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### Environmental performance reviews

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## Second Environmental Performance Review of Armenia: recommendations<sup>1</sup>

### Note by the secretariat

#### *Summary*

The document presents the recommendations of the second Environmental Performance Review of Armenia agreed upon by the Expert Group on Environmental Performance Reviews at its meeting conducted in a hybrid format in Tbilisi and by virtual means from 12 to 16 September 2022.

The Committee is invited to adopt the recommendations.

### Chapter 1: Legal, policy and institutional framework

#### Recommendation 1.1:

*The Government should:*

- (a) *Promote the inclusion of strong wording on the right to a safe, clean, healthy and sustainable environment in the drafting of the revised constitution to be put before the people of Armenia in a referendum;*
- (b) *Continue its efforts in the approximation of its environmental and climate change legislation further to the European Union-Armenia Comprehensive and Enhanced Partnership Agreement;*
- (c) *Prepare or complete legislation on climate change, chemicals, biosafety and biosecurity, and the determination of environmental harm;*
- (d) *Review and monitor the implementation of procedures for responding to comments made by natural or legal persons on draft legislation, to ensure that authorities provide an adequate explanation of how the comments are taken into account in the draft, or a sound justification for why the comments have not been taken into account;*
- (e) *Complete the regulatory framework for strategic environmental assessment, particularly through the swift adoption of the draft amended law on EIA and expertise and relevant secondary implementing legislation, and integrate the requirement for such assessment into sectoral laws and regulations;*
- (f) *Review the existing penalties on forest violations and consider further improvement of enforcement mechanisms.*

#### Recommendation 1.2:

*The Government should:*

- (a) *Ensure that policymakers have full access to the information needed for informed policymaking and they ensure proper consultation of authorities and civil society at an early stage;*

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<sup>1</sup> This document was not formally edited; it will undergo editing before being published.

- (b) *Require the sharing of information, anonymized if necessary, that is produced by inspection bodies and needed to enable informed policymaking by line ministries;*
- (c) *Prepare properly funded strategies on specially protected areas and biodiversity, chemicals and the environment as a whole;*
- (d) *Finalize a green economy strategy that addresses low-carbon development, circular economy and electromobility, while engaging all relevant authorities at an early stage, as well as strategies on water, forests and environmental education;*
- (e) *Commission a complete forest inventory and forest cadastre to improve the decision-making processes related to the forestry;*
- (f) *Strengthen analytical capacities to understand environmental challenges and how policies might tackle them, and introduce systematic processes for policymaking and associated monitoring and evaluation.*

Recommendation 1.3:

*The Government should:*

- (a) *Undertake an awareness-raising campaign on and promote the Sustainable Development Goals (SDGs) across the country;*
- (b) *Prepare a properly funded sustainable development strategy, integrate SDGs into sectoral plans and work programmes and monitor progress transparently;*
- (c) *Establish a system and procedures for ministries and agencies to upload their data directly to the Statistical Committee's data portal and encourage ministries and agencies to afford the Committee access to their administration databases, as far as confidentiality requirements allow.*

Recommendation 1.4:

*The Ministry of Environment should:*

- (a) *Review procedures allowing staff to undertake work for enterprises to avoid a perceived conflict of interest;*
- (b) *Complete work on its shared database to include permits and licences;*
- (c) *Carry out a comprehensive analysis on possible structural changes within the Ministry which would provide an institutional and holistic approach;*
- (d) *Consider how better to distinguish the forestry and nature conservation functions in forest management, and how to improve coordination between relevant authorities that have joint responsibility to manage them.*

## **Chapter 2: Regulatory and compliance assurance mechanisms**

Recommendation 2.1:

*The Government should amend the existing environmental legislation and adopt implementing regulations for:*

- (a) *The issuance of integrated permits based on the application of the best available technologies by regulated entities;*
- (b) *Opportunities for public participation in the pre-application process by respective applicants.*

Recommendation 2.2:

*The Government should submit amendments to the Law on Standardization to include incentives for integrating environmental aspects in product development based on the application of relevant national standards.*

Recommendation 2.3:

*The Environmental Protection and Mining Inspection Body should:*

- (a) *Develop and adopt an environmental enforcement policy document defining priorities for compliance monitoring, a guide for inspectors to apply relevant sanctions as measures to bring offenders into compliance and improve environmental aspects in certain areas of environmental protection and use of natural resources;*

- (b) *Update the content of annual performance reports to provide more detailed information and data on inspection and enforcement activity in different areas of environmental protection and use of natural resources; in particular, a more detailed breakdown in order to assess different types of detected environmental violations and taken enforcement measures.*

Recommendation 2.4:

*The Government should update the Code on Administrative Offences with the application of administrative sanctions for environmental non-compliance to legal entities and amounts of administrative fines differentiated for offenders depending on their income and/or scale of activity.*

Recommendation 2.5:

*The Government should encourage companies and organizations to share data and information, including on the sustainability reporting, with the Statistical Committee, which would integrate them into the National Information Portal on the SDGs.*

