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**ENTERPRISE ENVIRONMENTAL MONITORING AND REPORTING
IN EASTERN EUROPE, THE CAUCASUS AND CENTRAL ASIA^{*/}**

Note by the secretariat

SUMMARY

This note demonstrates linkages between the monitoring by enterprises in Eastern Europe, the Caucasus and Central Asia (EECCA) of their environmental impact and the capacity of environmental authorities in the subregion to report data on important environmental indicators. It identifies problems and bottlenecks in the area, presents international initiatives to improve enterprise environmental monitoring and reporting, and offers avenues which the Working Group might explore to add value to current initiatives.

Introduction

1. Data collection for the Kiev Assessment report submitted to the fifth Ministerial Conference “Environment for Europe” revealed that the biggest gaps in data availability related to urban air pollution, soil contamination, soil remediation, waste management systems including hazardous waste, water quality, waste-water treatment and discharge to water, and hazardous substances (see Lessons learned from data collection for the Kiev report, ECE/CEP/101, para. 18). Problems with data availability in these areas are especially acute in EECCA.

^{*/} This document was submitted late as it required external inputs.

2. Work on environmental indicators for EECCA reconfirmed that substantial improvements in environmental monitoring and data collection were needed in countries of the subregion to adequately report on internationally recognized indicators on air emissions, water discharges and waste management, among others (see CEP/AC.10/2005/4). Such improvements are difficult to achieve without the commitment of, and cooperation with, enterprises. These include facilities and installations under public, private or mixed ownership that are obliged to collect and report on their environmental impact and compliance with environmental standards (including limit values) to the public authorities. Some enterprises started to participate also in voluntary environmental reporting schemes.

3. The Working Group may wish to review the current regulatory and institutional framework for enterprise self-monitoring and environmental reporting in EECCA to identify problems and bottlenecks that need to be resolved through concerted action. Analytical studies prepared by the Working Group so far and the assessments made under the UNECE programme of environmental performance reviews provide useful information to this end.

I. CURRENT SITUATION

A. Self-monitoring

4. Environmental legislation in most EECCA countries requires mandatory self-monitoring. Self-monitoring generally includes a variety of activities by, and at the expense of, enterprises. These activities generally include:

- (a) Measurements of emissions, discharges and waste streams;
- (b) Measurements of environmental quality in the vicinity;
- (c) Record-keeping for verification by environmental and health inspectorates;
- (d) Reporting to public (statistics and environmental) authorities.

5. Accredited laboratories should monitor emissions and discharges from facilities and installations. State standardization authorities issue licences to enterprises' own environmental laboratories. In the Russian Federation, for instance, the Law on the Protection of the Environment requires mandatory self-monitoring, which is the responsibility of an enterprise's environmental division. Industrial laboratories apply the same methodological guidelines as the State laboratories and the industrial laboratories must obtain a licence to operate. However, these guidelines have to be specifically described in a special regulation, approved by the enterprise managers. These laboratories monitor all relevant emissions as well as the overall efficiency of environmental protection devices. The State control bodies review the activity of the enterprise laboratories at least once a year, covering both the analytical procedures and sampling schedules. If a laboratory's performance is found to be inadequate, its results cannot be used for reporting and penalties are applied if this is contravened. However, instances of manipulation of information by enterprise managers do occur.

6. Self-monitoring requires reliable monitoring equipment and quality control standards for monitoring and record-keeping to be in place at enterprises. This is not always the case in EECCA. Generally only large enterprises have their own environmental analytical laboratories.

In Belarus, for instance, there are only 250 analytical laboratories in enterprises while some 2,500 enterprises report statistical data on their air emissions. Few EECCA countries produce equipment to measure polluting substances. There are few distributors.

7. In some countries, enterprises subcontract sampling and laboratory analysis to third-party laboratories like those of health inspectorates or of public environmental authorities. There are no procedures, however, to prevent conflicts of interest. For instance, in Tajikistan monitoring responsibilities at enterprises are frequently vested in the laboratories responsible for technological control over production or product certification. Where there is no laboratory at all, enterprises contract the sanitary-epidemiological laboratories of the Ministry of Health or analytical laboratories of the State Committee for Environmental Protection and Forestry to do the job.

B. Statistical reporting

8. Enterprises are obliged to report regularly specific environmental data to the public authorities. Mandatory statistical reporting is based on specific statistical forms on, for instance: (a) emissions in the atmospheric air from industry, energy and transport; (b) discharge and treatment of waste water; (c) waste generation, treatment and disposal; (d) environmental expenditures. National statistical agencies are the ultimate recipients of these forms. They process, store and publish some of these environmental data in their annual statistical yearbooks or in periodical environmental statistical compendiums. Very often, environmental statistics are submitted to local environmental authorities for verification. In some countries, Environment Ministries are responsible for collecting and handling selected environmental statistics and for the transmission of aggregate data to the statistical agencies.

