

ECONOMIC COMMISSION FOR EUROPE (ECE)

*Workshop on Encouraging Local Initiatives Towards
Sustainable Consumption Patterns*

(2-4 February 1998, Vienna, Austria)

***UNDERSTANDING CONSUMPTION PATTERNS:
A BETTER WAY TOWARDS ACTION***

Introductory report by the United Nations Environment Programme
Regional Office for Europe

UNITED NATIONS
Geneva, 1997

1. THE CONTEXT

1.1. Current status of action

There is increasing recognition that current consumption and production patterns, particularly those in developed and highly industrialized regions, are a main cause of global environmental degradation and instability of the development process. To respond to this challenge, in 1992 the international community and governments endorsed a formal plan of action to promote sustainable development. Among its provisions, there were recommendations on actions to address unsustainable consumption patterns. Since then, governments have strengthened initiatives to curb consumption and launched new ones. These official actions have been supported by various sectors of civil society, including local authorities, industry, non-governmental organizations and ordinary citizens.

Despite this, depletion of natural resources, damage to ecosystems, increase in wastes and pollution - in fact, environmental deterioration in general - continue to be widespread and are on the increase. Consumption continues to grow and unsustainable production patterns are still the norm, both in developed and developing countries. Recent global and regional assessments of the state of the environment and progress in protecting it, confirm that, although significant progress has been achieved on some fronts - moving towards greater resource efficiency and curbing pollution - overall the balance sheet is negative. The fact is that not enough is being done, and whatever progress there is, is too slow.

1.2 Constraints to progress

But if the problem has been identified, if action has been agreed upon, and if initiatives are underway - why is it that so little has been achieved ? Among the factors hampering action, making it less effective than it could be, is lack of full understanding of the phenomenon of consumption and its ramifications, and of the complex web of linkages to which it is central. Much has been written about the issues, but a comprehensive and integrated view is still elusive. With exceptions, most sectors of society understand very little of what is involved, and the majority is both ignorant and indifferent. The consequence is that action is not widespread nor has enough support; what action there is, is not always effective because it does not consistently and pointedly address the problem.

If initiatives directed to curbing consumption are to achieve their intended goal, the issues must be fully and widely understood and action must be precisely targeted. To do this, it is important to understand the phenomenon in depth. We must understand the causes that fuel consumption - what makes individuals, nations and the global society consume the way they do. We must understand the impacts on the environment and the effects on society and the economy of current consumption patterns. We must understand the appropriateness and actual effectiveness of the tools currently applied. It is hoped that having reached a greater understanding, it will be possible to devise more effective means to deal with the problems, make information and knowledge on the issues more widespread, and set in motion a true change in patterns of consumption.

But beyond understanding what is involved, is the will to act. In spite of the declared intent of governments, and the good will of individuals, it is clear that curbing consumption is not a priority for society. Too often, it is perceived as a negative trade-off; political expediency often overrides common sense. In these circumstances, understanding the mechanisms that underlie consumption will certainly not be enough - a sense of urgency and the motivation to act without delay must also prevail.

1.3 Exploring the issues

This paper is offered as a contribution to understanding the complexities of consumption issues and as a stepping-stone to more effective action. A brief overview of the issues that are of concern to the pursuit

of sustainable consumption, stripped to the essential elements, allows a clearer view that can stimulate reflection and lead to a new synthesis of the issues. Because of the space and time constraints, the issues can only be described briefly - a full and detailed exploration must wait for another occasion. Throughout, questions that might lead to a better understanding are posed and suggestions for future action are offered. The focus is broad and global, but attuned to the European context; in keeping with the focus of the meeting, there are specific references to local action.

2. GENERAL REFLECTIONS ON CONSUMPTION

2.1 *Why focus on consumption ?*

Focussing on consumption is useful in that, by understanding the way society uses resources to satisfy human needs, it allows to address one of the most important causes of unsustainability. Because consumption touches all individuals, it has the potential to be the most easily understood factor affecting sustainable development, acting as its tangible manifestation. For the same reason, it has the greatest potential for social mobilization and action, particularly at the local and individual level.

2.2 *Defining consumption*

It is worthwhile to start by examining the basic meaning of the term consumption. This may seem obvious and unnecessary - but precisely because the meaning is so basic and obvious, we tend to overlook it. By explicitly defining the term, it is easier to understand fully what is involved.

Consumption is commonly defined in dictionaries as ...to take wholly or completely; to destroy, as by decomposition, dissipation, waste; use up, expend, destruct The economic aspects of consumption are defined as ... active use of goods in such a manner as to accomplish their direct and immediate destruction (as in eating food or burning fuel) or in the mere keeping and enjoying an object which is destroyed gradually by natural decay (as in the case of a durable good).. .

This every-day definition is a stark reminder that, in and of itself, the act of consumption has both a positive and negative aspect. On the one hand, consumption satisfies human needs; on the other, consumption is an agent of destruction - through the transformation and use of resources, it expends them and creates waste. In fact, consumption could be seen as a manifestation of entropy - the act of creation of a new good or service, that is inevitably followed by the descent into less organized and useful states. This alerts us to the fact that there are inevitable losses in the act of consumption, and as such, it is problematic in terms of sustainability. But this observation also clarifies the fact that continued consumption is possible if resources can be renewed and made available on a sustained basis.