### **Chapter 3: Greening the economy and financing environmental protection**

Recommendation 3.1:

*The Government should gradually phase-out fossil fuel and energy subsidies, and consider to eliminate the differences in excise duties of gasoline versus diesel, while continuing to take measures to protect vulnerable households.*

Recommendation 3.2:

*The Government should continue its efforts to attract private sector investments and request that firms benefiting from favourable taxation take necessary measures to minimize the environmental impact of their activities.*

Recommendation 3.3:

*The Government should ensure that national guidelines for green public procurement are developed and disseminated across all public authorities, and their implementation monitored.*

Recommendation 3.4

*The Government should develop and implement secondary legislation for PPPs.*

### **Chapter 4: Environmental monitoring and information**

Recommendation 4.1:

*The Government should:*

- (a) *Ensure the further development of the Shared Environmental Information System;*
- (b) *Ensure the Development of Multi-Hazard Early Warning and Forecasting Systems (weather, climate, water and related environmental hazards);*
- (c) *Enforce integrated environmental monitoring and connect it to an integrated permitting system and other relevant policy- and decision-making processes to ensure impactful monitoring that is closely linked to policy-making cycles and used for identifying and solving emerging issues and catering to domestic needs for data and analysis and international reporting;*
- (d) *Secure adequate human and financial resources for integrated environmental monitoring;*
- (e) *Modernise and expand monitoring networks, including the availability of mobile stations, automating and digitizing data collection, quality control and transfer to establish a continuous monitoring and real-time data collection system;*
- (f) *Establish a comprehensive State monitoring system for biodiversity and improve monitoring of air, soil, and water;*
- (g) *Promote a comprehensive and analytical approach to water monitoring, including of wastewater, and the continuous monitoring of the quality of drinking water at rural community sites, to inform effective water governance;*

- (h) *Forster structured institutional cooperation with scientific institutions and NGOs on environmental monitoring and promote its translation into public information and policy action in an effective and efficient manner.*

Recommendation 4.2:

*The Government should:*

- (a) *Improve the laboratory capacity of the HMC and EPMI, including automation of sampling and ensuring mobile sampling capacity; and support regional monitoring;*
- (b) *Enhance more structured cooperation between the laboratories of EPMI, the Ministries of Environment and Health, scientific institutions, and others, including their connection to transparent reporting and accountability systems;*
- (c) *Promote accreditation of all analytical laboratories under concerned ministries and agencies with monitoring responsibilities;*
- (d) *Provide adequate human, financial and technical resources to facilitate the achievement of the national targets and the country's obligations under Multilateral Environmental Agreements (MEAs) and other international commitments.*

Recommendation 4.3:

*The Government should support the work of the Statistical Committee with additional human and technical resources to promote a coherent and integrated national statistical system, including the improvement of systemic measurement of the quality of inputs and processes.*

Recommendation 4.4:

*The Statistical Committee should:*

- (a) *Expand the production of accounts according to the System of Environmental Economic Accounting;*
- (b) *Promote the development of environmental SDG indicator methodologies and exchange of international experience in reporting on the environmental dimension of SDGs, and increase the number of environment-related SDGs made publicly available online;*
- (c) *Promote the comprehensiveness and availability of gender and environmental statistics.*
- (d) *Continue the production of United Nations Economic Commission for Europe (ECE) indicators according to the revised list, especially those related to waste, water and transport.*

Recommendation 4.5:

*The Government should:*

- (a) *Take necessary legislative, institutional and practical measures to improve integrated management and continuous modernisation and digitalisation of environmental information in line with SEIS principles and pillars, ensuring their interoperability with geospatial, statistical and other information systems and promoting cooperation on open data, including international sharing of data;*
- (b) *Encourage the establishment of a national pollutant release and transfer register and the development of implementation capacities;*
- (c) *Promote accurate and timely reporting of enterprises on their self-monitoring results, improve the availability of comprehensive information on SDG Target 12.6. and link data produced by enterprises to other monitoring and information systems;*
- (d) *Improve capacity for producing indicator-based national state of environment reports and facilitating their use in decision- and policy-making;*
- (e) *Put in place an effective mechanism for public engagement on collection, analysis and use of the environmental information, assessing and building on the experience of the Aarhus Centre and other civil society initiatives, and equipping it with necessary financial and human resources.*

## **Chapter 5: Access to information, public participation in decision-making and access to justice in environmental matters**

### Recommendation 5.1:

*The Government should:*

- (a) *Include in the budget resources to support the operations of the Yerevan Aarhus Centre and similar institutions, both in the capital and in the regions;*
- (b) *Implement appropriate legislative, institutional and technical measures to support the development of, and public access to, the digital environmental information system in accordance with the Recommendations on the more effective use of electronic information tools adopted by the Seventh session of the Meeting of the Parties to the Aarhus Convention.*

