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INTRODUCTION

1. This document aims at monitoring implementation of sustainable development policies in the UNECE region in the areas of transport, chemicals and waste management, mining and sustainable consumption and production patterns. These policy areas comprise the thematic issues under review during the current two-year cycle (2010–2011) of the CSD Multi-Year Programme of Work.
2. With respect to cross-cutting issues and interlinkages, the document includes some information integrated under each of the thematic issues. Additional information related to education, as a cross-cutting issue, is provided in the document on addressing sustainable consumption, production and transportation through education for sustainable development: analysis of good practices in education for sustainable development (ECE/AC.25/2009/4) and in the compilation of these good practices (ECE/AC.25/2009/5).
3. The document has been prepared by the UNECE secretariat with contributions mainly from the United Nations Environment Programme (UNEP

A. Trends and achievements

1. Trends

6. There is a growing sustainability divide in transport among the UNECE countries. While the European Union (EU) Member States, the United States of America and some emerging economies have started mainstreaming sustainability conditions in their transport policies and investment planning practices, there are still many UNECE countries where the transport sector suffers from a legacy of economic stagnation and environmental neglect. The transition process, initiated almost two decades ago, has led to a healthier economic situation in some and to an increased awareness of environmental problems in most of the countries.

7. However, the global target of making cars 50 per cent more fuel efficient by 2050, as established by the Global Fuel Economy Initiative⁵

B. Challenges and lessons learned, and the way forward

15. While there has been good progress in reducing emissions per vehicle due to improved technology, the number of cars has increased significantly. Consequently, the level of fine particulates, very harmful for human health, remains very high in many European countries and cities. Moreover, Serbia is still using leaded petrol, which is very harmful, especially for the mental development of children. Leaded petrol also blocks all standard clean vehicle (petrol cars) technologies like catalytic converters. Several UNECE countries have still not introduced low- sulphur fuels. Imports of cleaner vehicles should be enabled. The issue of export and

20. The main challenges for Governments to manage the transport sector in a sustainable way are:

(a) Climate change mitigation and adaptation measures in transport;

(b) For climate change adaptation in transport, Governments need to assess the actual vulnerability of their transport infrastructure and to make the necessary adjustments in their investment planning;

(c) Transport investment planning needs to be global, not just regional and subregional. A strong Euro-Asian perspective is warranted that supports economic development needs locally (increased network approach vs. corridor approach, with as much as possible harmonized standards for different categories of transport infrastructure).

(d) More widespread use of planning tools is required, thus maximizing the impact of economic, social and environmental considerations in investment planning, as well as integration with spatial planning;

(e) Having road safety improvement targets in all UNECE countries and powerful national programmes to achieve these targets;

(f) Adopting strategies for cleaner and more efficient vehicles, including cleaner fuels, stricter vehicles standards and a shift towards more efficient technologies (e.g. electric). More UNECE countries should participate in global initiatives such as the Partnership for Cleaner Fuels and Vehicles and the Global Fuel Economy Initiative, which promote technology and knowledge exchange;

(g) Periodic technical inspection of vehicles is a must for improved road traffic safety and for enforcing environmental vehicle standards – neither the regulatory nor the institutional framework is in place in many UNECE countries;

(h)

24. In North America, the chemical industry is a keystone of the economy both in the United States and in Canada. The chemical industry in the United States provides over 2 per cent of the total US GDP and nearly 12 per cent of the manufacturing GDP. On a value-added basis, chemicals is the largest US manufacturing sector. The industry employed more than 1 million people in 1997, including nearly 90,000 scientists, engineers, and technicians engaged in research and development⁹. The United States is the largest chemical producer in the world, with over 25 per cent of total production. The US production of the top 100 chemicals exceeded 500 million tons in 2000. For 1998–2008, the annual growth in US chemical shipments was 5.2 per cent.¹⁰ In Canada, the chemical/chemical products sector ranks fourth in manufacturing sectors and sixth overall as a creator of wealth in Canada's economy. Over half of umh 6n-3.6639322.79219(n)-0.96022 mechanisms have been established. At the global level, in addition to the Basel unvention and the Montreal Protocol, two major chemicals-rel698406(n)-4141cds entered into force in 2004: the Rotterdam Cnvention and the Stockholm unvention. A “globally harmonized system of classification and labelling of chemicals” was agreed in 2001 and is in the process of being implemented worldwide

11.