9. In some countries like Georgia and Tajikistan, enterprises do not report data on volumes and types of waste generated, treated and disposed of. In most other countries, waste data are reported according to five classes of waste toxicity. As a result they are not compatible with international waste classification systems. Waste water data are generally reported by waste-water treatment plants and not by polluting enterprises.

C. Compliance reporting

10. In few countries, enterprises are obliged to report quarterly or annually specific emission data to local environmental authorities. Annual reporting on polluting emissions into the atmosphere in Kazakhstan is one example. These data are generally used for checking compliance with environmental permits or established limit values and adjusting the payments due for air emissions, waste-water discharges and waste generation. These payments are established for long lists of polluting substances and compounds. For instance, air-pollution charges in Azerbaijan are levied on 88 different pollutants, while in Tajikistan charges for the discharge of pollutants into water bodies are specified for 197 compounds. Neither the reported data nor the results of sporadic checks by environmental authorities are assembled and published in environmental or statistical reports. As the mandatory statistical forms do not cover most of the compliance monitoring data, they remain in the archives of enterprises, local environmental inspectorates and State analytical laboratories.

11. It should be noted, furthermore, that few of the regulated polluting substances are routinely monitored. The equipment and other resources at the disposal of both enterprises and compliance monitoring authorities can measure only a limited set of parameters. For instance, in Azerbaijan, up to 8 air-pollution parameters are regularly monitored, while in Belarus it varies from 6 to 32. Even such limited self-monitoring is done only at larger industrial facilities.

12. Emissions and discharges of most pollutants are very often calculated, on the basis of the technological specifications of the facility or installation, the time that the equipment is in operation and the use of pollution abatement equipment. Sometimes calculations are based on fuel consumption data and emission factors. In most countries enterprises do not report emissions of heavy metals and persistent organic pollutants, as modern calculation and modelling methods to prepare emission inventories are either not known or not applied there.

13. There are some initiatives in EECCA to link data on the environmental pollution load of enterprises with local ambient environmental quality data to establish environmental impact. The development of a "local" monitoring programme in Belarus is one example. The ultimate aim of this programme, which has been under development since 2000, is to make emission limits established for enterprises dependent on their actual environmental impact. Initially, this monitoring programme covered 33 enterprises. Most of these were large oil refineries and chemical plants. Municipal waste-water treatment plants in six major cities were also included. In 2004, 80 enterprises reported data on their waste-water discharges. This covered 75 to 88% of all discharges in the main river basins. That same year 76 enterprises, representing 53% of total air emissions in Belarus, reported their air emission data. The emission and discharge data were compared with data from the Hydrometeorology Department on urban air quality and on water quality in the recipient water bodies upstream and downstream from the discharge points.

II. INTERNATIONAL INITIATIVES

A. Pollutant registers

14. The Protocol on Pollutant Release and Transfer Registers (PRTR) to the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters was adopted in 2003. The Protocol requires Parties to establish nationwide systems that report and collect pollution information from individual facilities, on diffuse pollution and on aggregate pollution levels. It covers releases and transfers of at least 86 pollutants, such as greenhouse gases, acid rain pollutants, ozone-depleting substances, heavy metals and certain carcinogens, such as dioxins.

15. All States can participate in the Protocol, including those which have not ratified the Aarhus Convention. Five EECCA countries (Armenia, Georgia, Republic of Moldova, Tajikistan and Ukraine) signed the Protocol and others (like Belarus and Kyrgyzstan) have expressed interest in acceding to the Protocol in the near future. Effective implementation of a PRTR system will require developing the capacity of: (a) reporting facilities to monitor pollutant releases and transfers; and (b) public authorities to process pollution data, manage PRTR databases and make them accessible to the public.

16. EECCA countries will have, first of all, to revise their enterprise monitoring and

reporting systems and strengthen them considerably. The owners or operators of facilities will have to accurately report yearly releases of pollutants exceeding relevant thresholds to air, water (to surface water, sewers without a final waste-water treatment plant and to an off-site waste-water treatment plant) and land (including by underground injection) as well as off-site transfers of waste or waste water fed into a (public) sewer system. Data quality assurance will be a particular challenge.