Inevitably, all of human consumption is based, in the first instance, on the *physical world and the environment*, which provides the basic materials and building blocks for consumption, and goes beyond resource use as such. This includes *natural resources* such as air, water, soil, non-renewables such as minerals, and renewables such as living resources; *environmental goods*, including landscapes, biodiversity and space as such; *environmental services*, including those provided by the global cycling of materials and energy, waste absorption capacity and environmental sinks.

These physical and environmental elements are transformed by *society and the economy* into the goods and services, that, in the act of being consumed and used, satisfy human needs. Here consumption essentially takes place at two levels - singly, by individuals - the *demand side of the economy*; or at the level of the social and productive system - as inputs for production - the *supply side of the economy*. Because of

this dual aspect of consumption, it can also be referred to as 'production and consumption'; in the end, the single term encompasses the whole issue.

According to the amount of materials, manipulation and energy necessary to make consumption possible, it is useful to make a distinction between *primary consumption* - using unprocessed resources directly (e.g. when breathing or absorbing solar energy); *secondary consumption* - using partially processed goods (e.g. agricultural produce); and *tertiary consumption* - using industrially produced goods and services. These are important distinctions, as the perceptions of the issues, the driving forces, the impacts, problems and solutions are different at each of these levels.

2.2 *The extent and impacts of consumption*

The extent of consumption can be considered from a twofold perspective. In the first place, there is the *pattern of consumption* - that is, the type, nature and quality of the goods and services consumed. Human needs can be satisfied by a range of products - for each specific need, there is a wide range of satisfiers that essentially fulfill the same objective, but at a different level of resource use, complexity and specialization. For example, nutritional needs can be satisfied by a diet high in animal protein, or by one that is either partially or wholly vegetarian. Needs for mobility can be addressed either by private automobile or public transport. In terms of satisfaction of the need, the result is the same, but in terms of the consumption of resources there can be great differences, sometimes various orders of magnitude. The first represents a costly pattern of consumption, the second is much less so.

In the second place, there is the *volume of consumption* - the amount of goods and services consumed. Here again, human needs can either be satisfied adequately by a limited amount of goods and services, or these can be multiplied, specialized and diversified endlessly, thus increasing resource use as well as the amount of goods each individual consumes. Clothing is an example - individuals can be adequately clothed with a few items, or, responding to fashion and specialized clothing, the items consumed can be increasingly numerous. Or the various gadgets that carry out similar tasks can be multiplied - for example, in the field of communications, where there is now a bewildering array of goods available. Often, the difference between the products is minimal, and choice an illusion; but the end result is that people consume more.

Much has been said about the pattern and volume of consumption, and the imbalances that exist both globally and within regions and countries, with a small proportion of people in developed countries consuming most of the world's resources. Increasingly, there is the understanding that, on grounds of equity and justice, this must change and that consumption must be increased in some quarters and decreased in others. The need to establish a 'floor' below which consumption should not be allowed to fall, and a 'ceiling' above which consumption should not rise has also been proposed.

While the desire to redress the imbalance is seen as legitimate, there has been scant acceptance of reductions in the extent of consumption currently attained. It is proving easier to discuss changes in the pattern of development - people are willing to accept certain modifications in lifestyles, provided the quality of life is maintained or enhanced. Accepting reductions in the volume of goods consumed is proving more difficult. A fundamental psychological trait dictates that people are not willing to relinquish what they have already acquired, nor are they prepared to give up their aspirations for a better life. To modify this is difficult, but some better ways of explaining what is at stake and mechanisms for motivating people must be found if consumption is to decline.

The impacts of consumption are varied; it should not be supposed however that all the effects are negative; indeed many are positive. While most of the negative impacts occur in the environmental sphere, those in the socio-economic arena are more variable.

The nature and extent of the *environmental impacts* of consumption are still understood in general terms only. It is known that depletion of resources and destruction of ecosystems and species endangers the resource base and that the creation of wastes and pollution impair the absorptive capacity of ecosystems. However, questions of environmental limits, of carrying capacity, of the mechanisms governing ecosystem and resource deterioration, indeed, the ultimate impacts of consumption are not yet sufficiently understood. While some limits are known with a certain degree of confidence (e.g. amounts of specific pollutants in the atmosphere) most are known less well, with many uncertainties (e.g. what constitutes a sustainable fishery). This is a serious stumbling block - how can sustainable levels of consumption be achieved if the true limits of the environment are not known ?

The *socio-economic impacts* of consumption are complex and concern issues at the very core of the development process. Consumption is positive in that it provides people with the goods and services that they require and provides societies with a stimulus for economic activity and employment. But if consumption is excessive, it can lead to a series of social and economic problems. Conspicuous consumption, as well as inequality in the level of consumption between social groups and within and between societies, can lead to injustice, social disequilibrium and conflict. Excessive consumption, particularly consumption directed to non-essential and frivolous items, can undermine environmental quality and limit availability of resources, thus endangering the long-term viability of the economy.

