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Sustainable consumption and production in South East Europe and Eastern Europe, Caucasus and Central Asia

Joint UNEP-EEA report on the opportunities and lessons learned

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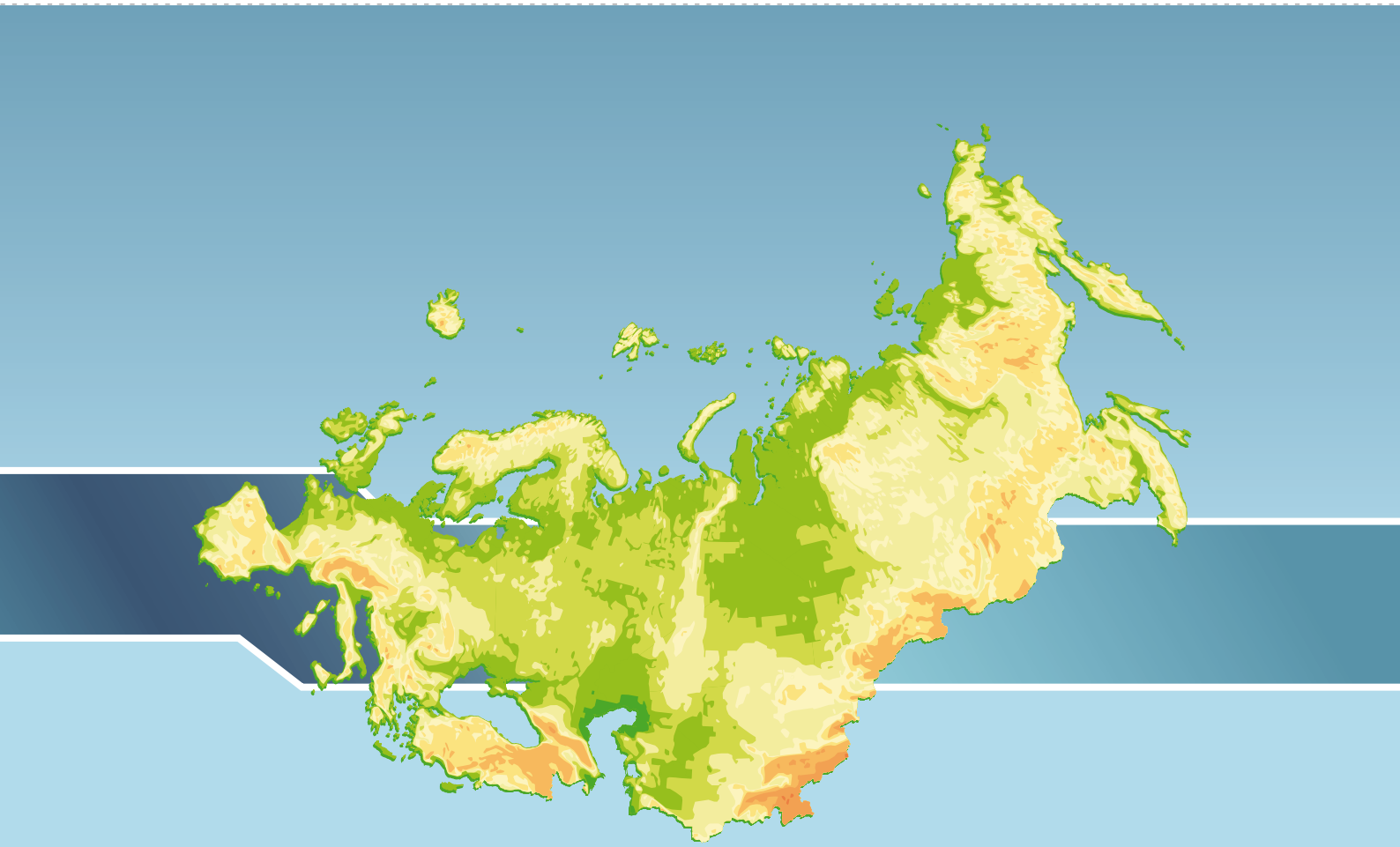