26. Negotiations for a global legally binding instrument on mercury will commence in 2010 and will be completed by 2013. urrent discussions under the Montreal Protocol focus on ozone and climate interlinkages and the most appropri2.79219(n)-3.6639322.79219(n)-tive chemicals amh technologi zero ozone depletion (ODP) and zero or low global warming potenti2.714.3252(l)11.5331()-16.4669(()2.5788(C on Long-range Transboundary Air Pollution and its two protocols on per pollutants (POPs) and heavy metals, the unvention on the Transboun(6n-3.6639322.79219(n)-r)2.5788(y)-0

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⁹ (<http://www.eia.doe.gov/emeu/mecs/iab/chemicals/page6.html>).

¹⁰ F2.12.0141(c)-5.46151(t)-4.51781(s)3.74812()-19.6765(&)20.3364()6.00703(F)-18.2453(i)-4.51781(g)-0.827691(u)-0.827691(r)3.

B. Challenges and lessons learned, and the way forward

33. With the growing production, trade and use of chemicals their impact on the environment and human health is also increasing. The chemicals industry is energy and water intensive. Past accident and other sites, sometimes contaminated with obsolete chemicals, continue to have environmental and health impacts.¹⁵

34. Policies and measures are required in the following areas: assessment and data collection, implementation of international instruments, strengthening of regulatory infrastructure, capacity-building and financial assistance, and multi-stakeholder involvement.

35. The lack of relevant data and information covering the whole UNECE region means that it is not possible to conclude whether serious threats from chemicals to human health and the environment have been reduced since 2002.¹⁶

36. There is no comprehensive overview available on the status of chemicals management in countries of Eastern Europe, Caucasus and Central Asia, although some countries – Armenia, Belarus, Kazakhstan, Kyrgyzstan and the Russian Federation – have published national profiles to assess their national infrastructure for the sound management of chemicals, under SAICM.¹⁷ There is also a need to identify any further contaminate.

the efficient use of resources. In this regard, the Basel, Rotterdam and Stockholm Conventions have formally agreed to do so.

40. The weakness in regulatory infrastructure for chemicals management in developing countries and countries with economies in transition has been identified as one of the major challenges to implementing the Basel, Rotterdam and Stockholm Conventions. Technical assistance that increases awareness of the requirements under the Conventions, enhances infrastructure, and provides the skills needed to implement the Conventions, can all improve the implementation of obligations. Resource mobilization for the Conventions' full implementation continues to be a challenge. Countries should be encouraged to take an integrated approach to chemicals management when seeking assistance from bilateral and multilateral donors to fill these gaps, in particular in developing infrastructure for the management of chemicals.

41. Effective implementation of the globally harmonized system of classification and labelling of chemicals requires significant efforts from States to amend many existing legal texts concerning chemical safety in each sector (transport, consumer protection, occupational health and safety and environment protection) or to enact new legislation. Although the objective of having the system fully operational by 2008, as recommended by the World Summit on Sustainable Development, has not been completely met, significant progress has been made.

42. A number of countries within the UNECE region have yet to adopt SAICM. The Quick Start Programme requires evaluation to assess whether it is achieving what it was originally intended to achieve. In the UNECE region, only a relatively small proportion of applications to this programme has been successful (17 governmental applications, 9 funded; 2 civil society application, 1 funded).

