

# WORKING GROUP ON ENVIRONMENTAL MONITORING AND ASSESSMENT

**Fifteenth session  
Geneva, 6-7 November 2014**

## **Item 4 (a) of the provisional agenda**

Submitted by REPUBLIC OF SERBIA<sup>1</sup>

*Members of the Working Group, experts from national statistical agencies and other central and subnational authorities, as well as representatives of major groups, are invited to briefly report on improvements and changes in support of Shared Environmental Information System (SEIS) development related to recently accomplished or ongoing actions initiated in their countries, agencies and organizations, as follows:*

### **A. Modernization and upgrading of national monitoring networks**

1. Please report on your country's major modernization or upgrade actions of national monitoring networks since October 2013 for:

(a) Air:

- New parameters added for measurement (e.g. PM<sub>2,5</sub>, As, Cd, Ni, PAHs, etc.);
- Implementation of internationally recognized reference sampling and measurement methods, if not done before;

SEPA Successfully completed the procedure for accreditation according to ISO 17025 for PM<sub>10</sub> and heavy metals in PM<sub>10</sub>. Methods for gravimetric determination PM<sub>10</sub>, EN 12341, and heavy metals in PM<sub>10</sub>, EN 14902, have been accredited.

(b) Water:

- New parameters added for measurement;

PCBs ( PCB-28, PCB-52, PCB-101, PCB-118, PCB-138, PCB-153, PCB-180, PCB-194) in sediment samples

Metals in Sediment samples: As, Al, B, Cu, Cr, Cd, Co, Fe, Mn, Ni, Pb, Zn

- Implementation of internationally recognized reference sampling and measurement (chemical analysis) methods, if not done before;

1. EPA 8270D:2007 - SEMIVOLATILE ORGANIC COMPOUNDS BY GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)

2. EPA 6020A:2008 - INDUCTIVELY COUPLED PLASMA-MASS SPECTROMETRY

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<sup>1</sup> Prepared by [Tihomir Popovic, Serbian Environmental Protection Agency; Milijana Ceranic, Statistical Office of the Republic of Serbia].

(c) Soil:

- New parameters added for measurement under diffuse soil contamination monitoring;

Pesticides:

a-BHC, b-BHC, g-BHC(Lindan),Heksachlor-1,3-butadiene, Pentachlor-benzen, Heksachlor-benzen, Heptachlor, Aldrin, Isodrin; Heptachlor-epoxide (IsomerB), Endrin, p,p'-DDE, Dieldrin, p,p'-DDD, p,p'-DDT, o,p'-DDT; Endosulfan  $\alpha$ ; Endosulfan  $\beta$ ; Chlordan (cis+trans); Methoxychlor;  
Atrazine, Atrazine-desethyl, Atrazine-desisopropyl; Simazin; Propazin; Terbutylazine; Terbutylazine-desethyl; Trbutryne; Prometryne;  
Chlorfenvinfos; Chlorpyrifos;  
Alachlor; Acetochlor; Metolachlor; Diuron; Isoproturon; Linuron; Trifluralin;  
para-terc-Oktylphenol para-Nonylphenol; Pentachlorphenol

PAH:

Fluoranthene; Benzo(b)fluoranthene; Benzo(k)fluoranthene;  
Benzo(g,h,i)perylene; Benzo(a)pyrene; Benz(a)anthracene; Anthracene; Acenaphthene;  
Acenaphthylene, Phenantrene; Pyrene; Chrysene; Indeno(1,2,3-c,d)pyrene,  
Dibenz(a,h)anthracene, Fluoren; Naphthalene

PCBs:

PCB-28, PCB-52, PCB-101, PCB-118, PCB-138, PCB-153, PCB-180, PCB-194

Metals in Soil samples:

As, Cu, Cr, Cd, Fe, Mn, Ni, Pb, Zn

- Implementation of internationally recognized reference sampling and measurement methods for diffuse soil contamination monitoring, if not done before;

-EPA 8270D:2007 - SEMIVOLATILE ORGANIC COMPOUNDS BY GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)

-EPA 7000B:2007 and EPA 7010:2007

-EPA METHOD 3545A - PRESSURIZED FLUID EXTRACTION (PFE) (ASE-350 Accelerated Solvent Extractor)

- Other relevant issues;

SEPA prepare and publish yearly soil state report on the status of soil in a special publication that gives a comprehensive overview of pressures on soil and land use changes in the territory of the Republic of Serbia.

SEPA participates in the project „Designation of sensitive areas and vulnerable zones according to the EU Nitrate and Urban Wastewater Directives“.

