



UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE
Working Group on Environmental Monitoring and Assessment

in cooperation with the Regional Environmental Centre (REC) Moldova

with the assistance of the European Environment Agency (EEA)

*and with the financial support of the “Environment for Europe” Fund of the United Kingdom,
the Ministry of Housing, Spatial Planning and the Environment of the Netherlands
and the Swiss Federal Agency for Environment, Forests and Landscape*

Workshop
on the Application of Environmental Indicators

5-6 July 2004, Chisinau, Republic of Moldova

WORKSHOP MINUTES

1. The Workshop on the Application of Environmental Indicators was held on 5-6 July 2004 in Chisinau (Republic of Moldova).
2. The workshop goal was to prepare *guidelines on the application of the core set of environmental indicators for the countries of Eastern Europe, the Caucasus and Central Asia* providing:
 - (a) Detailed description of each indicator and calculation methods;
 - (b) Recommendations on adaptation of monitoring systems, where necessary, to ensure the collection of primary data for indicators;
 - (c) References to existing international standards, policy targets, methodologies and reference documents.

The manual would assist in improving environmental reporting in EECCA countries, harmonizing their environmental assessments with those of EEA countries and in data gathering for environmental assessment reports to be prepared for the “Environment for Europe” Ministerial Conferences.

3. Experts from countries of Eastern Europe, the Caucasus and Central Asia (EECCA) - Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Republic of Moldova, Russian Federation, Tajikistan, Turkmenistan, Uzbekistan and Ukraine – participated in the Workshop. The majority were experts on environmental indicators dealing with the preparation of state-of-the-environment reports in

the Ministries of Environment (or on their behalf) and representatives of statistical services working in the field of environmental statistics. Representatives of the United Nations Economic Commission for Europe (UNECE), United Nations Statistics Division, the European Environment Agency (EEA), the Organization for Economic Co-operation and Development (OECD), the Interstate Statistical Committee of the Commonwealth of Independent States, the Regional Environmental Centre (REC) Moldova and local environmental non-governmental organizations also took part in the Workshop.

4. Mr. Victor COTRUTA, Executive Director of REC Moldova chaired the Workshop.

I. OPENING AND INTRODUCTORY SESSION

5. Welcoming statements were addressed by:

(a) Mr. Victor COTRUTA, who underlined the importance of the meeting towards the improvement of environmental monitoring in EECCA countries. He referred to the role of RECs in the implementation of the EECCA Environment Strategy, which included actions to strengthen environmental monitoring and reporting systems;

(b) Mr. Andrei CONISESCU, Chairman of the Committee on Ecology and Territorial Development, Parliament of the Republic of Moldova, who referred to the aspiration of the Republic of Moldova to harmonise its environmental policy and legislative framework with international requirements;

(c) Mr. Constantin MIHAILESCU, Minister of Ecology and Natural Resources of the Republic of Moldova, who expressed the appreciation of the efforts to prepare a core set of environmental indicators, the application of which will contribute to the improvement of environmental assessment and reporting capacity of EECCA countries at the national, regional and Pan-European levels. He called upon the EECCA countries and international organizations to strengthen partnerships within the "Environment for Europe" process;

(d) Mr. Mikhail KOKINE, Secretary to the UNECE Working Group on Environmental Monitoring and Assessment, who welcomed the participation of experts from both environmental and statistical services of all EECCA countries as well as the participation of experts on environmental indicators from international organizations. He referred to the Kiev Ministerial Conference and, in particular, to the provisions on environmental monitoring and assessment of the Kiev Ministerial Declaration.

6. Ms. Anita PIRC-VELKAVRH, EEA made a presentation on *Pan-European environmental reporting and EEA core set of environmental indicators*, introducing the role of indicators, providing explanations of the need to agree upon common indicators and of the purpose of the EEA core set of environmental indicators, and making a review of indicators from the EEA core set per topic. Also, she made a comparison between the EEA and EECCA core sets of environmental indicators referring to many similarities as the second set originated from the draft EEA core set.

7. Mr. Jyrki HIRVONEN, UNECE made a presentation on *Indicators in environmental performance reviews of EECCA countries*. He briefed the participants on the history of environmental

performance reviews (EPRs), data sources for EPRs and on problems with environmental indicators such as: identification of relevant indicators, data collection, finding linkages, comparability and compatibility between countries etc.