43. The funding of SAICM requires further consideration and development. A broader donor base needs to be established. The question of distribution of costs of chemicals management – across industry, society and across different levels of scale, and across boundaries – requires consideration. Chemicals management is currently viewed as an area of environmental policy, but the issue needs greater priority and mainstreaming within the chemicals industry.

44. New problems are appearing, resulting from exposures to low levels of an increasing number of chemicals, often in complex mixtures. New risks from “old” pollutants are also becoming evident in light of increased scientific knowledge and new uses.²⁰ For many pollutants, products account for a large part of the emissions of hazardous substances. Therefore, it would be important to work towards a wider inclusion of these emissions into PRTRs, as PRTRs based solely on point sources only account for a part of the total emissions, which limits their use in environmental decision-making.

45. There are two work programmes examining specific chemicals problems: the removal of lead in paint (ICCM2, UNEP, WHO lead); and the processing of electronic waste (Basel, Stockholm, UNIDO lead). Attention also needs to be focused on the safe storage and disposal of existing ozone-depleting substances; this issue may be considered at fifteenth Conference of the Parties (COP-15) of the United Nations Framework Convention on Climate Change (UNFCCC).

²⁰ Europe's Environment: the fourth assessment, EEA 2007.

46. Awareness of the relative costs and benefits of preventing chemicals accidents needs higher priority. A clear message needs to be established that prevention is less costly than clearing contamination. Regarding accidents and poor practices in chemicals management, a mechanism needs to be put in place for lessons learned, and for disseminating the experience gained.

47. Sound chemicals management must be considered as a key issue of corporate social and environmental responsibility (CSER). Responsible Care was launched in 1992; its Charter was adopted in 2006. Chemical industry associations in 53 countries participate in Responsible Care as of 2009. Outside of the EU/North America/Western Europe, only Turkey participates in Responsible Care in the UNECE region, underscoring the need for CSER to be extended in this

have an average total waste generation, ranging from 5–20 tons per capita per year. A rough estimate of the total annual waste generation in the pan-European region is 6–8 billion tons.

50. The amount of waste generated is still increasing in absolute terms, but trends differ from subregion to subregion. From 1996 to 2004, the total waste generation increased by 2 per cent in EU-25 + EFTA. In EU-15 + EFTA, total waste generation increased by 5 per cent in the same period, while total waste generation in EU-10 declined by 6 per cent. However, large differences exist between individual countries, and significant annual variations within a country, mainly due to changes in waste generated in the mining industry.

51. In the five²² Eastern European, Caucasian and Central Asian countries for which data are available, total waste generation increased by 27 per cent in 2002 EFTA 2004. Per capita waste generation in Eastern Europe, Caucasus and Central Asia is higher than in the EU because of the raw material extraction and processing industries, which generate large amounts of waste. For example, in the Russian Federation waste generation varies from 5 to 7 tons per ton of actual product, and in some cases may be even higher.

52. The largest waste streams in Europe originate from construction and demolition, along with manufacturing and utilities. Most

the Soviet era. A variety of pollutants accumulated, including radioactive, military and industrial wastes. The break-up of the Soviet Union, the formation of new independent Eastern European, Caucasian and Central Asian countries and the changes of ownership mean that much of this waste has no legal owner. To make matters more complicated, the smaller Eastern European, Caucasian and Central Asian countries often have little capacity to improve the situation.

57. In Central Asia, large amounts of industrial waste have been accumulated, mainly from resource mining and processing activities. Estimated amounts include 40 billion tons in Kazakhstan, 1 billion tons in Kyrgyzstan, 210 million tons in Tajikistan, 165 million tons in Turkmenistan and 1.3 billion tons in Uzbekistan. The wastes contain radioactive nuclides and metal compounds (e.g. cadmium, lead, zinc and sulphates).