Concern for the possibility that mankind is breaching the limits of environmental systems to provide resources and absorb wastes and of social and economic systems to ensure equity, livelihoods and provide the goods and services necessary for a human life of quality has led to the development of a number of interesting *analytical tools* that allow to assess limits and impacts. Some of these tools are strictly scientific, but most lean towards ideological interpretations and are of a highly political nature; they also vary in their exactitude and effectiveness. In spite of this, they are useful in that they help to clarify, and in some cases, graphically represent various aspects related to consumption.

Among the various methods and concepts, there are scientific methods for determining the environmental carrying capacity of ecosystems, focussing on a specific species or on critical loads for specific pollutants; approaches to determine impacts of specific instances of consumption - the concepts of ecological rucksack and material intensity per unit of service (MIPS) ; a framework for understanding the appropriation of resources and regional or per-capita level of consumption (the concept of ecological footprint) and the concept of environmental space, which in addition to being an analytical tool also provides normative guidance on desirable levels of consumption. Less has been done to determine the socio-economic aspects of consumption itself, although related work has been carried out in respect to the question of development and the limits to growth, the evolution towards a steady state economy and the analysis of social problems deriving from both affluence and poverty.

While these tools are useful, more should be done, moving them away from the realm of broad theoretical frameworks or illustrative studies and make them more of a day to day tool that can assist in understanding the environmental limits of consumption in specific cases as well as of the issues that are involved in negative impacts.

2.3 *Desirable characteristics of a more sustainable form of consumption.*

The evidence of what is involved in unsustainable consumption has led to the formulation of definitions of the obverse - sustainable consumption. If consumption is to be sustainable, it should have a series of characteristics consistent with the social, economic and environmental requirements of sustainable development. Sustainable production and consumption should be environmentally sound, socially equitable and responsible and economically efficient.

This broad definition has been variously characterized in greater detail by a series of elements that give a somewhat more precise meaning to the term. Some of the elements postulated include reducing consumption; stabilizing and eventually reducing population; minimizing the use of natural resources, toxic materials and waste emission; providing goods and services to respond to basic needs while bringing about a better quality of life for all; satisfying the needs of the present as well as of future generations; redressing imbalances in access to resources and of poverty; developing more efficient technologies and achieving higher resource productivity.

These elements provide guidance for policy makers and give a basis for developing stringent criteria to critically assess current consumption. Some work has already been done in this respect, but it is dispersed and remains anecdotal - more should be done to bring all the dispersed work together under a comprehensive and coherent framework.

3. THE FORCES THAT DRIVE CONSUMPTION

3.1 *The underlying driving forces*

Much has been discussed about the forces that drive consumption, but there is still a great deal to be clarified if these forces can be understood sufficiently to redirect them in positive ways. To begin with, it is useful to make distinctions between the wide range of factors that are brought to bear on consumption, all of which have different implications. There are underlying realities that inflexibly condition consumption; there are factors that are more diffuse and exert an indirect influence and finally, there are the forces that directly drive consumption. Some of these elements can either not be modified at all, or modified very little and with difficulty; there are factors that are more amenable to change and there are forces that can be influenced, with difficulty in the short term and more effectively in the long term. It is important to be able to determine which set of characteristics apply when attempting to modify consumption. Action will obviously be more effective in those cases where modification is possible and useless in those where modification is not feasible.

Mankind's *physiological, physical and psychological characteristics* are at the root of consumption. The need for protection (e.g. shelter, clothing and community); for physical nurture (e.g. food and drink); for spiritual nurture (e.g. culture, education and leisure), for mobility and exchange (e.g. transport and communications) and all the associated goods, services and infrastructure that make the satisfaction of those needs possible account for almost all human activities and consumption.

Our basic tendency to self interest, to seek out the best possible quality of life and satisfaction drives us. When quality of life and personal satisfaction are equated with the amount of goods and services to which a person has access, the result is that consumption acquires an overriding importance. Certain psychological factors may also contribute to this. Many human emotions and desires occur along a gradient that insensibly leads from one stage to another - thus, individuals can go from a genuine need to more questionable wants, and from there to outright greed, all of which stimulate consumption. One might ponder here the Gandhian dictum - that the earth provides enough to satisfy every man's needs but not every man's greed. The fundamental question of what constitutes self worth and identity in people also comes into play. This is leading to a dilemma common to many modern societies between being as a sufficient marker of identity and the more consumption oriented mode of having goods and possessions that confer identity and status. The desire of people to be fully integrated in their social group leads to emulation and conformity - in societies where high levels of consumption are seen as the norm, it leads to everyone increasing their individual level of consumption. Even the perception of wealth and poverty changes and the threshold of what is perceived to be a minimum level of consumption has been constantly rising as society and the economy develop.

Social and cultural factors of a more general nature are also an underlying element that greatly influences consumption. Social preferences and cultural differences influence perceptions of quality of life; diffuse cultural traits in different societies condition different modes of resource use and consumption. There is evidence that the patterns of development and lifestyles that have evolved over the last few decades, particularly in western societies, have given rise to a growing materialism and consequent consumption in an

ever growing spiral of one provoking the other. Not for nothing is the emerging global society referred to as the 'consumer society'. Frugality, once a much admired personal trait is now viewed with a certain skepticism if not derision.