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Executive summary

Purpose

This report was jointly prepared by the United Nations Environment Programme (UNEP) and the European Environment Agency (EEA) to support the development of sustainable consumption and production (SCP) policies and implementation activities in the countries of South East Europe (SEE) and Eastern Europe, the Caucasus and Central Asia (EECCA). The report was prepared for the Sixth Ministerial Conference 'Environment for Europe' held in Belgrade in October 2007.

The objective is to identify opportunities for and barriers to more sustainable consumption and production in the SEE and EECCA countries, and to highlight relevant experience which could be replicated throughout the region.

The main part of the report provides detailed information and a review of SCP initiatives in key production-consumption areas — industry, food, buildings, transport and waste. The analysis in each of these areas is illustrated by examples of implementation of SCP initiatives at local level, drawing on 18 city studies carried out for this report in 11 of the 18 SEE and EECCA countries covered.

What is sustainable consumption and production?

Sustainable consumption and production is broadly defined as a holistic approach to minimising environmental impacts and maximising social benefits related to production and consumption. Considered a practical implementation strategy to achieve sustainable development, this approach addresses economy, society and environment.

Some key SCP policy challenges currently include: achieving a decoupling between economic growth and environmental deterioration, integrating life-cycle thinking in policy-making; improving the quality of life without increasing negative environmental impacts; and preventing the rebound effect, where growing consumption outstrips technology improvements and efficiency gains.

Macroeconomic situation in EECCA and SEE

The 18 countries covered by the report encompass a vast area with widely differing economic, demographic and social situation and development trends. Populations, generally declining in the countries of Eastern Europe and SEE and growing in Central Asia, range from 2 million (former Yugoslav Republic of Macedonia) to 143 million (Russian Federation). GDP per capita varies by a factor of 10 between Tajikistan and Croatia.

Economic restructuring had a significant effect on all economies of the region during the first half of the 1990s. This effect was exacerbated by conflicts in SEE and the Caucasus and extended in some parts of EECCA by Russia's currency crisis in 1997/1998. Despite continuous economic growth since the late 1990s, catalysed largely by foreign investment and increasing prices of exported resources, by 2005 GDP in most countries had still not exceeded 1990 levels.

The structure of the economies in the region has changed significantly since the early 1990s. The share of services now exceeds 50 % in all economies in the Eastern Europe sub-group and in SEE. The agricultural sector has stagnated or declined in most countries and its share of GDP has shrunk throughout the regions. Industry has enjoyed growth in almost all countries since 1995. However, industrial growth in many countries has been predominantly due to the exploitation and processing of fossil fuels, metals and minerals at the expense of less energy- and resource-intensive manufacturing and light industry.

These structural economic changes may partially reflect shifts in domestic consumption patterns, but the strongest influence has been the growth in international trade. This has been characterised by the increasing export of raw materials from a number of resource-rich EECCA countries and a greater import of manufactured goods from other parts of the world.

In several EECCA countries, energy and material use has been decoupled from economic growth since the beginning of the decade. This has been partially due to structural changes in the economies and to increasing production efficiency in some sectors. However, the energy intensity of the EECCA economies remains significantly higher than in SEE and the EU.

CO_2 emissions per capita in the fossil fuel-rich countries of the region are comparable to, or higher than in, the EU despite much lower levels of economic activity. Other countries have very low CO_2 emissions per capita due to lower energy intensities, lower economic activities and high levels of renewable energy use.

Trends in household consumption

In all countries of the region, household consumption expenditure exceeds government expenditure by a significant margin but remains far lower than consumption expenditure in the EU. In terms of purchasing power parity, the consumption expenditure of households recovered more rapidly than GDP and now exceeds 1990 levels in all sub-regions except Central Asia. While this has had a positive impact on the standard of living, it is also likely to have resulted in an overall rise in environmental impacts from household consumption.