58. There are also large stockpiles of obsolete pesticides containing persistent organic pollutants (POPs), which date back to the Soviet era and that have become a large risk to the environment. Supply of pesticides to state-owned collective farms was administered centrally, and substantial amounts were sent to farms each year regardless of need. Stockpiles grew gradually, with farmers storing them as best they could. Following the break-up of the Soviet Union the supply of pesticides stopped, but these stockpiles have increasingly become a problem, as many storage facilities have no legal owner. In Uzbekistan, about 18,000 tons of banned and obsolete pesticides have been kept in underground depositories since 1972, while in other areas pesticides and their packaging materials were buried in landfills.

59. The US Environmental Protection Agency (EPA), in partnership with States, biennially

revised Waste Framework Directive, and by the thematic strategy on the prevention and recycling of waste.

62. The main waste treatment activities are regulated by the Landfill Directive, the Waste Incineration Directive and the IPPC Directive. For some special waste streams such as packaging waste, end-of-life vehicles and waste electrical and electronic equipment, the principle of waste hierarchy has been transformed, e.g. by the introduction of concrete targets for recycling.

63. In North America, waste management has evolved from waste dumps to integrated waste management with designed sanitary landfill as the central component. Now greater attention is being directed at improved and cost-effective practices that uses landfills as waste processing facilities. Furthermore, with greater emphasis on GHG releases at landfills, novel technologies are being developed either to recover energy from landfill gas or sequestering methane gas.

64.

and capacity-building in waste management – require strengthening, particularly in the SEE and

- (c) What is the most effective way of changing perceptions about waste in business and civil society?

IV. MINING

A. Trends and achievements

1. Trends

74. European countries with developed economies used to be large producers of a wide-range of minerals. Sustained mining over the centuries depleted many known mineral deposits, and locating new deposits has become increasingly difficult, with the exception of common construction minerals. The increased globalization of commodity markets has reduced policymakers' perception of that it is a necessity to achieve national self-sufficiency in minerals. The substantial growth of environmental awareness has made mining less popular to both the public and politicians. For these and other reasons, policies that provided various subsidies, protection and economic incentives to the mineral sector have been increasingly eliminated or substantially scaled back. While coal and base metals production has declined, the industrial mineral sector has prospered. The production of sand, gravel, clay and dimension stone now constitutes the main part of mining activity in most Western European countries. Many of these operations are small, although some large operations also exist. There has been a trend to decentralize regulatory control, at least in part, of these industrial mineral operations to local government.²⁷

75. United States and Canada are major mineral-producing countries with good to excellent geological prospectivity. United States is a net importer of minerals while Canada exports more than it consumes. Mining has been and continues to provide a substantial contribution to the economy of Canada. In the United States and Canada, an increasingly large area is being

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2. Achievements

77. A number of international organizations and bodies are actively assisting Governments in their sustainable development efforts in the mining sector. Among these are the UNECE, UNEP²⁹, the United Nations Conference of Trade and Development (UNCTAD), UNIDO and the World Bank.

78. Several activities at UNECE address specific problems related to mining activities: The *Safety Guidelines and Good Practices for Tailings Management Facilities*³⁰, developed in 2008 under the UNECE Industrial Accidents Convention and UNECE Water Convention³¹, aim at supporting Governments and stakeholders' efforts with a view to limiting the number of accidents at tailings management facilities and the severity of their consequences for human health and the environment.

79. Recognizing the many benefits associated with the coal mine methane (CMM) recovery, UNECE, with support from the U.S. EPA and in close cooperation with the Methane to Markets Partnerships³², launched a programme in 2004 to promote implementation of best practices and provide technical assistance to plan, design and finance CMM projects. With UNECE member States producing 38 per cent of the world's coal and generating 40 per cent of coal mine methane emissions, successful project implementation will benefit the regional and global environment and economies in the UNECE region.³³

80. Improvements in the mining sector cannot happen without active multi-stakeholder involvement. The International Council of Mining and Minerals (ICMM) was established as a platform for industry and other key stakeholders to share challenges and to develop solutions based on sound science and the principles of sustainable development. Its work aims for a respected mining and metals industry that is widely recognized as essential for society and as a key contributor to sustainable development. One of

91. As for human resources in the production processes, the share of vulnerable employment was 10.1 per cent in developed economies and the EU in 2007, with an unemployment rate of 5.7 per cent³⁹. A positive trend regarding employment is the current green job creation taking place in some countries⁴⁰.