8. Mr. Ulrich WIELAND, UN Statistics Division made a presentation about *Environmental statistics and reporting according to sustainable development indicators at the global level* referring to the work of the UN Statistics Division, Millennium indicators, sustainable development indicators, environmental accounting etc. He introduced also the UNSD/UNEP environmental questionnaires.

9. Mr. Mikhail KOKINE, briefly presented *The core set of environmental indicators for EECCA and draft guidelines structure*, explaining the purpose of the EECCA core set and briefing the participants on the UNCSD methodology that had been applied for indicator descriptions. He thanked the group of five consultants from EECCA countries who had helped UNECE to prepare discussion papers for the Workshop. He thanked also those participants who submitted written comments on the working documents prior to the Workshop. He noted a particular contribution by Mr. Petru COCIRTA, Republic of Moldova who had submitted detail comments on all sections of the draft guidelines.

10. The authors of working documents for the Workshop introduced parts of draft guidelines in the following order:

(a) Mr. Alexandre SHEKHOVTSOV, UNECE consultant from the Russian Federation, introduced the indicators and their description for the following topics: *emissions of air pollutants and effect of abatement measures, water quantity and transport* (Working documents 1, 4 and 9 bis);

(b) Mr. Guennady TISHCHIKOV, UNECE consultant from Belarus presented the indicators for the topics: *human exposure to air quality exceedance, water pollution and hazardous substances in inland waters* (Working documents 2, 6 and 5);

(c) Ms. Irina ATAMURADOVA, UNECE consultant from Turkmenistan presented the indicators related to: *ozone layer, climate change and energy* (Working documents 3 and 9);

(d) Mr. Piotr GORBUNENKO, UNECE consultant from the Republic of Moldova, introduced the indicators on *land resources and soils, biodiversity and on agriculture* (Working documents 7 and 8);

(e) Mr. Merab SHARABIDZE, UNECE consultant from Georgia, presented the indicators on *coastal and marine waters, and on waste* (Working documents 6bis and 10).

Discussion

11. The presentations were followed by the discussion, as follows:

- Mrs. Liubov LOSOVSKAYA, Belarus, brought to the attention of the workshop participants that the system of data collection on forests in Belarus was based on other criteria than those provided in the description of indicators BDIV 1d, BDIV 2d, CC8b (Working document 8 on Biodiversity). No data collection was taking place on these indicators in the country;

- Ms. Meri BROLADZE, Georgia, mentioned that the economic aspects of waste management were not reflected in Working document 10 on *Waste*;
- Mr. Alexandre DUMNOV, Russian Federation, referred to sometimes confusing terminology used in the documents. He proposed to be more careful while using concepts like economic activities and economic sectors;
- Ms. Anita PIRC-VELKAVRH informed the participants that EEA planned to issue in December 2004 a publication which would comprise detailed information about EEA indicators and a glossary. It was proposed to the EECCA experts to distinguish ranks for indicators (i.e. short-term, medium-term and long-term). She advised to concentrate on short-term indicators that were operational in most EECCA countries.

II. WORK IN TECHNICAL GROUPS

12. Mr. Mikhail KOKINE referred to the next part of the workshop, i.e. the work in five parallel working groups. The minimum number of participants per group was proposed to be 5 persons. To make the work in groups more effective, the participants, who had registered for participation in several groups, were advised to identify a working group of main interest.

13. The participants worked in five working groups, as follows:

Working group 1. Air – emissions of air pollutants and effect of adopted measures. Water – water quantity. Transport.

Moderator: Mr. Alexandre SHEKHOVTSOV

Assistants: Mr. Sergey TCHIZHOV, Russian Federation and Mrs. Ludmila GOFMAN, REC Moldova

Working group 2. Air – human exposure to air quality exceedance. Inland water – pollution and hazardous substances in water.

Moderator: Mr. Guennady TISHCHIKOV

Assistant: Mrs. Carolina BLAJIN, REC Moldova

Working group 3. Air – Ozone layer. Climate change. Energy.

Moderator: Ms. Irina ATAMURADOVA

Assistant: Ms. Anna CROITOR, REC Moldova

Working group 4. Land resources and soils. Biodiversity. Agriculture.