The benefits of economic growth since the late 1990s have not been distributed evenly in SEE and EECCA countries. The gap between the wealthiest and poorest groups of society has increased, and there are also significant differences in incomes between urban and rural areas. In many EECCA countries and to a lesser extent, in parts of the SEE region, the share of the population living below the poverty line is still considerable and many, particularly in rural areas, do not have access to basic needs of clean water, clean fuel and sufficient food. On the other hand, there is a growing urban middle class and a small, but increasing, wealthy elite, who are rapidly adopting some of the less sustainable western consumption patterns.

Even though household consumption patterns vary widely across the region, food and clothing are the two categories that tend to dominate household expenditure in most countries. Other significant categories include housing and energy expenditure, home appliances, transport and communication. Two trends which are likely to have important implications for consumption patterns and resulting environmental pressures are the increasing levels of urbanisation in all regions except Central Asia, and the ageing of populations which is most critical in Eastern Europe.

A comprehensive analysis of environmental impacts of household consumption has yet to be carried out in EECCA and the SEE countries. It is expected that life-cycle impacts of food, electricity, heating and hot water, and transport could be of greatest concern, although they are at the same time the sectors with potentially great benefits for the improvement of living standards.

Development of policies on SCP

SCP requires an integrated approach to policy-making. The need to address both production and consumption issues calls for a broad participation of such different sectors as agriculture, energy, transport, development, industry, commerce, and economic and financial affairs.

While in Western Europe the SCP needs to address high levels of consumption, SCP policy and action in EECCA and SEE countries may need to concentrate more on improving efficiencies in production, consumption and resource use. Economic restructuring offers a unique opportunity to 'leapfrog' towards more sustainable production patterns and also to guide consumption patterns towards sustainability before consumption reaches the levels observed in Western Europe.

Social inequalities and lack of access to basic needs are other key focus areas of SCP in SEE and EECCA regions. These may in part be solved through economic growth, but they also require improved distribution of the benefits among the wider population.

Despite policy declarations, framework strategies or policies specifically targeting SCP have not yet been developed in EECCA and SEE countries. Possible reasons for this are that SCP has not yet reached a high priority on the political agenda and that there is weak inter-sectoral and inter-ministerial coordination. However, in most of the 18 countries covered in this report there are examples of SCP-relevant topics being tackled, albeit in an isolated fashion and lacking any overall coordination.

Green Public Procurement

Considering the very large volume of public procurement (estimated to be between 5 % and 15 % of GDP, equivalent to 50 and 150 billion euro

annually across the 18 countries), significant environmental and economic benefits could be achieved through Green Public Procurement (GPP). This would include reduction of emissions and waste, an increase in energy efficiency, development of eco-industry and contributions to job creation. However, there has been very little progress in implementing GPP in EECCA and SEE countries, and the concept has received little attention so far. To realise the potential benefits, the challenge is to initiate GPP on both policy and operational levels.

Environmental management in industry

Industry is the first of the five thematic areas covered in detail in this report. Strong growth in industrial output was recorded in most of the region since the year 2000. In most countries pollution- and resource-intensive industrial sub-sectors (including oil, gas, metals and food processing industries) dominate industrial production.

Data on pollution and resource use in industrial companies, and specific data sets from the industry sectors are neither systematically collected at the nation-wide level nor published in EECCA and SEE countries. The absence of reliable data impedes the development of realistic, targeted and effective policies on environmental management in industry, and hinders the measurement of progress towards more sustainable industrial production.

Overall progress in environmental management in industry in EECCA and SEE countries has been limited. Among the various relevant services only the implementation of environmental management systems (EMS) is offered on a commercial basis. Other services supporting more sustainable production practices in industry continue to be provided primarily through donor-supported programs.

