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Implementation of recommendations on monitoring and information management from country environmental performance reviews**Azerbaijan*****Note by the secretariat***Summary*

The paper presents the recommendations on environmental monitoring and information management to Azerbaijan that the Committee on Environmental Policy approved at its annual session held in Geneva on 20 October 2003, and describes progress made by the country since that time. Preliminary results of the ongoing second Environmental Performance Review of Azerbaijan were used for this analysis.

The Working Group is expected to review progress made by Azerbaijan in the implementation of the 2003 recommendations and to provide the country delegation with possible guidance on how to improve performance to this end.

* Late submission due to late receipt of document.

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Recommendations of the first environmental performance review of Azerbaijan

Recommendation 3.1:

The Ministry of Ecology and Natural Resources should consolidate further the role of its National Department of Environmental Monitoring as lead environmental monitoring agency responsible for core monitoring activities and coordination with all other administrations, research institutes, regional environmental centres and NGOs, collecting and processing environmental data. A merger of the Caspian Complex Environmental Monitoring Department and the National Department for Environmental Monitoring (NDEM), and the transfer of hydrometeorological laboratories to NDEM could be considered, among other measures.

Recommendation 3.2:

(a) The Cabinet of Ministers should establish an institutional structure for inter-ministerial cooperation and coordination on environmental monitoring and information with the Ministry of Ecology and Natural Resources having the leading role.

(b) The development of a State system of integrated environmental monitoring and the preparation of a regular governmental report on the state and the protection of the environment should be core responsibilities of this structure (commission), which should be supported by a network of experts responsible for specific monitoring and information activities

Recommendation 3.3:

(a) The Ministry of Ecology and Natural Resources, when finalizing the State programme for strengthening environmental monitoring for submission to the Cabinet of Ministers, should include a detailed assessment (including cost assessment) of the investment requirements in basic environmental monitoring infrastructure, in particular in raw data collection, analytical and processing capacities, and equipment.

(b) The programme should also establish a clear perspective of extending monitoring activities, step-by-step, to soil, waste, biodiversity, and chemicals in ecosystems and foodstuffs to ensure integrated data collection covering quality, quantity, biodiversity and ecosystem aspects from the outset.

Recommendation 3.4:

The Ministry of Ecology and Natural Resources should draft legislation making polluting enterprises responsible for monitoring their emissions and waste flows. It should also provide companies with guidance and incentives for voluntary reporting on their environmental performance.

Recommendation 3.5:

The Ministry of Ecology and Natural Resources, the State Statistical Committee, the Ministry of Health and the State Committee of Amelioration and Water Management should make environmental data, including environmental health data, collected with public funds freely available. They should make every effort to raise external funds, if necessary, to produce compact, easy-to-read products such as booklets presenting key environmental data, indicator reports and thematic leaflets or brochures, and to make them available on the Internet.

I. Environmental monitoring

A. Ambient quality monitoring

1. The National Department of Environmental Monitoring (NDEM), the National Hydrometeorological Department (Hydromet), the Caspian Complex Monitoring Administration and the Geological Exploration Service under the Ministry of Ecology and Natural Resources (MENR) operate monitoring networks on air, water and soil quality, background radioactivity and biodiversity.

1. Air-quality monitoring

2. There has been no change in the air-quality monitoring network over the last 10 years. 26 air-quality monitoring stations continue operating in eight cities: Baku, Ganja, Sumgayit, Mingechevir, Ali Bayramly, Lenkeran, Sheky and Nakhchivan. The NDEM Central Analytical Laboratory analyzes air samples from 9 monitoring stations in Baku. Seven regional analytical laboratories of Hydrometeorological Service analyze air samples taken at 17 monitoring stations in other cities.

3. Eighteen parameters are measured in total in the country. No change in the number of measured parameters has taken place since 2003. Air concentrations of a number of air pollutants identified by the international community as most harmful to human health and the environment – ground-level ozone (O₃), fine particulates (PM_{2.5} and PM₁₀), volatile organic compounds (except Formaldehyde), heavy metals (except Hg and Pb) and persistent organic pollutants – are not measured in Azerbaijan.