Moderator: Mr. Piotr GORBUNENKO

Assistant: Mr. Alexei ANDREEV, Republic of Moldova

Working group 5. Water – coastal and marine waters. Waste.

Moderator: Mr. Merab SHARABIDZE

Assistant: Mr. Corneliu IARINCOVSCHI, REC Moldova

III. PRESENTATION OF RESULTS AND DISCUSSIONS

14. The working group worked on Monday afternoon and on Tuesday morning. The plenary session in the afternoon of 6 July 2004 started with working group moderators presenting the outcomes of the groups' work by projecting on the screen the revised description of each indicator and providing explanations and comments.

15. Mr. Guennady TISHCHIKOV presented the outcome of the work within the **Working group 2**. He indicated that:

(a) Group members had discussed all submitted proposals and had come up with a series of amendments. Main amendments to the documents related to the section on underlying definitions and concepts. Each indicator was assigned a rank (long-term, medium-term or short-term). Other changes occurred in the description of the purpose; international targets, standards or guidelines; difficulties and limitations, international organisations involved;

(b) With regard to the indicator group on *nutrient and organic pollution of water*, Working document 5, the Working group agreed to replace the concept "nutrients" with "biogenic (organic) matter" as the latter was the adopted terminology in EECCA countries. The "ammonium" was removed from the title of the *indicator on BOD and ammonium in rivers*. With regard to the *indicators on eutrophication*, norms on chlorophyll for different categories of lakes were added, and sections on the underlying definitions and concepts as well as on difficulties and limitations were revised;

(c) In the Working document 6 on *hazardous substances in water*, most changes occurred in the section of underlying definitions and concepts.

Discussion

16. The presentation was followed by the discussion, as follows:

- Mr. Petru COCIRTA, mentioned that the section of underlying definitions and concepts was insufficiently described in most documents. In some cases, the section referred to general measurement methods while it should answer such questions like: what is the concept of this methodology and why is it important. Another comment related to the section on references to international databases. References were made to EECCA databases only, while international databases should be covered as well.

- Mr. Guennady TISHCHIKOV explained that the group could not access information on existing international databases.

- Mr. Dzhumshid DZHANGIROV, Russian Federation, brought the attention of workshop participants to the need of editing the working documents. In the section on international targets and standards, the emphasis should be placed on the clear description of international targets and standards. For the guidelines' users it should be clearly specified whether the provided values were targets or standards. With regard to targets, it should be mentioned for which period these were set. The presentation order of indicators should be reviewed as some indicators providing some

clarifications or opening the abbreviations were presented later than indicators for which these clarifications or abbreviations were relevant (for, instance, WEU2 was presented after WEU4). He mentioned also that in some descriptions EECCA countries were erroneously named the Commonwealth of Independent States.

- Mr. Mikhail KOKINE recalled that the consultants had been invited to make references to international databases. He stated that references to both EECCA and international databases might be useful for future guideline users.
- Mr. Guennady TISHCHIKOV noted that EECCA databases should be the first source of information. The access to international databases was very limited in a number of cases.
- Mrs. Liubov LOSOVSKAYA expressed the opinion that databases should refer, first of all, to EECCA databases, and then, to international ones.
- Mr. Piotr GORBUNENKO expressed the opinion that during the last 10-12 years, individual EECCA countries reached different levels in indicator development and data collection. If EECCA countries continued using old national methods and standards, they would face the problem of incompatibility or a very low compatibility of their national databases. He stated that the reference to international databases was much needed to serve a reference for national data collection. The emphasis should be placed on international databases, especially because the EECCA countries were participating in international reporting.
- Mr. Mikhail KOKINE mentioned that Working group moderators would have to elaborate more on the section with references to international database by adding information on existing international databases. He provided an example of databases of the UN Statistics Division that included data from EECCA countries collected by sending out questionnaires every second year. Another international database was established through data collection for *Kiev Assessment*. This database, including datasets on water, waste and land contamination in EECCA countries, was accessible via Internet.
- Mr. Ulrich WIELAND informed the participants that the database of the UN Statistics Division was not yet available on the web. But it will become accessible at the end of 2004. The database comprises information on air, water, land and waste, collected from the answers to its questionnaires. He referred also to other relevant databases, such as those of FAO and WHO.