92. Although there is still considerable room for improvement in Eastern Europe, Caucasus and Central Asia, some countries have succeeded in slowing resource and energy use, materials extraction and environmental pollution relative to their economic growth in certain subsectors. The relatively high efficiency of resource consumption in Western Europe is partially because of a clear tendency to outsource resource-intensive and polluting industry.⁴¹ Western and Central Europe have achieved a relative decoupling of material and energy use from economic growth. However, there is a little evidence to show decoupling the global environmental impacts from European consumption in general⁴². In North America, the ratio between energy use and GDP per capita GDP, the ratio between energy use and GDP continued a slow but positive decline beginning in 1970, reflecting a shift to less resource-intensive production patterns, although the subregion remains among the most energy-intensive in the industrialized world.

93. EEA projected that resource use in both EU-15 and EU-10 is set to increase towards 2020.⁴³ Energy needs in SEE and Eastern Europe.

96. Many countries have initiated policy work on SCP. The Czech Republic, Finland, Hungary, Poland and the United Kingdom, for example, have developed policy programmes and action plans. SCP was also embedded in national strategies for sustainable development (SD) in Austria, France, Italy, Malta, the Netherlands and Sweden, and in the Federal Strategies for Development in Belgium. Other countries, e.g. Denmark and Germany, are pursuing approaches that focus more on the implementation of specific policy instruments, e.g. Sustainable Public Procurement or Eco-Labeling without explicit policy framework documents⁴⁵. Sweden is integrating SCP aspects and action into other Strategies and Governmental Bills. Croatia and Kazakhstan started work with assistance from UNEP⁴⁶ on the development of SCP action plans

101. The remaining challenge, therefore, is to maintain the positive development in resource/energy efficiency and to stabilize and decrease the absolute amount of resource/energy use, in particular with respect to certain resources and materials. Further challenges are the development and implementation of policies to ensure positive links between economic growth and decent job creation and improved livelihoods, and integrating SCP components into sectoral policies.

102. In the SEE and Eastern European, Caucasian and Central Asian countries, SCP policy initiatives can contribute to addressing poverty reduction and meeting basic needs. In these countries, some elements of the past can support good SCP behavioural patterns. These include the widespread existence of district heating systems, the extensive railway infrastructure, the relatively widespread use of public transport, and re-use and recycling systems. The decreased use of fertilizers, pesticides and other agro-chemicals in agriculture for the last 15 years opens up good prospects for organic food production. Political commitment is needed to ensure the development of policy package and necessary investment in a timely manner.

103. There are a wide range of SCP activities in North America, but they are “dispersed and scattered”. “Governments, business and ab

Policy Action Plan, but it remains to be seen how it will progress and how fast the various initiatives will be implemented and take effect. NGOs have criticized the plan for being limited in scope, and for being not nearly enough⁵³.

C. The way forward

107. At the Sixth “Environment for Europe” Conference (Belgrade, 2007), the ministers of the UNECE region called and supported the following three key areas of work for SCP: (a) development of national SCP programmes, strategies and implementation plans; (b) subregional and regional partnerships; and (c) dissemination of best practices⁵⁴. Governments also recommended capacity-building on SCP through training and demonstration projects⁵⁵.

108. Development of SCP programme at the national level. Making consumption and production patterns more sustainable requires country-specific plans and policies, enriched by experience and information from subregional and regional activities providing experience and information-sharing. A strategic programmatic approach can help balance the necessary interventions for the consumption and production of, and markets for, goods and services. It should also link long-term vision to medium-term ta