### Recommendation 5.2

*The Government should:*

- (a) *Ensure that environmental information is effectively disseminated by all authorities and that information provided on request is comprehensive and timely;*
- (b) *Provide training on access to environmental information, including the handling of environmental data, for authorities at the regional and local level to build their capacities and improve both active dissemination of environmental information and the provision of environmental information upon request.*

### Recommendation 5.3:

*The Government should develop revisions of the Law on EIA and Expertise through effective public participation in the preparation of the draft legislation, in line with the Aarhus Convention, ensuring that:*

- (a) *The Law itself sets out the main requirements concerning public participation and shifts the main responsibilities for organizing public participation procedure to the public authority which is competent to take a decision on the proposed activity, with the possibility of delegating certain functions to other bodies or persons if required;*
- (b) *Participation is guaranteed at the early stage of the EIA, when all options are open;*
- (c) *The possibility to participate is clearly extended to both the public concerned, including environmental NGOs and NGOs supporting affected communities and other affected or interested members of the public;*
- (d) *Timelines are made significantly longer for consulting and commenting on project-related documentation;*
- (e) *The form of participation is not linked exclusively to public hearings but in every case clearly includes the possibility of submitting written comments which should have the same standing as the comments received at hearings.*

### Recommendation 5.4:

*The Government should consider establishing legal and institutional framework to ensure effective public participation in decision-making with respect to genetically modified organisms.*

### Recommendation 5.5:

*The Ministry of Environment should:*

- (a) *Develop interpretative guidance to enable effective and inclusive public participation in decision-making on environmental matters in line with the Maastricht Recommendations on Public Participation in Decision-making and organize training thereon for various target groups (e.g., authorities responsible for environmental matters, developers and NGOs);*
- (b) *Introduce modalities in practice to ensure that public authorities provide for public participation at an early stage during the preparation of draft legislation and strategic documents relating to the environment, including the effective and timely notification of the public and reasonable timeframes for their participation.*

Recommendation 5.6:

*The Government should:*

- (a) *Revise the standing provisions of the 2016 Law on Non-Governmental Organizations and 2013 Code of Administrative Legal Proceedings to ensure compliance with article 9 of the Aarhus Convention;*
- (b) *Ensure through legislative provisions that standing for NGOs is not restricted to personal rights of individual members being affected;*
- (c) *Continue its efforts to raise awareness, the capacity and specialization of the judiciary to consider environmental cases.*

Recommendation 5.7:

*The Government, working with the office of the Ombudsman and Ministry of the Justice, should:*

- (a) *Examine the situation of environmental defenders, including relevant statistical information, to identify trends and develop a roadmap with legislative and practical measures aimed to protect environmental defenders;*
- (b) *Take appropriate measures to ensure the protection of environmental defenders experiencing or at imminent threat of penalization, persecution, or harassment;*
- (c) *Organize trainings for different target groups (e.g., authorities responsible for environmental matters, interior affairs, the judiciary, police and security providers, journalists, NGOs) aimed at ensuring the protection of environmental defenders.*

## **Chapter 6: Education for sustainable development**

Recommendation 6.1:

*The Government, in cooperation with relevant institutions, academia, business and NGOs, should:*

- (a) *Complete amending the 2001 Law on Environmental Education and Upbringing, including by explicitly addressing ESD in all relevant laws and by-laws;*
- (b) *Revitalise and update the Strategy for the Development of Environmental Education and Upbringing with new actions until 2030, including on ESD, and proceed with its implementation;*
- (c) *Establish a mechanism to ensure inter-institutional and multi-stakeholder coordination on ESD;*
- (d) *Establish monitoring and reporting tools to keep the implementation of ESD under regular review;*
- (e) *Consider forming partnerships on ESD with other countries to exchange materials, experience and good practices.*

Recommendation 6.2:

*The Government, in cooperation with relevant institutions, academia and NGOs, should:*

- (a) *Ensure that ESD is explicitly addressed in the new education standards, curricula, student assessment, teaching methodology and teachers education and training;*
- (b) *Include a compulsory subject on ecology, including project-based learning, in general education, adapting it to various levels of education;*
- (c) *Provide regular in-service training on ESD for teachers and educators.*

Recommendation 6.3:

*The Government should strengthen the science-policy interface on ESD, including by:*

- (a) *Commissioning research, innovation and development on ESD in the national context;*
- (b) *Establishing a platform for regular training of teachers based on new products and scientific research and innovation on ESD.*

Recommendation 6.4:

*The Government should:*

- (a) *Have a dedicated budget line on ESD in the state budget;*
- (b) *Seek additional sources of support, including from business and international community, to conduct ESD activities.*

Recommendation 6.5:

*The Government, in cooperation with relevant institutions, academia, business and NGOs, should:*

- (a) *Enhance its efforts to deliver on SDG 4 and SDG Targets 12.8 and 13.3 by 2030, including by replicating across the country the good practices piloted in the country;*
- (b) *Make targeted efforts to promote ESD and awareness, especially in the field of formal, non-formal and informal education on circular economy and waste management;*
- (c) *Enable regular training of civil servants to develop their capacities to mainstream environmental and sustainable development concerns into sectoral policies and activities.*

