, (1999), *A better quality of life: a strategy for sustainable development for the UK*, Sustainability White Paper, London: HMSO. See also www.detr.gov.uk/environment/epsim/indics/ for indicators of sustainability and green accounts (accessed January 2001). Now to be found around: <http://www.defra.gov.uk/environment/epsim/indics/isdtheor.htm>.
- ³⁹ OECD (1999), *Environmentally Sustainable Transport: report on phase II of the OECD EST project*. Volume 1: synthesis report. Paris: OECD.
- ⁴⁰ europa.eu.int/comm/energy/en/elec_single_market/implementation/implde.pdf (accessed September 2001).
- ⁴¹ Banister, D. Stead, D. Steen, P. Åkerman, J. Dreborg, K. Nijkamp, P. and Schleicher-Tappeser, R. (2000), *European Transport Policy and Sustainable Mobility*. London: E and FN Spon. p.16, 18 etc.
- ⁴² UNEP (2000), *UNEP Second International Expert Meeting on Advertising, Paris – 22 & 23 June, 2000' Meeting Report*, Paris: UNEP DTIE.
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- ⁵² OECD (1996), *Council Recommendation on Improving the Environmental Performance of Government*, Paris: OECD.
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- ⁵⁶ Robins, N. & Roberts, S. (eds) (1997), *Unlocking Trade Opportunities: Changing Consumption and Production Patterns*. New York: UNDP/CSD.
- ⁵⁷ www.3m.com/profile/envt/3p.html (accessed January 2001).
- ⁵⁸ http://europa.eu.int/comm/environment/ipp/conference/background_summaries.pdf
- ⁵⁹ Ayres, R.U. & Simonis, U.E. (eds.) (1994), *Industrial metabolism, restructuring for sustainable development*. Tokyo: United Nations University Press.
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