Examples in this report show that a significant number of case studies and demonstration projects on cleaner production, energy efficiency and, to a lesser extent, on eco-technology and related financing mechanisms are now available in most countries. These were mostly established through donor-funded programmes.

The challenges for all countries of the EECCA and SEE regions include:

- addressing environmental management in enterprises on a strategic level;
- improving compliance with relevant legislation;
- promoting market-based provision of relevant services;
- ensuring that financing mechanisms exist which favour implementing eco-efficient technologies.

Food production and consumption

The second area of detailed analysis in the report — food — is fundamentally a quality-of-life issue. Production of food decreased significantly in EECCA countries during the early to mid-1990s and this, combined with decreasing imports of food, led to high incidence of undernourishment in some areas. Consumption of high-cost foods (meats and dairy products) was particularly affected. Economic recovery since the late 1990s has increased access to food for many households and consumption of almost all food groups has been growing steadily. Malnutrition rates have mostly declined, but in some countries remains an important social problem.

Food and environment are closely interlinked: environmental deterioration limits food production capacity, while unsustainable food consumption and production patterns cause environmental damage. Agriculture accounts for most of the environmental impacts of the food production and consumption cycle. Food processing, packaging, transportation and storage and related energy use and wastes also play substantial roles.

The transition period saw a reduction or stagnation in agricultural and food production activities in much of the region, accompanied in EECCA by a strong decline in the use of fertilisers and pesticides. Food production has partially recovered in EECCA but remains lower than pre-transition levels in all but three countries. In much of SEE food production has been declining since the late 1990s. The use of pesticides and fertilisers remains very low in EECCA but has been rising in SEE.

Despite low current inputs to agriculture, the agro-environmental problems of salinisation, soil erosion, and contamination of surface waters continue. This is largely the result of poor management of irrigation, lack of collection and treatment of manure from livestock and other sub-optimal management practices. It is expected that livestock numbers and intensification of agriculture will increase with further economic growth which could exacerbate the situation.

Privatisation processes and globalisation of markets have stimulated foreign investment in the

food sector and both imports and exports of food have been increasing steadily, leading to a growth in environmental pressures from transportation. Growing consumption of processed and packaged food along with increasing use of private cars for food shopping in and around cities, are household trends that add to food-related pressures. Household waste generation is growing across EECCA countries, and a large part of this growth is in food-related waste.

Market reforms have been the main driver of changes in food production in EECCA and SEE countries, and much remains to be done to integrate environmental concerns into agricultural and animal production policies. The last few years have seen the emergence of strategies in a few countries which integrate agricultural development with environmental protection and actions to address rural poverty. The adoption and implementation of similar strategies throughout the regions would bring about significant environmental, social and economic benefits.

A wide range of food and food safety policies has been introduced in EECCA and SEE countries, but implementation has not always been consistent.

Finally, there are significant opportunities for promoting organic farming in SEE and EECCA countries, given the low level of pesticide and fertiliser use, the significant share of small farms, and the availability of agricultural labour. Yet strong challenges remain for the development of organic farming. Organic certification schemes still need to be adopted in most of EECCA. There is generally low public awareness of organic products, little advice and support available to farmers, and an absence of well-defined policies and regulations.

Residential, public and commercial buildings

Buildings account for a large part of the material and energy use of SEE and EECCA economies. Energy consumption in buildings typically represents one-third of national total energy consumption.

Annual residential energy consumption per capita varies from 11 000 kWh in Russia to just 600 kWh in Armenia. Differences between greenhouse gas emissions per capita are even higher. High energy consumption in Eastern Europe and parts of Central Asia is due in part to cold climates, but is also the result of the availability of cheap fossil fuels, low thermal efficiency of buildings, and widespread but inefficient district heating and distribution systems. Per capita water consumption for domestic purposes is also high in most cities in both SEE and EECCA regions. There are limited economic incentives for urban householders to reduce heat and hot water consumption due to the lack of metering and payment by use, artificially low tariffs, and lack of information on how to reduce the consumption of energy and water.