Many of these points may seem out of place in an objective discussion of consumption - but are they ? Are not some of the characteristics of human nature and society an invisible but ever present and indeed increasing force that drives consumption ? At the very least, much more pointed studies should be undertaken to determine what motivates consumption at the deepest structural level in both individuals and societies, particularly such basic forces that can be modified only with great difficulty.

Population is a major force fueling consumption. The larger the human population, the greater the use of resources, and the greater the impact on the environment, society and the economy; this is the case even if resources are used with the utmost efficiency and each individual consumes frugally. Population and demographic profiles also influence consumption in subtler ways; for example, the size and nature of households or of social units influences the pattern and volume of goods and services consumed - a case in point is the rise of single individual households, which multiply the amount of basic consumer goods necessary; or the changing age cohorts which call for shifts in services. For ideological reasons, population is not always considered in the context of the debate on sustainable consumption; increasingly however, it is understood that to manage consumption, population numbers must also be stabilized and eventually reduced. The question is - how far is direct intervention possible, both socially and politically ? It seems inevitable that population will have to come into an equilibrium state through the slower process of development and demographic transition.

Environmental factors also have an influence on consumption, particularly the differential use of certain resources between regions. The most important include local conditions such as climate (e.g. colder regions will need to use more energy for heating, dryer regions, because of evaporation, will need to use more water) and natural resource endowment (e.g. areas that have a particular resource in abundance tend to use that resource in quantity, be it water, energy or land). This factor is often overlooked when discussing per-capita levels of consumption, perhaps for ideological reasons; nevertheless, it conditions and even requires acceptance of various levels of need.

Geographical/spatial factors and infrastructure are important determining factors in consumption. Overall patterns of land use, the siting and reciprocal relationships between agricultural land, industrial areas and settlements; the internal shape and structure of settlements, communication and transport infrastructure all condition, to a considerable degree, the transport/energy needs of a society. Because these structures are permanent, it is difficult to modify them over the short term, and they therefore have a lasting influence on consumption.

Technology and technological innovation also influence consumption and in some cases are a veritable driving force. In this particular instance, technology is constituted by the series of ideas, processes, methods and approaches that give the ability to appropriate, process and use resources, manufacture products and provide services. Technology has a paradoxical effect. On the one hand, it promotes consumption as it allows for the processing of increasing amounts of resources and energy, and through the development of new products and processes calls upon resources that were hitherto not exploited. On the other hand,

technology can be the most powerful agent in achieving greater resource efficiency and reducing pollution through improving variants of old technologies or developing entirely new methods and processes.

The *stage of development and relative wealth* of a society also tend to exert an influence on both the pattern and the volume of consumption. The more advanced a society is, the more diversified its economy will be and the wealthier it will tend to become. Wealth is invariably used for consumption, generating in turn more economic activity and wealth, and so on in a spiral of growth. Much of the difference in wealth and consumption across the world is due to the particular historical moment in which a society finds itself, and the consequent different condition of exchange.

The *economy* is undoubtedly the most powerful force now driving consumption, with many dimensions coming into play. In simple terms, the dominant economic paradigm is based on market exchanges, growth and profit and increased affluence is equated with development. In fact, growth and profit has become a value onto itself, seen as the main motor of development, shaping all of economic policy, often to the detriment of the environment and often even of social values and benefits. Growth and profit is achieved by increasing economic exchanges, by increasing throughput of resources, energy, goods and services, thus increasing consumption. Globalization of the economy, the expansion of international exchanges and trade, the spread of the principles of market economies, all contribute to growth and consumption. This process has, to be sure, increased the goods and services available and improved the quality of life - but it is also putting pressure on resources and the environment.

In this scheme, the very structure of the market place encourages consumption. Pricing and credit facilities, investment in infrastructure and plant, subsidies and taxation are, for the most part, directed at facilitating the use of resources, which, invariably are not valued at their true environmental cost. The diversity of goods available acts as an incentive for consumption that is difficult to resist. Marketing and advertising act as a powerful instrument of information on what is available but also as an instrument of social persuasion to encourage consumption.

The manner in which the productive machinery is structured also leads, increasingly, to higher levels of consumption. The relative weights given to labour, capital and resources in the productive process have favoured using resources, which are underpriced, rather than investing scarce capital or incurring high labour costs. This has led over the past few decades to high levels of resource use and of individual consumption. Examples of this process are numerous - favouring products to be sold rather than services that involve individuals; planning obsolescence into design and materials; modular products that require less labour input but cannot be repaired; throw-away products; frivolous items that respond to fashion and serve profits rather than need.

3.2 *Addressing the forces that drive consumption*

These forces are closely linked in a web of powerful influences that promote, indeed even demand a continual increase in consumption. They act in unison, creating a web of synergies that acts as an all-pervasive force throughout society to fuel consumption. It is a paradox that the very elements that make up human nature and the forces that make economic development possible, also act as a force that leads to an unsustainable society.