4. Sampling and analytical methods follow requirements of the 1989 and 1995 guidebooks and have never been reviewed or revised. Samplings continue to be taken manually following the so called incomplete programme: samples are taken three times a day and not four as required by current monitoring regulations. The low frequency of measurements and the absence of automated monitors do not allow registering accidental or intentional short-time emissions into the air by the polluters.

5. Overall monitoring results demonstrate continuing exceedences of air pollution levels against national air-quality standards (maximum allowable concentrations (MAC)) by dust, CO and NO_x in Baku and other cities (see chapter 4).

6. In 2010 the Cabinet of Ministers earmarked 5 million manats to install 5 automated monitoring stations in Baku. These stations, to be operational in early 2011, will monitor O₃, PM_{2.5} and PM₁₀, among other parameters. NDEM is expecting that further funds are upcoming to install also 2 automated monitoring stations in Sumgayit.

7. The discussions are underway with Norway to help establishing a background and transboundary station on the boarder with the Russian Federation.

2. Surface inland water-quality monitoring

8. Surface water quality is measured in 50 observation points in 42 water bodies (27 rivers, 4 water reservoirs, 1 port, and 10 lakes) in Azerbaijan. Water samples are taken downstream and upstream of wastewater discharges. Measurements cover basic ions, gases, nutrients, 8 specific pollutants (oil and oil products, phenols, DDT etc), 16 heavy metals and hydrological and physical conditions. There has been no change in measured parameters since 2003. Although hydrobiological observations in surface water are required by the national monitoring rules (Cabinet of Ministers' decree No.90 of 1 July 2004), they are not implemented in Azerbaijan. NEMD plans to start hydrobiological measurements in one lake in 2010.

9. Since 2005 NDEM has been taking water samples in transboundary segments of the Rivers Kura and Araz near the border with Georgia. 3 times a week water samples are checked against the level of pollution by oil, oil products, phenols, pesticides and some other pollutants. One a month, samples are analyzed to trace the presence of heavy metals in water. The water analysis is conducted by two modern analytical laboratories established in the Gazakh (River Kura) and Beilagan (River Araz) Districts.

10. Azerbaijan cooperates with Georgia on monitoring and assessment of water quality in the Kura River.

11. The Ministry of Health, through its Centre for Epidemiology and Hygiene, is monitoring surface waters used for abstraction of drinking water supply and for recreational purposes.

12. In 2004-2005, under a NATO/OSCE Kura-Araz watershed project, surveys were conducted in the Kura River Delta. Water samples were taken on a monthly basis at 35 points to monitor heavy metals and general characteristics. During an extension of the project also radionuclides and POPs were monitored. In 2005, IAEA conducted a radiological survey of the Kura and Araz rivers in Azerbaijan.

3. Monitoring in the Caspian Sea

13. The Caspian Complex Monitoring Administration monitors the 955 km long shore of Azerbaijan at 341 monitoring points, both run-offs entering the Caspian Sea (310 industries, wastewater treatment plants, rivers) and 31 industrial installations (e.g. platforms) functioning at sea. During bathing seasons it monitors bathing waters at the beaches jointly with relevant institutions of the Ministries of Health and of Emergency Situations. During compliance inspections NDEM monitors the same on-shore pollution sources as do the Caspian Complex Monitoring Administration. There is no coordination of these monitoring activities between the two entities of the same Ministry. Comparisons of sample analysis results are taking place on an ad-hoc basis.