The current construction boom presents an opportunity to improve the thermal efficiency of new building stock. Examples in this report show that retrofitting the dominant, old, low-efficiency multi-apartment buildings also offers a significant potential for reducing environmental impacts and spreading significant social benefits by making possible affordable heating for low income families. Widespread district heating systems could bring about environmental benefits through greater use of combined heat and power generation and the use of biomass or waste to replace fossil fuels, provided that the necessary modernisation of distribution systems takes place.

Current appliance ownership is low in many parts of EECCA and SEE, but is expected to increase as incomes rise. In those SEE and Caucasus countries with abundant hydro-electricity, electricity use for heating and hot water is widespread. Where new hydro capacity is limited, increasing electricity demand for appliances could be more sustainably met by switching to solar or geothermal energy for heating and hot water supply.

Many countries have established energy efficiency strategies, but fewer have translated them into concrete action. Institutional capacity and the political will to ensure their implementation is uneven. Examples in the chapter show that policy instruments recently used in some countries include: new thermal building standards; building energy auditing and labelling; metering installation programmes; tariff reform; and economic incentives to promote use of combined heat and power plants. Sustainable heating strategies, energy labelling, minimum standards for appliances, and economic instruments promoting energy efficiency are generally lacking. In addition, recycling and reuse of construction and demolition waste could significantly reduce the demand for resources in the construction of buildings.

A large number of local initiatives on improving energy efficiency in residential, public and commercial buildings have been carried out in cities in EECCA and SEE, often with international

funding. Barriers to their wider adoption — despite reasonable payback periods — include lack of available financing, low payment discipline for energy services, and lack of locally available affordable efficiency technology.

Transport sector

Following a deep decline in the 1990s, levels of freight and passenger transport have been growing since 2000. Despite a few exceptions, the use of transport has not yet returned to the levels of the early 1990s. Economic recovery, with its increased levels of production and import and export of goods, is a key factor behind the growing transport activity.

Greater individual wealth has led to greater demand for passenger travel, both for the purposes of employment and for leisure. Private car ownership is rapidly increasing, particularly in SEE and Eastern European countries, stimulated by the desire for increased private mobility and because of deteriorating public transport services.

Transport infrastructure in the regions has suffered from a lack of investment. Public transport especially has been affected by declining investment and a sharp decrease in state subsidies. Attracting investment for infrastructure development has proved to be easier for major roads than for either local roads or for public transport. In urban areas some authorities are reallocating road space previously used by public transport to cater for the increases in private mobility.

The greater use of transport has been accompanied by an increase in energy use and emissions of greenhouse gases as well as other pollutants. The latter are causing considerable air quality problems in many cities, exacerbated by old and poorly maintained vehicle fleets. Some progress is being made in addressing these problems, but there is plenty of scope for further regulatory and economic measures to ensure that new vehicles are cleaner, and that existing vehicles are maintained properly. Consideration might also be given to actively phasing out older, more polluting vehicles.

Progress has been made in improving the quality of transport fuel, e.g. banning leaded petrol in most countries. However, insufficient use is generally made of regulatory and economic instruments to reduce the adverse environmental and social impacts of transport, and little attention is paid to measures to manage the demand for transport. The use of public transport can be encouraged by wider use of demand-management measures, such as dedicated lanes for buses and trams.

Case studies in the chapter demonstrate that the countries of SEE and EECCA are beginning to put in place the strategic policy and institutional frameworks to address some transport-related problems. Nevertheless, environmental and transport concerns are still not well integrated with each other and with spatial planning.

Given the still moderate levels of private transport use and car ownership and the need for modernisation of transport systems, there are opportunities for the SEE and EECCA countries to avoid the widespread transport problems of developed western countries. A coordinated and integrated approach needs to be taken to ensure that the benefits of all transport modes — from private car use, to public transport, cycling and walking — are recognised and maximised.