## **Chapter 7: Implementation of international agreements and commitments**

Recommendation 7.1:

*The Government should:*

- (a) *Clearly identify institutions responsible for data collection for different purposes (synergies between Conventions could also be applied in this context) and ensure that data are provided with comparable units of measurement;*
- (b) *Establish appropriate mechanisms for enabling those institutions and data providers to generate data;*
- (c) *Use the planned development of digitalization to support data collection under the different MEAs, including CITES.*

Recommendation 7.2:

*The Government should:*

- (a) *Identify mechanisms for providing sustainable capacities for the implementation of MEAs, especially those which do not directly benefit from dedicated funds;*
- (b) *Establish synergies between the MEAs and international commitments in the country;*
- (c) *Ensure sustainable resources to enable the implementation of practical and technical requirements of the MEAs and ensure that personnel is trained to manage the equipment.*

Recommendation 7.3:

*The Government should ensure that:*

- (a) *Regular and efficient mechanisms for coordination on environment-related issues are subject to international, regional or bilateral cooperation are in place;*
- (b) *The Ministry of Environment provide updated information on focal points of environment-related international agreements to the Ministry of Foreign Affairs and have an updated and publicly available database of focal points of all environment-related international agreements;*
- (c) *Competent authorities for any MEA are promptly designated and focal points are promptly nominated, including the focal point responsible for natural heritage;*
- (d) *Technical capacities to implement and report on MEAs are strengthened;*
- (e) *Focal points are properly prepared and receive the needed support for performing their implementation and monitoring functions;*
- (f) *Focal points comply with their duties, including sharing information and preparing and disseminating meeting reports.*

Recommendation 7.4:

*The Government should ensure that the Ministry of Environment has enough capacities to:*

- (a) *Coordinate the implementation of environmental agreements or commitments in which other relevant ministries and authorities of the country are involved;*
- (b) *Ensure that environmental awareness is spread in other ministries and agencies to effectively support the implementation of MEAs and commitments.*

Recommendation 7.5:

*The Government should comprehensively assess priority actions that are required and, based on the results, proceed with the preparatory work for accession to:*

- (a) *Protocol on PRTRs of the Aarhus Convention and the Amendment on public participation in decisions on the deliberate release into the environment and placing on the market of genetically modified organisms (GMOs);*
- (b) *Amended protocols to the LTRAP Convention: the Protocols on Heavy Metals, POPs and Gothenburg.*

Recommendation 7.6:

*The Government should comprehensively assess priority actions required for accession to Convention on the Protection and Use of Transboundary Watercourses and International Lakes and its Protocol on Water and Health.*

## **Chapter 8: Climate change**

Recommendation 8.1:

*The Government should:*

- (a) *Develop and adopt an overall legal framework and long-term low emission strategy on climate change;*
- (b) *Set a national GHG inventory system (including preparation on QA/QC plans) and GHG projections;*
- (c) *Establish a system on monitoring, reporting and verifying of adaptation and mitigation policies and measures at horizontal and vertical level by setting legal obligations on roles and responsibilities of different institutions on data and other forms of information exchange;*
- (d) *Adopt the amendments of the Law on Environmental impact assessment and expertise about inclusion of climate change consideration into EIA procedure.*

Recommendation 8.2

*The Government should:*

- (a) *Develop vulnerability studies on climate change impact on human health and other vulnerable sectors;*
- (b) *Adopt the national adaptation plans on water, agriculture, tourism, construction, forest and transport infrastructure sectors;*
- (c) *Adopt a methodology for estimating economic losses in the country, which would consider the existing and forecasted impacts of climate change on vulnerable sectors;*
- (d) *Develop and disseminate among local self-government bodies guidelines for elaboration of climate change adaptation plans for human settlements;*
- (e) *Ensure methodological assistance for local self-government bodies to plan and implement climate change adaptation measures in human settlements;*
- (f) *Foster the development and further implementation of regional climate change adaptation plans (Shirak and Tavush marzes as priority).*

## Chapter 9: Air protection

### Recommendation 9.1:

*The Government should:*

- (a) *Enhance the air quality monitoring network by introducing automatic monitoring stations monitoring particulates (PM<sub>2.5</sub> and PM<sub>10</sub>), SO<sub>2</sub>, and NO<sub>2</sub>, O<sub>3</sub>, CO and VOCs, which will allow real time reporting on air quality; including where necessary a mobile station monitoring PM<sub>2.5</sub> and PM<sub>10</sub> and ensuring sufficient background monitoring stations to be able to adequately monitor ground-level ozone;*
- (b) *Design an online, open access portal for real-time reporting on air pollution in parallel with new air quality monitoring network;*
- (c) *Support the air quality monitoring network via passive sampling campaigns.*