14. Four marine expeditions took place during 2008-2009, covering all national sectors of the participating countries (except Iran) in the Caspian Environmental Programme. The cruises were carried out with participation of national experts. Their purpose was to assist the countries in the development of a regional water quality monitoring plan and to assess the pollution of the Caspian Sea, focusing upon areas of pollution concern. High concentrations of oil products, phenols and arsenic were found in the Baku bay and in the coastal area of Sumgait. In the area of the Shrivand sewage canal, Kura River and the Baku bay, high rates of chromium, copper and other metals concentration were observed in the bottom sediments. In the Baku bay, the high level of contamination of the sediments with benzo(a)pyrene was identified. High concentrations of chlorinated organic pesticides and DDT were observed in bottom sediments of Kura-Araz alluvium, despite the global DDT ban.

15. Azerbaijan actively participated in the Transboundary Diagnostic Analysis (TDA) of the Caspian Sea developed in 2007 (the first one was done in 2002). TDA was a scientific and technical assessment, through which the water-related environmental problems of the Caspian Sea region were identified and quantified, their causes analyzed and their impacts, both environmental and economic, assessed. The TDA provided a technical basis for the development of National Caspian Action Plans and a Strategic Action Programme. The TDA 2007 called upon the activation of an integrated monitoring programme for fisheries, pollution and oceanography, to better assess the status of marine biodiversity in the Caspian Sea. Azerbaijan is making some steps in this direction.

4. Groundwater monitoring

16. Over the period from 2004 to 2010 the Geological Exploration Service decreased the number of boreholes in its stationary monitoring network from some 800 to some 650. Groundwater levels, temperature and flow discharge are generally measured 3 times a month while chemical water quality in the monitored aquifers is measured one a year. The number and types of parameters measured have not changed since the 1st EPR.

5. Soil-quality monitoring

17. NDEM continues regularly measuring soil quality parameters in different districts and industrial sites. In Baku, Ganja, Mingechevir, Sumgayit and Shirvan the soil pollution by 10 heavy metals is monitored. In the Absheron peninsula and the cities of Shirvan, Salyan and Syasan soil pollution by oil and oil products is monitored. Twice a year pollution of agricultural lands by chlorine organic and phosphor organic substances, pesticides and herbicides are measured in three Districts. Measurements are rotating between Districts so as to cover each of 21 Districts subject to soil monitoring every seven years. NDEM receives monthly statistical data on the pollution of soils by toxic and household waste in all cities and districts of Azerbaijan. In addition, it collects data on soil pollution by atmospheric precipitation at 21 observation points.

6. Radioactivity

18. In 2009 NDEM increased by one the total number of stations (42) measuring the level of background radiation in Azerbaijan. In addition, in 2009, under a technical cooperation agreement with the IAEA, Azerbaijan established an automated system to monitor background radioactivity in border areas. Every 30 minutes 6 observation points reports data to the NDEM and the Emergencies Management Centre of the Ministry of Emergency Situations. The network of stations (11) measuring the radioactivity of atmospheric aerosols remains unchanged.

B. Analytical laboratories

19. The NDEM central analytical laboratory (Centre for Environmental Pollution Monitoring) consists of 7 analytical laboratories in Baku and 2 in Districts (Gazakx and Beilagan). From the 7 Baku laboratories 5 (air, precipitation, water, soils and measurement tools) have been accredited. The accreditation of the other 2 (radioactivity and microbiology) is pending. Laboratory equipment is generally renewed with the support from international projects. A once time contribution amounting to 260,000 manats was provided from the State budget for strengthening NDEM laboratories in 2005. In 2010 NDEM expected to receive funds from the State budget to acquire a mobile analytical laboratory.

20. Since the 1st EPR, in the framework of the Caspian Environment Program (CEP) and through international donor support the analytical laboratory of the Caspian Complex Monitoring Administration has received a substantial amount of analytical equipment and sampling facilities. This laboratory is accredited and the instruments are certified.

21. The Ministry of Health operates a network of 64 analytical laboratories at District centres of hygiene and epidemiology. Only few of these laboratories are accredited.