How may we approach this dilemma and harness existing forces in a positive way, so that consumption can take place in a sustainable manner? Are there countervailing forces that might balance negative aspects of consumption? A force to be harnessed as a counterbalance is that of spirituality, those aspects of human nature that do not rely, or rely only to a minimal degree, on material expression. Pursuing spiritual fulfilment is perhaps the highest expression of human nature and one to which all societies strive. These spiritual forces include the pursuit of knowledge, art, creative expressions and strengthening

community as a form of fulfilment. Linked to this, is the set of ethical, moral and religious thinking that can also act as a strong motivation for less consumptive and more equitable forms of living.

4. ACTION TO MODIFY CONSUMPTION PATTERNS

4.1 *The range of instruments*

Currently, a large range of instruments exists which address both the environment as well as consumption itself. The prevalence of their use varies greatly - some are currently applied, others are tested experimentally, still others are being defined and developed. Those described here are representative of the most important categories of instrument.

Technical and managerial instruments are directed towards minimizing environmental impacts and achieving resource efficiency and pollution control. *Analytical tools* allow the determination of either the general environmental impacts of a process, product or infrastructure or the environmental implications of a product or process at every stage of its life, from manufacture, to use to disposal; examples in this category include environmental impact assessment, life cycle analysis, environmental audits. *Environmental management guidelines*, provide information on the most environmentally appropriate or effective methods, technologies and management practices to deal with various aspects of resource extraction, processing, use and disposal; this information is provided by various types of sector or process specific. *Eco-efficiency* or the environmentally efficient use of resources is addressed by a series of methods that minimize material and energy intensity in products and processes. A growing trend is to focus on the so-called dematerialization of products and increases in resource efficiency up to a factor of 10. Some related approaches, which also address the question of wastes, rely on recovery and recycling of materials, use of by-products, closed loop production processes. Indirect ways of increasing resource efficiency include extending the life of products through reuse or reconditioning; increasing durability and performance through improved materials or design innovations; achieving greater efficiency in the use of products, services and infrastructure through multiple use strategies and time management; substitution of resources, to avoid using non-renewables or toxic products. *Pollution and waste control* per-se is addressed by a variety of methods, including avoiding pollution altogether through cleaner production processes which apply to specific products or industries, cleanup methods and so-called end-of-pipe technologies which are applied once pollution and wastes have occurred.

Economic instruments are aimed at integrating environmental concerns with development through internalization of so-called externalities and by reflecting the true value of the environment and associated costs in market prices. Approaches include: *A system of national accounts* that reflects environmental costs and benefits, and considers natural resources and environmental goods and services as an integral part of the economy. *Fiscal tools* including charges, taxes, subsidies, deposit schemes and others ensure that full account is taken of all environmental costs and facilitate redirecting economic choices and behaviour in ways that have less impact on the environment. *Investment* in more environmentally benign technology, plant and infrastructure provide alternatives and widen options.

Regulatory instruments are directed to setting limits on what society considers to be or not be permissible in relation to resource use, environmental impacts and product performance, use and disposal; the range is broad and includes: *Legal provisions, laws and international agreements* create a formal framework for relationships between actors, guides action and defines responsibilities in respect of the environment. *Regulations* describe technical and managerial limits that have to be complied with in respect of extraction, use and processing of resources and of manufactured products; provisions typically apply to various stages in the life cycle and extend the producers responsibility for environmental impacts. *Environmental standards* provide benchmarks and quantitative guidance on both technical and management

issues concerning products and processes, for example for quality management or management of environmental systems. 'Soft' regulatory instruments that are not legally binding but nevertheless provide a framework for environmentally sound action in various domains include *codes of conduct* and *voluntary agreements and commitments*.

Structural approaches are directed towards changing the manner in which products, services and infrastructure are used. *Land use planning* provides the means for a more rational utilization of land, energy and transport facilities at the territorial level; *urban planning* extends the same principles to settlements. The *shift from products to services* increases the quality of life and employment while minimizing the use of resources. '*Green*' procurement by large and small enterprises as well as government assists in creating a sufficient volume of demand for environmentally sound products and services, and acts as a stimulus for technological innovation.

Social instruments are directed mainly towards creating awareness of the implications of consumption and providing the information necessary to change behaviour and make appropriate choices. *Consumer guidelines* provide broad and comprehensive information on both products and services, including for performance, durability, costs and impacts. *Product labeling and eco-labeling* specifically provide information on the environmental impacts of products. Education can provide a more in-depth understanding of the environmental, social and economic implications of consumption patterns and personal choices. *Alternative advertising*, *awareness raising campaigns* and *information* in general allow the precise targeting of specific issues concerning consumption.

4.2 *Global, national and local action*

The instruments described can be applied at various levels, but some will be more effective at one scale others at another. The question is, how far is there real flexibility in current application and how can the instruments that exist be applied effectively.