17. Mr. Merab SHARABIDZE presented the results of the **Working group 5**. He informed the participants that:

(a) The group revised *12 indicators on waste* and *5 indicators on coastal and sea water*. It removed the indicators *on waste recycling capacities* and *waste disposal by specific waste stream*, because the aspects of these indicators were reflected in the descriptions of other indicators from the list. The indicator on *total transboundary movements of waste* was removed due to the difficulties in data collection. At the proposal by Belarus, solid waste was included. Changes occurred mainly in the sections on brief description, units of measurements, requirements to monitoring and data collection,

and on difficulties and limitations. The *indicators on waste disposal* and *waste disposal by specific waste stream* were combined into one *indicator on waste disposal*.

(b) With regard to *coastal and marine water indicators*, most amendments were made in the sections on underlying definitions and concepts, and on requirements to monitoring and data collection.

Discussion

18. The presentation was followed by the discussion, as follows:

- Mr. Petru COCIRTA referred to the section on references to international databases in the description of waste indicators 1 and 3. He expressed the opinion that the provided information reflected the requirements to indicators instead of references to databases. He recommended to provide more details on international databases.
- Mr. Mikhail KOKINE recommended to make compatible the definitions used in the descriptions of waste indicators with those in the waste questionnaire of the UN Statistics Division. The latter were harmonized with the definitions of Eurostat and OECD. References to international databases had to be completed as well.

19. Ms. Irina ATAMURADOVA presented the **Working group 3** results. She informed the participants that:

- (a) The group worked with indicators related to 3 topics: *ozone depleting substances*, *climate change* and *energy*. During the group's work each indicator was assigned with a rank;
- (b) The group agreed to remove the word "*sale*" from the title of the indicator on *sale/consumption of ozone depleting substances* due to the fact that the sale of ozone depleting substances was not a current practice in EECCA countries. The group decided to remove the references to international databases;
- (c) Amendments were made in the description of hydrometeorological indicators according to remarks of hydrometeorological experts from the group;
- (d) The group agreed to change the title of the indicator CC8b from "*Forest growth*" to "*Forest area*". Also, it was agreed to remove the formula (used by FAO) presented in the section of measurement methods for forest areas;
- (e) The group proposed to remove the indicator CC9a on *Growth season length*, as for the Russian Federation, for example, which is a large country with many latitudes, it was difficult to collect data on this indicator. Moreover, the group raised the problem of comparability of this indicator among different countries;
- (f) With regard to the energy-related indicators, despite the fact that the group experts doubted the application of *nuclear waste indicator* in the nearest future, it was decided to keep the indicator.

Discussion

20. The presentation was followed by the discussion, as follows:

- Mr. Timur NAZAROV, Tajikistan referred to the underlying definitions and concepts section, which comprised different types of information.
- Mr. Yurik POGOSYAN, Armenia, proposed to remove the indicators on *growth season length* and *nuclear waste* due to existing difficulties with data collection.
- Ms. Irina ATAMURADOVA commented on definitions and concepts section. She underlined their importance towards the understanding of indicators.
- Mr. Guennady TISHCHIKOV mentioned that each document might have its specifics. These concerned, in particular, the section on environmental policy relevance.
- Mr. Petru COCIRTA proposed to add qualitative characteristics of nuclear waste.
- Mr. Alexei ANDREEV, Republic of Moldova stated that sections on underlying definitions and concepts and measurement methods were placed in the right order. Also, he mentioned that the policy relevance had to be provided later. That was due to the fact that between experts and decision-makers there was a gap.
- Mr. Mikhail KOKINE proposed to consult the UNCSD publication of *Guidelines and Methodologies on Sustainable Development Indicators* to clarify what the underlying definition and concepts section should include throughout the guidelines.

21. Mr. Alexandre SHEKHOVTSOV presented the results of the **Working group 1** work. He informed the plenary session that the group received written remarks from Mr. COCIRTA, Mrs. RYZHYKOVA (Belarus) and Mr. FILATOV (Republic of Moldova). The group concentrated mostly on the components of the methodological description of indicators. With regard to international targets, the group added limit values. Also, amendments were made in the sections on requirements to monitoring and data collection and on the list of international organizations.