C. Monitoring of biodiversity, including forests

22. The last comprehensive forestry inventory was prepared in Azerbaijan in 1993. Since 2002 inventories have been launched in forestry management units, one-by-one. The resulting data is not published but stored in the State information and archive database on environmental protection and the use of natural resources. It is planned to complete this inventory in all 40 units by end 2010. The second cycle of forest inventory is expected to start in 2012. In 2011 MENR intends to organize a forest inventory expedition in national parks.

23. Since 2004 the Scientific and Research Fishery Institute under the MENR Department of Fisheries has renewed conducting annual marine expeditions in the Azerbaijan segment of the Caspian Sea. It studies the stocks of 4 sturgeon species, herrings and seals as well as forage reserves and hydrochemistry of the sea water. The academic Institute of Zoology conducts regular fish and forage reserve surveys in 2 water reservoirs in Azerbaijan. Based on the results of the expeditions of these 2 institutions, the Department of Fisheries sets annual fish catching quotas. Fish population data is not published but it is available upon request. The data demonstrate the trend of decreasing fish populations in both the Azerbaijan segment of the Caspian Sea and freshwater reservoirs.

24. In MENR, studies on biological diversity are also carried out by NEMD, the Department of Biological Diversity Protection and Specially Protected Nature Areas Development and the Caspian Integrated Ecological Monitoring Department. Administrations of protected areas monitor biodiversity situation in these areas and report monitoring data twice a year to MENR. These data collection and monitoring activities allows MENR, in particular, to regular update population data on 126 bird and 30 mammal species. It is cooperating with the World Wildlife Fund (WWF) Caucasus office on the creation of a database to assess and monitor biodiversity using indicators (see chapter .).

25. In the National Academy of Sciences various institutes conduct studies on the country's species and ecosystems. The Institute of Microbiology focuses on the distribution and applied use of microorganisms. The Institute of Botany studies the distribution and ecology of lower and higher plants, including description of new species of algae from the Caspian Sea. The Institute of Zoology studies animal species and species composition.

26. The private sector also contributes to monitoring and research on biodiversity in Azerbaijan. For example, British Petroleum (BP) monitors biodiversity both on- and off-shore (including populations of fish, birds and mammals).

II. Information management and reporting

A. Environmental publications and databases

27. NDEM publishes four regular bulletins with monitoring results on: (a) Air pollution and background radiation; (b) Pollution of surface water bodies; (c) Hydrochemical pollution of transboundary rivers Kura and Araz; and (d) Level of environmental pollution. These bulletins are circulated within the MENR and are submitted to the President's administration, the Cabinet of Ministers, Parliament, selected ministries, other public entities and municipal authorities. Monitoring data is uploaded on the MENR web site (www.eco.gov.az).

28. NDEM submits to MENR annually reports on results of its monitoring activities for air, surface waters, soils, radioactivity and biodiversity. These reports are not uploaded on Internet and are not available to the public. MENR prepares monthly and uploads on its

web site brief reviews of monitoring activities conducted by NDEM and other subordinated institutions.

29. NDEM receives on a regular basis monitoring data from other monitoring institutions in the country. Data are submitted according to a dedicated form approved by MENR. In addition, it receives for checking statistical data reported by enterprises on their emissions into the atmosphere, discharges into water bodies and the generation of hazardous waste. There is no evidence, however, that NDEM is linking various data flows to help studying cause-effect relationships and to develop an environmental database that is user friendly and accessible to all interested public authorities and the general public.

30. The Caspian Complex Monitoring Administration circulates a weekly bulletin with monitoring results among 14 public authorities. Its monthly monitoring bulletin and a summary of its annual report are uploaded on the MENR web site.

31. The Geological Exploration Service publishes a monthly bulletin on groundwater and submits an annual report on the results of its groundwater monitoring activities. It maintains a groundwater cadastre with 18 types of geo-referenced information on over 2,500 boreholes in the country. At the same time, there is no database on groundwater quality in Azerbaijan. There is no evidence that groundwater monitoring data is used in decision-making and that it is accessible to the public.