17. EECCA environmental authorities will have to develop or revise appropriate reporting forms and improve existing reporting methods, e.g. through online reporting, and develop guidance documents related to pollution measurement, calculation or estimation (or translate available international guidelines and disseminate them among facilities). Training workshops for environmental personnel of reporting facilities will have to be organized. Communication and coordination will have to be approved among the authorities that are responsible for monitoring pollution to different media.

B. Environmental enforcement

18. The Task Force for the Implementation of the Environmental Action Programme (EAP) for Central and Eastern Europe, the Caucasus and Central Asia is developing a regulatory environmental programme implementation programme. The programme, which runs over the period 2003-2006, focuses on assisting individual EECCA countries in reforming environmental policy instruments in a coherent way, strengthening environmental enforcement policies and institutions. Some activities deal with environmental issues of enterprises such as environmental permitting, pollution charges, enforcement and compliance indicators. A network of environmental enforcement and compliance authorities in EECCA is involved in these activities.

19. A pilot project in Kazakhstan was launched in late 2003 to analyse the country's situation and present recommendations for developing tools to select priority elements for self-monitoring systems and identifying the types of industries that should be subject to continuous self-monitoring and regular inspection. A survey was undertaken of heavy industry on incentives to comply with environmental legislation and introduce self-monitoring systems for this purpose. The ultimate goal is to develop technical guidance to help industry and regulators.

C. Voluntary reporting

20. The International Standardization Organization (ISO) promotes its 14000 series standards worldwide. The ISO 14001 standard "Environmental management systems-Specification with guidance for use" is the standard within this series that specifies the requirements of an environmental management system including environmental data management. The adoption of this standard by EECCA enterprises is in its early stages. According to the ISO statistical data of end-2004, a limited number of ISO 14001 certifications were acquired in Azerbaijan (5), Belarus (8), Kazakhstan (4), the Russian Federation (48), Turkmenistan (1) and Ukraine (7).

21. The adoption of the ISO 14001 standard triggers the interest of companies in producing voluntary environmental reports on a regular basis. Such reports help to promote companies' image vis-à-vis their customers and public opinion. There is a very slow development in EECCA in this regard. So far, only few large, export-oriented EECCA companies have published ad hoc

environmental reports. The production of a reasonable environmental report is time-consuming and resource-demanding. It requires strong company commitment, the availability of trained environmental personnel and, last but not least, encouragement by public authorities.

22. The Global Reporting Initiative, a multi-stakeholder organization, is taking the lead in establishing a set of guidelines for companies to report their sustainability (including environmental) performance. So far, more than 300 companies, mostly from developed market economies, have reported according to these guidelines. There is no EECCA company in this list as publishing sustainability reports is yet more complicated than producing environmental ones.

III. POSSIBLE ROLE OF THE WORKING GROUP

23. Strengthening enterprise self-monitoring and reporting contributes to several objectives of the EECCA Environmental Strategy adopted at the Kiev Ministerial Conference “Environment for Europe”. It helps to improve data collection to produce state-of-the-environment and other national environmental reports, and to report to the international community according to obligations under multilateral environmental conventions and pan-European ministerial processes. It improves monitoring of enterprise compliance with environmental regulations. Increasing the quantity of environmental information produced by enterprises, improving the quality of this information and enhancing access to it by the general public help to exert significant downward pressure on polluters and to improve environmental decision-making.

24. As facilitator to achieve the environmental monitoring and information management objectives of the EECCA Environmental Strategy, the Working Group could launch its own or join ongoing international activities aimed at strengthening EECCA enterprise self-monitoring and reporting. The options might include the following:

(a) Prepare a review of the experience gained in UNECE subregions with setting effective regulatory and institutional frameworks to facilitate environmental data flow from enterprises to environmental authorities for the purpose of PRTRs, national assessments and publication;

(b) Collect case studies of the experiences of the private sector in Western countries with adapting to various data collection and environmental reporting requirements including PRTRs, and with applying innovative information tools for database management and online reporting for this purpose;

(c) Draw up an inventory of internationally developed guidance documents related to pollution measurement, calculation or estimation, including emission inventories and modelling;

(d) Organize, in cooperation with the Working Group on PRTRs and, possibly, with the EAP Task Force, a workshop to discuss the results of subparagraphs (a), (b), (c) above and other relevant documentation, and to prepare practical guidelines to EECCA on legal, regulatory, institutional, financial and technical measures to improve enterprise reporting to environmental authorities;

(e) Encourage companies' initiatives to promote enterprise environmental self-monitoring and corporate environmental or sustainability reporting in EECCA which might, for instance, lead to the creation of a clearing house to facilitate information sharing about available equipment, instruments, tools and know-how.