What is striking from the review of these instruments is that there is a paucity of those that can be applied to global issues, in spite of the fact that the uneven distribution of consumption in various regions of the world has such enormous implications. Indirectly, international agreements that favour trade between countries, and mechanisms that provide financial assistance or loans are all means of promoting growth and development in developing nations, and thus, can help in increasing consumption where it is needed; but none of these mechanisms address the distributional issue. Most of the instruments are more easily applicable at the level of the nation state or at the level of associations between nations - such as that embodied in the European Union. This applies not only to technical and managerial instruments but also increasingly to economic and regulatory ones. At the local level (that is, of a sub-region within a larger national framework), all of the instruments apply, but only a handful can be wholly directed and controlled from this level, with the notable exception of structural approaches such as land use and urban planning.

4.3 *Assessing the effectiveness of the various instruments*

There exists to-date no rigorous and systematic analysis of the effectiveness of each instrument, nor a comparison of which is most effective among them. Most of the information is anecdotal - still, it is enough to derive a preliminary assessment.

The application of technical and managerial instruments has been very effective in decreasing consumption of resources and energy in the productive sector, in terms of individual products and industries. But because of the growth of economies around the world, consumption at the level of inputs has grown in

absolute terms. Economic instruments are potentially some of the most effective means of changing consumption, but to-date they are not being applied at a sufficiently large scale to be truly effective in changing the structural nature of consumption. Legal and regulatory instruments have been very effective in a number of areas - for example control of emissions, particularly so if they have been coupled with economic provisions. A case in point is that control of lead pollution, through pricing and regulatory means. Structural approaches have been less commonly applied explicitly to counter consumption, although the evidence is that they can be particularly effective. Finally, perhaps the least effective means of countering consumption have been the social instruments, mainly perhaps because of the fact that they have not been systematically applied. Awareness raising on a massive scale has not been considered a priority by governments; product information, such as eco-labeling is beginning to have some influence; however, unless coupled with economic measures that affect pricing, they do not appear to be very effective in determining consumer choice at the scale needed. Fashion or social motivation - themselves the result of information seems to be more effective in moving people towards more environmentally responsible consumption, if not lesser amounts of consumption.

One should ask to what extent has consumption decreased because of their application. The evidence is, as was noted at the beginning, that consumption has continued to increase; perhaps less so than if the instruments had not been applied. In any case, it is important to monitor and assess the effectiveness more closely, so that improvements can be introduced at the policy level, as well as at the level of application. It is possible that various factors affect the limited effectiveness of the instruments. The main reason is of course, the piecemeal approach of application which is not widespread or systematic. Integration of various instruments that could achieve positive synergies is not common, and finally, most are applied with consumers being unawares of them, in spite of the fact that consumption is first and foremost a social issue.

Matching the forces that drive consumption, and the instruments applied to modify it reveal a striking discrepancy between them. On the one hand, the forces that drive consumption are structural - human nature, the physical shape of the human environment, the structure of the economy. The instruments that are brought to bear are mainly technological. While they are valuable, and have been instrumental in achieving progress, they will not be enough. This is something to ponder - the true reason why, in spite of our efforts, consumption and its dynamics has not changed perceptively.

5. POLICY INITIATIVES FOR THE FUTURE

5.1 *Changing paradigms - a matter of survival*

Reflecting on consumption, its causes and impacts brings some inescapable conclusions. Much more is at stake than environmental quality or social equity - what is at stake is the very long term survival of the global ecosystem as a provider of human needs for human society as we know it. This is a dramatic statement, but so is the evidence of the speed of environmental degradation and social upheaval. The means which are brought to bear on these problems, and on their causes, are clearly insufficient. More must be done than increasing the efficiency with which resources are used, more must be done beyond technological improvements.

We know that sustainability is about living equitably within our ecological means and can be achieved by lower population, lower consumption, more efficient technologies, higher resource productivity all pursued in combination. We know that nothing less than a revolution in the way we think and act will suffice. We must not only point at doing what we are doing better - we must do it differently. But how can

we change the dominant social and economic paradigms that are the main cause of the present situation ? How can we move towards an environmentally sound, socially equitable and economically efficient and humane society, when so many of the structures that underpin it lead in opposite directions ? How can we achieve the change in values that are necessary ?

In devising ways in which to change, we must be aware that, because so much of the fabric of current society is bound up with the cause of the problems, change cannot be as speedy as would be desirable. To avoid untenable disruption, strategies that allow a transition to a different society must be developed. And once developed, they must be applied with vigour.

5.2 *Defining guiding principles and criteria for sustainable consumption*

It is desirable perhaps, to start by defining in more detail some common principles and criteria that refer to the main dimensions of sustainable consumption, that can guide all groups in society to act with greater clarity and understanding. These points are easily derived from what is known to-date on the subject, but need to be made more explicit so that they can be referred to at all times - a sort of vademecum. The list is by no means complete - but it is a start.

Environmental dimension - how many resources should we use overall and how much pollution and stress can be put on the environment ? The key principle is to stay within the bounds of environmental limits; specific criteria include: respecting basic principles of environmental protection, including maintenance of essential ecological processes and life support systems, sustainable utilization of species and ecosystems and conservation of genetic diversity; living within the carrying capacity of the earth; apply the precautionary principle to all actions affecting the environment and prudence in the use of resources and environmental goods and services, i.e. leaving a margin for uncertainty, risks and fluctuations; use environmental income rather than environmental capital, i.e. use renewable resources no faster than their regeneration rate; minimize use of non-renewable resources, switch to renewable substitutes where possible, recycle; minimize pollution and waste and do not dispose of them in the ecosystem at a rate faster than the regenerating capacity of environmental media or the absorptive capacity of environmental sinks.