32. MENR continues to update its State information and archive database on environmental protection and the use of natural resources. The hydrometeorological and geological databases together with the environmental monitoring bulletins and monthly and annual reports of the main departments and regional environmental committees of the Ministry provide the basis for the database. Many data sets and information stored in the State information and archive database are not in the electronic form and are not easily accessible to the users including the general public.

33. The Centre for Epidemiology and Hygiene of the Ministry of Health manages a database with the results of monitoring air quality in residential areas and indoors, quality of bathing waters and waters used for drinking water supply, soil quality in residential areas, noise, vibration and other physical impacts, radiation exposure and food quality. This database is not accessible to external uses and the Center is not publishing monitoring data. The Centre has recently started developing a database that is expected to help assessing the impact of environmental pollution on human health. Data from NDEM on air, water and soil quality is being linked with morbidity data.

34. The Ministry of Health is not publishing reports on health and the environment in Azerbaijan. It regularly uploads on its web site (www.mednet.az), however, information on the quality of drinking and bathing waters, and on food poisoning cases in the country.

35. Azerbaijan is not publishing state-of-the-environment reports. This is contrary to the country's obligations towards the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Article 5.4) to which Azerbaijan accessed on 23 March 2000. MENR has not established a legal and institutional framework for producing regular environmental assessment reports recommended by the Guidelines on the Preparation of Governmental Reports on the State and Protection of the Environment and the Guidelines for the Preparation of Indicator-based Environment Assessment Reports in Eastern Europe, Caucasus and Central Asia, which were endorsed at the Kiev (2003) and Belgrade (2007) Ministerial Conferences "Environment for Europe", respectively.

36. In compliance with its legally-binding obligations, Azerbaijan prepared several communications to governing bodies of multilateral environmental agreements (MEAs). In 2010 Azerbaijan prepared a second communication to the United Nations Framework

Convention on Climate Change (UNFCCC). In 2006 it submitted its third report to the United Nations Convention to Combat Desertification in Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa (UNCCD). In 2010 the country reported on the status of its implementation of the Protocol on Water and Health. The same year it submitted to the Stockholm Convention on Persistent Organic Pollutants (POPs) a National Implementation Plan covering a basic inventory of POPs in Azerbaijan. In 2004 and 2010 Azerbaijan submitted national reports to the Convention of Biological Diversity (CBD). The reports include an inventory of ecosystems and species. Azerbaijan failed, however, to submit two mandatory national reports in 2006 and 2008. Azerbaijan did not submit a country report to the Food and Agricultural Organization (FAO) for the 2010 Forest Resources Assessment.

37. MENR is not uploading the reports to MEAs on its web site and the reports are not available to the general public.

B. Environmental statistics

38. The State Statistical Committee continues publishing an annual statistical yearbook on the environment (“Environment in Azerbaijan”). This trilingual (Azeri, English and Russian) publication in 150 copies contains statistical data on the population, land resources, forests, the protection and use of water resources, the protection of the atmosphere, waste, geological exploration and energy, environmental expenditures and international comparisons. The Committee is also publishing regular bulletins on hazardous waste and air emissions in Azerbaijan. Environmental statistics is regularly uploaded on the web site of the Committee (www.azstat.org). Core environmental data is also published annually in the Statistical Yearbook. In 2006 the Committee published results of the statistical survey of the impact of environmental pollution on human health.

39. The State Statistical Committee is applying, in a step-by-step, the UNECE Guidelines for the Application of Environmental Indicators in Eastern Europe, Caucasus and Central Asia. Six indicators from these Guidelines were introduced in mandatory statistical reporting in the country in 2009. The same year collection of data on medicinal waste and data reporting on hazardous waste according the classification of the Basel Convention on Transboundary Movements of Hazardous Waste were introduced. By 2011 the Committee plans to finalize a classification of environmental expenditures by individual sources of expenditure. Much remains to be done. For instance, there is insufficient data on industrial waste in Azerbaijan and the quality of the published data is questionable.