Waste management

Waste management is the fifth area covered in detail in the report. Total waste generation in EECCA and SEE countries is high, mostly because of large-scale resource extraction and processing.

Total waste generation per capita in EECCA is 14 tonnes per year compared with 4 tonnes in the EU. There are massive differences between individual countries in total waste generation.

Significant amounts of hazardous waste are generated, but only a small fraction is managed in an environmentally safe manner. This adds to the already existing problems of many legacy hazardous waste dumps in the region.

Amounts of industrial and municipal wastes are increasing as economies grow and the level of wealth rises. However, municipal waste still accounts for a small part (up to 5 % in EECCA and 20 % in SEE) of total waste generated, and the per capita levels are much lower than in Western Europe.

Almost all municipal waste is landfilled. Most landfills are in a poor technical condition, and very few have collection of landfill gases and leachate. Moreover, significant amounts of municipal wastes are disposed of in illegal or unprepared sites.

Some industrial waste is recycled, in response to economic demand for their resources. Incineration

or recycling of municipal waste is not common. Current reuse and recycling of demolition and building waste is very low. There are few comprehensive attempts to implement waste prevention strategies.

While there is considerable potential and a need for more sustainable solutions to waste management, in general only limited improvement has taken place over the last several years. However, case studies in the chapter show examples of encouraging initiatives in some countries, including the recent development of hazardous waste strategies, and gradual improvements in landfill and waste collection infrastructure. Some successful waste management programmes have been implemented at municipal level.

In many municipalities the waste management systems have yet to be modernised. Increasing public participation to ensure proper municipal waste management and higher rates of recycling and reuse remains a challenge. It is also important to stimulate industries to take advantage of opportunities in recycling and resource recovery.

Development of waste strategies or action plans, better enforcement of legislation and introduction of financial incentive mechanisms for waste management are necessary to achieve more SCP-oriented waste management. At institutional level, strengthening of the political commitment, and improved coordination and cooperation among the different authorities responsible for waste are essential.

The way forward

The on-going economic and social restructuring in the region provides a unique opportunity to establish more resource-efficient, safe and sustainable production patterns and, at the same time, improve the quality of life. Some elements of the 'legacy of the past' can support a society with more sustainable production and consumption patterns. These include the widespread existence of district heating systems, extensive railway infrastructure, relatively widely used public transport or reuse and recycling systems. Low use of synthetic fertilisers and pesticides in agriculture opens good prospects for organic food production. In the building sector the current construction boom presents an excellent chance to improve the thermal efficiency of new building stock.

There are many promising opportunities for EECCA and SEE countries to 'leapfrog' and avoid many of the production- and consumption-related problems common in Western Europe. But this will require political commitment to ensure appropriate policy development, including regulatory frameworks, economic incentives, and integrating environmental concerns into sectoral policies.

The keys for future success of SCP policies include: development of national SCP strategies and programmes reflecting the country's priorities and with focus on the improvement of quality of life; strengthening institutional capacity for SCP; and raising public awareness about SCP. One critical factor is building the capacity and knowledge to allow the actors not only to recognise and understand the problems, but also to choose the best way to respond to the specific SCP challenge.

Policy action should not only focus on technological aspects. Experience shows that technology alone will not be the solution because of the rebound effect, where despite increases in efficiency of products and services, a resulting reduction in cost and an increase in consumption eats into the energy and material savings.

In conclusion, there are numerous opportunities for regional cooperation and the sharing of experience in implementing more sustainable consumption and production. To some degree this is a result of the common language. As the case studies in this report show, the key factor is that many countries face similar problems, which may well have similar solutions. Many successful initiatives have been implemented at local level, especially in such areas as energy efficiency for buildings, the transport sector, and municipal waste management. These could be shared and possibly replicated throughout the SEE and EECCA countries.

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