Social and cultural dimension - how should natural capital and the fruits of development be used and shared ? The principle governing this dimension is equity, coupled with a respect for the legitimate rights of individuals and cultures. Specific criteria include : equitable access to and use of resources, goods and services to all people of both present and future generations; personal and social responsibility to strive for frugality, economy and less consumption overall; favouring goods and services that respond first and foremost to basic human needs and not the superfluous (the Ghandian 'need not greed'); favouring quality of life, not quantity of goods; favouring consumption of non-material goods (e.g. cultural and spiritual); enabling people to make appropriate choices by offering options and providing support; providing information and education on the need for sustainable consumption and on the options available.

Economic dimension - how should society use, transform and distribute resources, goods and services ? How should it provide livelihoods to individuals and groups ? The key principle is efficiency within social and environmental bounds; specific criteria include: environmental effectiveness - internalization of all environmental costs and values; resource efficiency, doing more with less - using the smallest feasible amount of inputs per unit of output and aiming for durability, multiple use, recyclability; managerial effectiveness, ensuring the provision of the least resource intensive and most socially effective goods, services and infrastructure; technological appropriateness in response to social and environmental needs; social effectiveness, ensuring that the economy serves people rather than people being in the service of the economy; ensuring a balance between labour, materials and capital.

5.3 *Moving forward together*

Making the transition towards a more sustainable form of consumption must be a *social project*, involving the entire civil society, it must be a partnership of every group and individual, in developed and developing nations alike - national governments and local authorities, business and industry, labour unions, citizen and non-governmental groups, individuals. Without this level of participation, it will not be possible to achieve sufficient momentum for change.

A number of things can and must be done to start the transition towards a more sustainable society. The beginnings have been briefly listed here - other actions will suggest themselves through social dialogue. What is certain is that addressing these issues must become the first priority; available tools should be utilized in unison; the volume of action must increase - nothing else will be enough.

Set the stage for social change. It is essential to create awareness and consensus in society for the need to change social and cultural frameworks as well as individual attitudes and aspirations. The message should focus on the threat posed by current practices, the possibilities offered by structural reform and the options open to individuals, bringing to bear all existing knowledge on the forces that drive individuals and the forces that can be brought to bear on them to motivate them. The long-term strategy will obviously be based on education - of youth in the community and schools. But immediate measures can be taken - citizens should be informed and motivated through public awareness raising campaigns and made responsible for their acts through the political process; consumers should be given accurate information through advertising and product information, special interest groups should mobilize their constituencies.

Begin the reform of the economic framework, supporting regulatory systems and the institutional structure. This is the area where the greatest impact can be gained from reform, yet where the difficulties posed by change must be managed with the greatest care because of the potential disruption that abrupt change could cause. The main task is to change the rules of economic exchanges and the value given to inputs to the economic process. The relative weight given to resources, capital and labour must change towards giving natural resources their true value, considering their finite nature and vulnerability. The emphasis of development must also be shifted towards giving people primacy and to achieving an equitable sharing among nations and individuals. Not only must the perspective from which progress is seen be changed, but the full panoply of instruments that can redirect behaviour in the short term must be brought to bear. Taxes and charges must reflect true scarcities and vulnerabilities, social subsidies must be used to favour environmentally responsible behaviour as well as social ends; the legal system must underpin these efforts and the institutional system must be reshaped to reflect the new priorities. Social scientists, economists and governments have a responsibility here, but all sectors of society should be involved in devising the strategies for change.

Support technological change. One of the most powerful avenues for change during a transition period is to step up technological improvements, greatly enhance resource efficiency and lessen pollution, modifying technology to make better use of renewable resources. Science, business and industry should be mobilized to bring this about. Of all the options open to us to-day, this is the only one that is perceived as a win-win solution; it also has an important place in the long term.

Realign infrastructure. In order to give individuals a real option to change their individual behaviour, the infrastructure that underpins society must be changed. Because of the permanency of physical structures, this is where a careful transition strategy will be most necessary. However, it is possible to gradually adjust land use and settlement and transport patterns in such a way that efficiency is maximized. This will be easier in densely populated areas; very sparsely populated areas must receive special attention - perhaps in the long term, it may be necessary to modify settlement patterns at the larger scale as well. As part

of the process of infrastructural change, new ways of community must be found - new ways of affecting social exchanges and work relationships, new ways of providing goods and services. It is up to the social scientists, working with communities, to suggest better options.

There are obviously other things to be done - better understanding the limits of the environment and how to manage natural systems, how to bring about the demographic transition in a smooth manner, how to improve the effectiveness of institutions. But these are all ongoing social endeavours that need not be singled out here.