### Recommendation 9.2:

*The Government should:*

- (a) *Align national methodologies for calculation of air emissions to EMEP/EEA guidance to produce relevant, reliable and internationally comparable data on air emissions;*
- (b) *Ensure proper data flow among institutions involved in emissions calculation;*
- (c) *Develop capacities among polluters, inspection bodies, public and private laboratories to measure industrial emissions to get more realistic picture on industrial emissions.*

### Recommendation 9.3

*The Ministry of Environment should acquire at least one mobile PM<sub>10</sub>/ PM<sub>2.5</sub> measurement device to study the ratio between TSP and finer particulates, and share data with the Ministry of Health, to allow assessing impact of air pollution on health and report on SDG targets 3.9 and 11.6.*

### Recommendation 9.4:

*The Government should update the legal framework on air quality and approximate to key EU legislation on air protection.*

### Recommendation 9.5:

*The Government should:*

- (a) *Raise the role of state authorities as central actors in air quality management, defining their active role in air protection;*
- (b) *Elaborate specific policy documents developing air quality policy, ensuring sufficient funds and resources for effective implementation of measures*

### Recommendation 9.6:

*The Government should:*

- (a) *Consider introducing BATs across industrial processes, notably in the metal and cement production industries;*
- (b) *Review existing emission limit levels with a view to decreasing them;*
- (c) *Increase fees for exceeding emissions allowances so they correspond to the economic value of inflicted environmental damage.*

### Recommendation 9.7:

*The Government should transition to an air quality standard system that accurately reflects air quality and is based on the latest science and in line with international standards.*

## **Chapter 10: Water management**

### Recommendation 10.1:

*The Government should revise the existing strategic documents and, if necessary, consider the development and adoption of a comprehensive water management strategy.*

### Recommendation 10.2:

*The Ministry of Environment should:*

- (a) Take action to improve surface water quality and to increase its availability for drinking and other uses;*
- (b) Promote the protection of groundwaters (shallow and deep aquifers) as a strategic reserve for drinking water supply.*

### Recommendation 10.3:

*The Government should:*

- (a) Invest in wastewater infrastructure to improve and expand, in particular in rural areas, sewage networks, and to construct wastewater treatment plants appropriate for the characteristics of effluents;*
- (b) Introduce a more efficient permitting process supported by the assessment of water resources to define better abstraction and discharge limit values;*
- (c) Study solutions for water reuse, supported by the assurance of safety for public health and environment, as a way to reduce direct discharges and increase water availability for specific non-potable uses;*
- (d) Continue efforts to increase capacity building to ensure a more comprehensive compliance assessment.*

### Recommendation 10.4:

*The Government should continue to invest in water infrastructure and improve networks, treatment and disinfection to ensure the supply of safely managed drinking water in rural areas.*

## **Chapter 11: Waste and chemicals management**

### Recommendation 11.1:

*The Statistical Committee, in cooperation with the Ministry of Environment, the Ministry of Economy and the Ministry of Territorial Administration and Infrastructure, should revise the system of data collection on the generation, disposal and treatment of all waste types according to international waste classification, resulting in more accurate real volumes of waste flows.*

### Recommendation 11.2:

*The Government should:*

- (a) Set national and local (Marzes) target rates for the separate collection of municipal solid waste;*
- (b) Gradually introduce obligatory at source separate collection rates for municipal solid waste and similar waste collecting companies with adequate financial support;*
- (c) Promote the recycling of all types of waste with adequate legal, institutional and financial measures.*

### Recommendation 11.3:

*The Government should:*

- (a) Introduce legally binding and cost-efficient extended producer/importer responsibility schemes for most of the packaging waste types;*
- (b) Consider gradually extending the scheme to the most widespread and most polluting waste streams, especially for waste electrical and electronic equipment, used batteries and end-of-life vehicles.*

Recommendation 11.4:

*The Government should:*

- (a) *Strengthen its efforts towards construction of sanitary landfills based on the Waste System Strategy and Measures for 2021–2023;*
- (b) *Prepare a strategy and/or action plan on the closure and rehabilitation of existing municipal and illegal dumpsites.*

Recommendation 11.5:

*The Ministry of Environment in collaboration with the Ministry of Economy and Ministry of Health should prepare and submit for adoption a comprehensive law that regulates the chemicals related issues.*

## **Chapter 11: Biodiversity and protected areas**

Recommendation 12.1:

*The Ministry of Environment, in cooperation with the Ministry of Education, Science, Culture and Sport, and with the involvement of the National Academy of Sciences, Yerevan State University, scientific research institutions and environmental NGOs, should:*

- (a) *Identify the priority biodiversity monitoring and research programme topics into the draft Government Decision on defining the 2023–2027 priorities of science and technology development, at the latest by May 2023, as stipulated in the 2021–2026 Action Plan;*
- (b) *Establish and ensure the national biodiversity information system, utilizing modern techniques for digitalized data acquisition, storage, retrieval, processing and dataset harmonization, with the objective to gather, store and share results of biodiversity monitoring research programmes and projects; and provide access to this system for all stakeholders involved in biodiversity conservation initiatives.*
- (c) *Ensure the implementation of a long-term systematic State biodiversity monitoring and research programme as part of the State environmental monitoring, and mobilize adequate resources to ensure the continuation of biodiversity monitoring and research in the long run;*
- (d) *Ensure that the national forest inventory is carried out and mobilize adequate resources for long-term systematic research on forest ecosystems and habitats.*