Discussion

22. The presentation was followed by the discussion, as follows:

- Ms. Meri BROLADZE referred to the replacement of economic sectors with economic activities. She stated that in the modern methodology the concept on economic activities was applied, and she recommended to use this concept in the guidelines.
- Ms. Liubov CHERNYSHEVSKAYA, Uzbekistan stated that in the national accounting systems, sectors were divided on commercial, non-commercial and households. That is why the use of

economic sector term was not correct. She advised to use the term key directions or key sections of activities.

- The representatives from Belarus mentioned that the term proposed by Ms. Chernyshevskaya was obsolete. Nevertheless, it would reflect correctly the meaning of the discussed issue.
- Mr. Mikhail KOKINE drew the attention of group moderator to the differences between the descriptions of purpose and underlying definitions and concepts sections within this document and the description of similar sections of other documents. He referred also to the questionnaire of the UN Statistics Division, where, for instance, data on sulphur dioxide emissions was collected per energy activities, industrial processes, agriculture etc. The questionnaire on waste provides a clear reference to sector categories such as: agriculture, forestry, industrial activities etc.
- Mr. Ulrich WIELAND recommended to use ISIC codes (used in the questionnaire of UN Statistics Division) for reporting on environmental indicators.
- Mr. Mikhail KOKINE informed the participants that according to Reporting Guidelines for the Convention on Long-range Transboundary Air Pollution economic activity categories were used (power production, fuel burning, industrial processes, transport, and others).
- The participants agreed to use both economic activities and economic sectors.
- Mr. Dzhumshid DZHANGIROV proposed that indicators APE10a and APE10b should be combined to come back to the initial EEA indicator APE10, and that indicators WQ2e and WQ2f should be deleted as these were neither present in the initial EEA indicator list nor specific to EECCA countries. He also proposed that all indicator descriptions should recommend the periodicity of and public authorities responsible for, data collection, and that definitions and measurement methods should be harmonized with those in relevant international documents or, in the absence of such, with existing EECCA regulatory instruments.

23. Mr. Piotr GORBUNENKO presented the outcome of the **Working group 4** work. The discussions of the group focused mainly on the *biodiversity-related indicators*. The group proposed to use the EEA classification for forests instead of the UNECE/FAO classification. The terminology was brought in line with the international terminology of IUCN. The group decided to renounce from using the concept of biogeographical regions, while focusing on national and lower levels. He informed the participants that no major changes occurred in the description of *land resources and soil-related indicators*. Amendments were made in the titles of indicators and sections on purpose and on underlying definitions and concepts.

Discussion

24. The presentation was followed by the discussion, as follows:

- Mr. Merab SHARABIDZE drew the attention of participants that in the existing terminology there was no concept of forest species' richness. He mentioned that the composition of forest species was a well-known term instead.
- Mr. Piotr GORBUNENKO explained that the mentioned indicator was placed in the biodiversity section and not in the forest resources section. That is why, in this particular case, the species approach was applied instead of industrial approach to reflect the ecosystems' functions as well as their role in biodiversity conservation.
- Mr. Mikhail KOKINE referred to the proposal by the group to renounce from using the UN classifications (i.e. FAO and the UNECE Timber Committee). He mentioned that these organisations were collecting data on diversity of trees in forests throughout UNECE region.

IV. FOLLOW-UP AND CLOSURE

25. Mr. Alexandre DUMNOV offered to help in editing the Russian version of the guidelines.
26. Mr. Mikhail KOKINE welcomed this initiative as the secretariat had a limited capacity to edit the draft guidelines in Russian. The document prepared by the Workshop will be issued as official UNECE document for discussion by the Working Group on Environmental Monitoring and Assessment at its 5th session. He promised to send the electronic version of the official document to the workshop participants for comments. The Working Group will have to dedicate, possibly, one day for the discussion of the draft guidelines. After the session, the guidelines will be submitted to the UNECE Committee on Environmental Policy for adoption. After its adoption, the final version of the guidelines will be published and sent to EECCA countries and other UNECE Member States.
27. All Workshop participants received compact discs with presentations prepared in Power Point by international experts and group moderators, the draft guidelines with all amendments made during the Workshop, EEA and UNSD questionnaires, FAO Forestry definitions, UN Transport glossary, CSD indicators, WHO indicators and the EEA core indicators.
28. Mr. Victor COTRUTA thanked the group moderators and workshop participants for productive work and contributions during discussions.
29. The participants thanked REC Moldova for the assistance provided before and during the workshop and for the warm hospitality offered.