III. Access to information

40. MENR is making efforts to ensure that environmental information is accessible to the public. It compiled a list of institutions to be addressed for the environment-related information and it uploaded the list on its website. In addition to an Aarhus Information Centre opened within the Ministry in 2003, two similar centres were established in Ganja and Gazakh in 2007. All three centers host meetings covering various environmental topic. Schoolchildren, students, NGO representatives and community members benefit from access to Internet and environmental publications provided by the centres. MENR intends to open further centres in other parts of Azerbaijan, including Lankaran, Shaki, Ali Bayramli, Mingachevir, Guba and Nachchivan. MENR is regularly updating its web site (www.eco.gov.az). Its information is primarily in the national language but the English version of the site is slowly expanding.

41. MENR works with the media and NGOs and produce information leaflets for the general public, especially leaflets devoted to national parks and State nature reserves. It issues press releases and circulates these among journalists and NGOs. It also posts the press releases on the Ministry's web site. MENR issued some 20 posters designed to raise environmental awareness and distributed them to educational institutions, NGOs, companies and organizations.

42. In 2009 MENR published a book on environmental policy of Azerbaijan from 2003 to 2008. On the other side, some years ago it ceased to publish the *Priroda Azerbaijana* (Nature of Azerbaijan), its monthly magazine aimed at a wide audience. MENR plans to resume this publication from 2011.

43. It appears that sectoral ministries like the Ministries of Economic Development, Industry and Energy, Agriculture and Transport do not actively communicate to the general public environment-related data and information, which they collect or produce.

III. Legal and policy frameworks

44. The Cabinet of Ministers, by its resolution № 90 of 1 July 2004, approved a statute On Rules of Conducting Monitoring of the Environment and Natural Resources. It established the goals and basic requirements (frequency, number of observation points, etc.) for 12 types of monitoring, namely, for monitoring of: atmospheric air, atmospheric precipitation, water objects, land, mineral and raw material reserves, radioactivity, harmful physical impacts on the environment, waste, biological resources, protected areas, as well as sanitary and epidemiological monitoring, and monitoring of natural disasters.

45. As a follow up to the above resolution, a centre on environmental monitoring data was established in NDEM. The centre developed monitoring reporting forms that public institutions that are conducting environmental monitoring regularly complete and return to the centre. Although the resolution obliges the users of natural resources to report the results of their self-monitoring to the MENR, no reporting forms for enterprises have been developed and, hence, no enterprise self-monitoring reporting to environmental authorities is taking place in Azerbaijan. As a result, enterprise environmental monitoring remains practically non-existent in the country.

46. In 2007, the Minister of Ecology and Natural Resources by his decree No.610/u of 8 November 2007, approved a form for submission by regional departments of the MENR of information on environmental conditions. Accordingly, each department is submitting to the NDEM quarterly reports covering sources of air and water pollution and of waste generation in the region, quantitative and qualitative parameters of emissions, and state of land and biological resources.

47. NDEM prepared but has not published yet methodological guidelines on air, water and soil monitoring. There is no institutional structure or formal arrangements made in Azerbaijan to coordinate monitoring and environmental data collection activities run by various institutions. Intercalibration exercises between analytical laboratories of NEMD, Hydromet, the Caspian Complex Monitoring Administration, the Geological Exploration Service and the Ministry of Health are sporadic or non-existent at all.

48. The Plan for Implementation of Integrated Measures to Improve Environmental Conditions in the Azerbaijan Republic for 2006-2010, approved by the Decree of the President № 1697 of 28 September 2006, foresaw the improvement of air-quality monitoring in Baku. As a follow up, the procurement of the equipment is underway for 5 automated monitoring stations to be installed in the capital city. In accordance with other

measures from the Plan, NDEM monitors wastewater discharges and water quality in 10 lakes on the Absheron Peninsula.

49. The President's Decree No.2244 of 2007 on the Protection of Caspian Waters from Land-based Pollution Sources strengthened monitoring of run-offs entering the Caspian Sea from the Azerbaijan territory.