Recommendation 12.2:

*The Ministry of Environment, in cooperation with the Ministry of Education, Science, Culture and Sport, and with the involvement of the National Academy of Sciences, Yerevan State University, scientific research institutions and environmental NGOs should:*

- (a) *Develop and operationalize cadastres of flora and fauna;*
- (b) *Carry out field inventories and research, both inside and outside SPNAs, and conduct scientific assessments on the conservation status of rare, threatened, and locally endemic flora, fungi and fauna species, plant communities, habitats and ecosystems;*
- (c) *Update the Red Book of Plants and the Red Book of Animals;*
- (d) *Draft a Red Book of ecosystems, habitats and plant communities of Armenia.*

Recommendation 12.3:

*The Government should:*

- (a) *Develop and adopt the National Biodiversity Strategy and Action Plan, possibly including the national wetland strategy and corresponding programme for wetlands conservation;*
- (b) *Develop and adopt national ecosystem, habitats and species conservation and restoration action plans and programmes, with due consideration of rare and threatened, and locally endemic flora, fungi and fauna species, plant communities, habitats and ecosystems;*
- (c) *Mobilize adequate resources for the implementation of all biodiversity-related strategies, programmes and action plans in the long run.*

Recommendation 12.4:

*The Government should:*

- (a) *Adopt amendments to the 2006 Law on Specially Protected Nature Areas, incorporating the concepts of the ecological network and ecological corridors;*
- (b) *Extend the territories of existing protected areas and their external protective buffer zones, and designate new protected areas, in order to provide adequate coverage of all main ecosystem types representative of Armenia and the sufficient inclusion of habitats of rare and threatened species, and to ensure the ecological connectivity and continuity of the protected area network by linking core areas with ecological corridors, covering migration routes of rare and threatened terrestrial and aquatic wildlife species;*
- (c) *Mobilize adequate resources to ensure the proper long-term functioning of the national ecological network.*

Recommendation 12.5:

*The Government should increase the financial, human, technical and operational capacities of the State authorities, research institutions and entities responsible for SPNA management, to enable the Ministry of Environment and the Ministry of Education, Science, Culture and Sport to:*

- (a) *Recruit and train additional staff, in particular for conducting biodiversity monitoring, SPNA area surveillance and law enforcement;*
- (b) *Maintain the staff remunerations at a level that is attractive for skilled professionals, university graduates, IT specialists, young scientists and rangers, and encourage them to seek employment in the biodiversity conservation sector;*
- (c) *Provide modern biodiversity monitoring equipment and fire detection devices, outdoor equipment and uniforms, off-road vehicles;*
- (d) *Provide investment in SPNA field infrastructure for scientists, rangers, and visitors.*

## **Chapter 13: Soil conservation**

Recommendation 13.1:

*The Government should enhance collaboration between its various institutions that are dealing with soil management and conservation.*

Recommendation 13.2:

*The Government should:*

- (a) *Establish through the Ministry of Environment a well-designed grid-based soil monitoring system, which will cover the whole territory and consider a larger density of soil sampling at contaminated sites and on croplands, as well as making the data publicly available;*
- (b) *Allocate appropriate budget to maintain the system.*

Recommendation 13.3:

*The Ministry of Environment in cooperation with the relevant stakeholders, should develop databases that provide information on current soil characteristics and environmental conditions.*

Recommendation 13.4:

*Based on updated soil data, the Ministry of Environment in cooperation with the relevant stakeholders, should:*

- (a) *Develop relevant soil indicators;*
- (b) *Revise the Land Code, taking into account soil data, to include regulation of chemical fertilizers and pesticides and the protection of soil biodiversity, and to introduce mandatory threshold values for organic and inorganic chemicals;*
- (c) *Integrate and operationalize soil protection and especially humus enhancing management options in order to reflect the role of soils in climate protection;*

- (d) *Revise the policy on soil conservation, protection, and management to adjust it to international soil conservation, protection, and management practices.*

Recommendation 13.5:

*The Government should seek for external support to finance local actions to stop soil contamination and degradation.*

Recommendation 13.6:

*The Government should:*

- (a) *Endorse and implement an ecosystem-based landscape approach;*
- (b) *Ensure the identification of vulnerable areas of soil degradation;*
- (c) *Define integrated restoration actions to prevent soil degradation, minimize nutrient depletion, improve vegetation cover, protect biodiversity, manage better water resources, and avoid further contamination of soils from various sources;*
- (d) *Devote special attention to black soils due to their high biomass productivity and carbon sequestration capacity.*

Recommendation 13.7:

*The Ministry of Economy and the Ministry of Environment should:*

- (a) *Increase controls on the use of chemical fertilizers and pesticides;*
- (b) *Promote environmentally friendly farming practices, such as regenerative and climate smart agriculture that is supported with the necessary funding;*
- (c) *Control overgrazing of pastures and wildfires.*

Recommendation 13.8:

*The Ministry of Emergency Situations in cooperation with relevant stakeholders should map areas that are subject to mud flows, update the existing maps on landslides and take necessary protection measures.*

## **Chapter 14: Health and the environment**

Recommendation 14.1:

*The Ministry of Health in cooperation with relevant governmental authorities, should:*

- (a) *Ensure the selection of the best indicators on health determinants and risk factors;*
- (b) *Ensure the progressive integration of data on the selected indicators in the information system;*
- (c) *Support the establishment of uniform data collection and reporting system using distributed database architecture in order to streamline data reporting by different health institutions;*
- (d) *Develop further the measurement of and availability of information on noise and vibration;*
- (e) *Make available health information that is relevant for the public.*

Recommendation 14.2:

*The Ministry of Health in cooperation with relevant governmental authorities, should:*

- (a) *Enhance surveillance of infectious diseases particularly natural-focal and vector-, water- and food-borne diseases through the introduction of integrated service delivery;*
- (b) *Strengthen surveillance of water- and food-borne diseases and food poisoning specifically the early detection of outbreaks and rapid response mechanisms through introduction of modern geographical and analytical epidemiological methods;*
- (c) *Improve skills and capacity to apply analytical and public health methods to both infectious and non-communicable diseases for the preparation of periodic reports on public health status to support disease control and prevention activities.*

Recommendation 14.3:

*The Government should:*

- (a) *Ensure progressive implementation of the WHO water safety plans to small water supplies across the country;*
- (b) *Support the development and implementation of programmes to improve hygiene and sanitary conditions in remote rural areas and reinforce hygiene education.*

Recommendation 14.4:

*The Ministry of Health in cooperation with the Ministry of Environment and other relevant governmental authorities, should:*

- (a) *Develop a proposal for health-relevant air quality monitoring;*
- (b) *Introduce legally binding limit values for PM<sub>10</sub> and PM<sub>2.5</sub>;*
- (c) *In the framework of cooperation and with the support of WHO introduce a periodic assessment of the health impacts of ambient PM<sub>2.5</sub>, to report on the air pollution policy abatement effects and on the progress towards SDG indicators 3.9.1 and 11.6.2;*
- (d) *Seek WHO support to carry out capacity assessment (saturation of laboratory equipment and reagents, availability of appropriate methodologies), as well as capacity building for (indoor) air quality research in schools and kindergartens and jointly conduct pilot studies with other stakeholders, based on the results of which, to invest appropriate efforts in the implementation of a national survey of air quality in schools and kindergartens (indoors).*

Recommendation 14.5:

*The Government should:*

- (a) *Ensure vulnerability assessment of population health to climate change in line with international practices with the aim of developing concrete actions to protect population health along with mechanisms for monitoring their effects and effectiveness in the national action programme on adaptation to climate change;*
- (b) *Ensure the development and sustainable operation of early warning systems for heat waves (heat-health alerts), and for climate-sensitive health risks (e.g. air pollution exposure) and diseases outcomes (e.g. water-/food-borne infection);*
- (c) *Support the broader dissemination and use of climatic and meteorological information and data among various stakeholders at central and local levels to advance preparedness for and resilience to extreme weather events;*
- (d) *Reinforce the building of climate-resilient water supply and sanitation services following the 2010 Guidance developed under the Protocol on Water and Health;*
- (e) *Ensure that capacity building on climate change, environment, and health among the relevant authorities create an enabling environment to support coordinated work across the sectors and institutions.*

## **Chapter 15: Agriculture and the environment**

Recommendation 15.1:

*The Government should:*

- (a) *Continue implementing the 2019 Strategy of the Main Directions Ensuring Economic Development in Agricultural Sector for 2020–2030 and set up a comprehensive cross-cutting and coordinated monitoring system, which allows monitoring of the environmental impacts of agriculture and the effects of responses aimed to minimize those impacts;*
- (b) *Reduce water needs and consumption by fostering and nurturing the use of crop varieties and animal breeds resistant to climate change and less demanding on water resources, adapting agronomic practices and techniques which consume less water;*

- (c) *Renovate the irrigation system as well as increase the effectiveness of the irrigation methods and protocols to tackle the growing scarcity of the water resources;*
- (d) *Prevent water pollution by minimizing the use of chemical products (fertilizers and pesticides);*
- (e) *Ensure that large animal farms pay fees for water pollution by nutrients and other pollutants;*
- (f) *Promote organic agriculture based on the highest agrobiological norms and standards aiming to build a domestic and international niche market;*
- (g) *Develop training and awareness programmes to promote environmental services and adaptation to climate change, with priority for all stakeholders in the agricultural and forestry sectors, as well as civil society;*
- (h) *Initiate a set of actions to establish innovative technical and financial tools and incentives as required by SDG 9, to preserve the environment throughout the agricultural and forest sustainable management process.*