## **B. Development of monitoring of biodiversity**

## **C. Development or improvement of inventories**

2. Please report on new, major developments or improvements in your country's national inventories since October 2013:

- Developments in collection and computerized storage of data (application of new software);

SEPA constantly improve and expanding the software for data submission for the National Register of Pollution Sources.

Now, SEPA work on development of data verification and reporting modules.

Beside this, in the frame of the ongoing project “Waste Flow Monitoring in Serbia” the support for establishing efficient and effective waste flow and management monitoring and reporting system in Serbia within Serbian Agency for Environmental Protection (SEPA). The main project outputs are:

- Establishment of a waste flow monitoring and reporting information system in order to improve monitoring of the waste flow and movement of each shipment of waste in Serbia, both hazardous and non-hazardous.
- Development of Geographic Information System (GIS) for a newly developed waste flow monitoring system and integration with existing environmental reporting system in Serbia within established Environmental Management Center (EMC).

In technical and security issues, SEPA now store collected data on 2 RAID servers and 1 data storage with data backup from previous 30 days, which is considered enough good.

- Development of on-line databases for public access to processed data, especially through interactive map-based visualizations;

In the frame of public access to processed data, SEPA work on developing GIS module for data visualization and public accession of data stored in databases of National Register of Pollution Sources.

- Other relevant issues;

#### CLRTAP and GHG Inventories

- 1 Equalization of data sources for these two inventories. The aim is that the activity data be maximum equalized for all categories contained in both inventories – e.g. Energy sector.
- 2 Development of National emission factors for fuels used in energy and industry sectors in Serbia for both inventories.
- 3 Transfer from TIER 1 to TIER 3 methodology for the energy sector.
- 4 Transfer from TIER 1 to TIER 2 methodology for livestock
- 5 Development of the Information System for application of the COPERT 4 model in calculating air pollutants and Greenhouse gas emissions from road transport

#### **D. Improvements to data quality assurance and control, as well as databases management**

- (a) Developments in data quality assurance and control:

3 Please report on major developments in in the field of data quality assurance and control since October 2013:

The greatest progress has been made in introducing poultry and pigs farms as PRTR facilities. PRTR register includes 277 facilities, of which 91 are intensive livestock production.

For operators on farms SEPA prepare a short manual for the calculation of emissions of air pollutants by using CLRTAP and GHG methodology and corresponding software.

Every farm which didn't fill their obligations in a good way, was invited to separate meeting in SEPA premises and NRIZ administrators help them to fulfill their reports.

**SORS** (Statistical Office of the Republic of Serbia):

- Pilot survey entitled Waste from Construction and Service sections (F-S by NACE Rev 2.), as a part of - IPA 2011 MB project has finished in March 2014 and all required deliverables was submitted to Eurostat.
  - Reporting waste statistics (generated and treated waste) from sections, B-S by NACE via eDAMIS to Eurostat, for reference 2012 according to Waste Statistics Regulation (2150/2002 EC).
  - Quality report (for referent data, 2012) was submitted to Eurostat, according to Commission Regulation 1445/2005/EC
  - Within the IPA 2011 Data projects, the main objectives for Water statistic project is statistical capacity building in order to establish and sustainable maintain both availability and quality of national water statistics by SORS, according to the breakdowns in the OECD/Eurostat Joint Questionnaire on Inland Waters.
  - Established survey of Total Balance of Inland Water database (fossil fuels consumption) from 2010 to 2012.
  - Electronic input of data (online questionnaires – Web application).
- Introduction of new procedures, if any, for collection of data that were assessed as insufficient;

**CLRTAP inventory**

Due to change of methodology from EMEP/EEA 2009 to EMEP/EEA 2013, the preparation of new software for data collection and calculation is in the final stage. Software (the range of Excel files with specific purposes) includes the automatic filling of the official tables, determination of key categories with the calculation of share, diagrams and tables creation for IIR.

**E. Improvements in institutional and regulatory mechanisms and technical solutions for data exchange and on-line sharing**

4 Please report on changes since October 2013 to legal and regulatory basis, (elaboration of new laws, by-laws, other regulations) for improving data collection, processing and sharing mechanisms

5 Please report on changes since October 2013 to institutional arrangements adopted in your country for data exchange and sharing, indicating the designated institutions for coordination of the different monitoring networks, data collection, processing and sharing. Please inform how these changes contributed to establishing a more integrated system of monitoring and to establishing a regular data flow.

*Please provide concise answers to the questions; submit in English and, if possible, Russian, using font 12, Times New Roman, single line-spacing.  
Please submit to the UNECE secretariat ([WGEMASec@unece.org](mailto:WGEMASec@unece.org)) by 6 October 2014 at the latest.*