5.4 *Translating global and national concerns into local action*

In order to move forward at the local level, there are a number of things that communities, municipalities and regional authorities can do. It is important to be aware that, although all of peoples lives take place in local communities, many of the forces that shape society are controlled at a higher level - the nation or even higher. Therefore, one of the most important tools will be that of raising awareness of individuals and the community, and pressing for change throughout the society. The educational system, the media and business, local groups and the productive sector can all contribute to raising awareness and supporting local awareness raising campaigns.

Local communities, and in particular local authorities, can undertake a variety of other actions specifically at the local level, designed not only to reduce consumption, but also improve the quality of life. Only the broad categories are set out here - the specifics will be dependent on local conditions and preferences. A consultative system and partnerships with all sectors of the community will allow decisions as to what choices to pursue, how to tap the creativity of individuals and groups, and ensure cooperation and follow-through of decisions.

Reforming local governance structures can set the stage for a series of gradual reforms that will allow to reduce consumption and move towards a more sustainable society. As a first step, local governments can set the example by setting environmentally sound standards for local government procurement at all levels; this also acts as an encouragement for local industry to provide environmentally sound goods and services. Among the basic reforms one can single out changing local bylaws and modifying the taxation pattern, use of incentives and subsidies to encourage more sustainable forms of consumption.

Enacting infrastructural changes allows the community and individuals to make environmentally sound decisions and also reduce consumption. Priority areas include a more efficient use of land, water and energy; better transport and communication infrastructure and facilities, better building and materials design, improved waste management and recycling facilities. All the tools available should be brought to bear - planning, design, technology, management approaches.

Facilitating environmentally responsible behaviour of individuals by making products and services that reduce environmental impacts and require lower levels of individual consumption available.

5.5 *What now ?*

In 1975 the Dag Hammarskjöld Project on Development and International Cooperation published *What Now : Another Development* - a stocktaking exercise of the development patterns that were current at the time. Through an analysis of historical experience and thinking it presented an alternative framework for development, asking a set of key questions and presenting concrete answers.

This is what must be done, again, this time focusing on consumption. There are a variety of research initiatives that need to be undertaken to help us pose the right questions and find the right answers. Among the many possible options, priority could be given to :

- examining the forces that drive consumption in greater depth, defining them more exactly, so as to find ways to influence them more effectively;
- assessing the effects and usefulness of the instruments that are being used to reduce consumption, so as to improve them and develop new and more effective approaches;
- rethinking the nature and pattern of the economy, developing approaches that provide a quality life without having to rely on the despoliation of the natural world;
- rethinking the nature of institutions and governance structures, so as to facilitate the development of less consumptive patterns of development;
- developing improved approaches to land use, settlement patterns and transport and communications infrastructure, so as to tread more lightly on the earth;

The specific possibilities for action are numberless - what is important is to move forwards, to move now, before the options we have now are foreclosed, and the journey is made more difficult.

REFERENCES

The following documents were used as background material and are recommended for further reading:

- Webster's International Dictionary, 1928; Webster's New World Dictionary, 1970
- Report of the United Nations Conference on Environment and Development, Chapter 4 : Changing Consumption Patterns ; a/CONF.151/26/Rev.1 (Vol. I)
- World Resources 1994-95 :People and the Environment - Resource Consumption, Population Growth and Women, World Resources Institute in collaboration with the United Nations Environment Programme and the United Nations Development Programme, Oxford University Press 1994
- Facilities for a Sustainable Household; Environmental Resources Management; paper presented to the Zeist Workshop, January 1995
- Oslo Ministerial Roundtable: Conference on Sustainable Production and Consumption; February 1995; Final Report;
- OECD Workshop on Sustainable Consumption and Production :Clarifying the Concepts; July 1995; Final Report;
- UNEP/ROE Roundtable Discussions on Sustainable Production and Consumption in Europe; Report; Geneva, November 1995
- Environmental Management Tools; Industry and Environment, UNEP-IE; 1995, Vol 18 No. 2-3;
- Europe's Environment : The Dobris Assessment, European Environment Agency, Copenhagen, 1995
- Economic Survey of Europe in 1995-1996 - Economic Commission for Europe, United Nations, New York and Geneva, 1996 and Economic Survey of Europe in 1996-1997 - Economic Commission for Europe, United Nations, New York and Geneva, 1997
- Preparations for the Special Session of the General Assembly for the Purpose of an Overall Review and Appraisal of the Implementation of Agenda 21: A Shared Vision - Conclusions of the Chairperson of the Brasilia Workshop on Sustainable Production and Consumption Patterns and Policies; 25-28 November 1996; United Nations Economic and Social Council, Appendix to E/CN.17/1997/19, 27 February 1997
- Changing Consumption Patterns in Human Settlements; April 1997; SIEP, Habitat, UNDP/PCSD; Report of the Expert Group Meeting;

Report of the Commission on Sustainable Development on Preparations for the Special Session of the General Assembly for the Purpose of an Overall Review and Appraisal of the Implementation of Agenda 21; United Nations, General Assembly and Economic and Social Council; A/S-19/14; E/1997/60, 27 May 1997
Global Environment Outlook, United Nations Environment Programme, Oxford University Press, 1997