Recommendation 15.2:

*The Government should:*

- (a) *Increase efforts to prevent, stop and reverse land degradation caused by agricultural processes, reduce grazing pressures to meet the natural capacities of the land; tailor grazing technical itineraries to these capacities and decrease the levels of greenhouse gas/carbon emissions;*
- (b) *Develop climate-smart agricultural practices and methods, which will minimize energy consumption over the agricultural production cycle, reduce the vulnerability of production systems and units to climate change, strengthen climate smart value chains and shorten transport routes;*
- (c) *Complete ongoing legislative process on the regulation of import and use of genetically modified organisms;*
- (d) *Promote ecoproducts and ecoservices (e.g., labelling and certification norms and standards of products).*

Recommendation 15.3:

*The Government should:*

- (a) *Strictly protect black soils from all sources of degradation and monitor their evolution; in close cooperation with the Global Soil Partnership under the auspices of FAO, and with the other relevant international programs (e.g., UNESCO - Sustainable use of black soil critical zone project);*
- (b) *Set up a specific programme aiming to restore degraded lands by using phytoremediation and other suitable ecological methods and nature-based solutions, to remove and stabilize contaminants from the soils;*
- (c) *Initiate and promote capacity-building initiatives at the farmer level to preserve soils and lands and restore those that are contaminated and degraded.*

## **Chapter 16: Energy and the environment**

Recommendation 16.1:

*The Government should examine the possibility to establish a separate energy related Ministry as the authority responsible for development of the energy sector, which will ensure implementation of provisions on energy security, energy efficiency, renewable energy development; state technical control in the power sector and energy consumption.*

Recommendation 16.2:

*The Government should:*

- (a) *While developing national policy documents to achieve SDG 7, undertake a comprehensive study on the development of renewable energy technologies that will include their status, trends, economic analysis, and institutional and legislative barriers;*
- (b) *Consider the development of a carbon emissions trading system, which could improve the competitiveness of renewables versus imported gas combustion TPPs;*

- (c) *Develop digital solutions for managing distributed renewable energy resources and their interaction with the power grid.*

Recommendation 16.3:

*The Government should:*

- (a) *Undertake awareness-raising activities and energy efficiency campaigns;*  
(b) *Consider energy efficiency as a backbone to sustainable energy development and prioritize energy efficiency measures (to the extent they prove economically and technically feasible) before expanding energy infrastructure and building power generation facilities.*

## **Chapter 17: Industry and the environment**

Recommendation 17.1:

*The Government should:*

- (a) *Establish eco-industrial parks where industries use BAT or greener technologies and cleaner energy sources;*  
(b) *Accelerate the preparation and adoption of the requirements for industrial zones, including environmental requirements;*  
(c) *Ensure that SEA is carried out prior to the establishment of industrial zones, free economic zones and eco-industrial parks.*

Recommendation 17.2:

*The Government should accelerate the adoption of the Mining Development Strategy.*

Recommendation 17.3:

*The Government should carry out:*

- (a) *A detailed environmental, health and safety risk assessment of closed and/or abandoned mining tailings in the country.*  
(b) *A strategic environmental assessment of the mining sector.*

Recommendation 17.4:

*The Government should:*

- (a) *Integrate a GHG emissions assessment into the EIA of industrial and mining projects to enable the determination of their climate change impacts;*  
(b) *Develop and implement adaptation measures specific to industry and mining sectors, including the gradual shift to the use of greener technologies, cleaner energy sources, and energy audits.*

Recommendation 17.5:

*The Government should promote innovation and technological upgrading in industry through increasing R&D expenditures and encouraging higher spending in the private sector, contributing to a knowledge- and skills-based industrialization of the country.*

## **Chapter 18: Transport and the environment**

Recommendation 18.1:

*The Government should increase its efforts in gathering transport related statistics as a basis for robust policy and decision making.*

Recommendation 18.2:

*The Government should continue efforts aimed at encouraging the shift to more sustainable modes of transport by continuing to promote and implement the transport related national policies with a particular focus on regulating high-polluting vehicles and incentivising energy-efficient vehicles, limiting polluting vehicles, and improving public transport through additional investments in the subway system in Yerevan as well as renewal of the surface transport fleet.*

Recommendation 18.3:

*The Government should renew its efforts to improve road safety by adopting an integrated safe system approach focusing on implementing targeted policies aimed at reducing road fatalities and accidents, ensuring appropriate enforcement measures, requiring safe cars on the road network and making the road network safe for all users and ensuring that all relevant stakeholders are involved in defining and implementing a safe system approach.*

Recommendation 18.4:

*The Government should comprehensively assess priority actions required for the accession to the missing transport sector-related United Nations Conventions and legal agreements aimed at increasing efficiency of the transport network and reducing the environmental impact of the transport sector.*

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