



Protocol on Water and Health – Improving health in Armenia through target setting to ensure sustainable water management, access to safe water and adequate sanitation

ACTION PLAN

To support the implementation of targets and target dates

Yerevan, June 2014

The present report was prepared in the framework of a project funded by the Government of Finland through its FinWaterWei programme on the implementation of the Protocol on Water and Health in the Republic of Armenia. The United Nations Economic Commission for Europe (UNECE) assisted the Republic of Armenia in the implementation of the project as the main implementing entity. The NGO Armenian Women for Health and a Healthy Environment coordinated the inputs of the NGO community and provided logistical support.

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List of Acronyms

ADB	Asian Development Bank
AFD	Agence Française de Développement (French Development Agency)
BMO	Basin Management Organization
BPC	Basin Public Council
EBRD	European Bank for Reconstruction and Development
EC	European Commission
ENPI	European Neighborhood Policy Instrument
EU	European Union
EUWI	European Union Water Initiative
GEF	Global Environmental Facility
GOA	Government of Armenia
IWRM	Integrated Water Resources Management
JICA	Japanese International Cooperation Agency
KfW	Kreditanstalt für Wiederaufbau (German Reconstruction Credit Institute)
MCA	Millennium Challenge Account
MEDS	Ministry of Education and Science
MENR	Ministry of Energy and Natural Resources
MNP	Ministry of Nature Protection
MOH	Ministry of Health
MTA	Ministry of Territorial Administration
NATO	North Atlantic Treaty Organization
NPD	National Policy Dialogue
NWP	National Water Program
OECD	Organization for Economic Cooperation and Development
OSCE	Organization for Security and Cooperation in Europe
RBMP	River Basin Management Plan
REC	Regional Environmental Centre
ROA	Republic of Armenia
SEIS	Shared Environmental Information System
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
USAID	United States Agency for International Development
WB	The World Bank
WFD	Water Framework Directive
WHO	World Health Organization
WRMA	Water Resources Management Agency
WSC	Water Supply Company
WSP	Water Safety Plan

1. Introduction

The Republic of Armenia signed the Protocol on Water and Health to the 1992 UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention) on 17 June 1999 in London. Since then, the process of ratification has been initiated.

In order to facilitate the target setting process, as required by Article 6 of the Protocol, and foster experience in the implementation of the Protocol in Armenia, UNECE has initiated an assistance project in close cooperation with Ministries of Nature Protection and Health of Armenia and with the financial support of Finland through its FinWaterWei¹ programme.

One of the main objectives of the project was to facilitate the ratification of the Protocol on Water and Health by the Republic of Armenia, by providing a forum for policy dialogue and decision-making on the issues covered by the Protocol and through the development of a roadmap for ratification of the Protocol by Armenia.

As part of the project implementation, the working group of national experts and the international consultant completed the work on the baseline analysis and finalized the draft targets and target dates under the Protocol, which were adopted at the Steering Committee meeting of the project in May 2014. The current report is based on these results and comprises an Action Plan to support the implementation of the targets and targets dates with the overall aim to ensure sustainable water management, access to safe drinking water and adequate sanitation in Armenia.

Based on the analysis of the draft targets and phased program of measures of the Republic of Armenia Law “On National Water Program” this report establishes priorities and integrates measures to comply with the provisions of the Protocol on Water and Health, at the same time respecting the national procedures for planning, implementation and financing measures on water management, water supply and sanitation.

The report also roughly estimates the costs for implementing targets, and identifies possible sources of funding, taking into consideration the focus and sectors of the work of the water related projects and initiatives in Armenia, funded and supported by international multi- and bi-lateral donors. For each of the proposed measure responsible agency for implementation is also indicated.

2. Draft Targets under the Protocol on Water and Health in Armenia

In the section below the draft targets under the Protocol on Water and Health in Armenia are provided. Out of 20 target areas of the Protocol on Water and Health, 9 target areas were considered by the EUWI National Policy Dialogue Steering Committee (which also served as the project Steering Committee) members as priority for Armenia, and thus the UNECE/FinWaterWei project experts in consultation with national stakeholders and beneficiaries developed respective targets for these priority areas.

The selected priority target areas are the following:

¹ FinWaterWei is the programme for Finland’s water sector support to the EECCA countries under the Wider Europe Initiative. The FinWaterWEI programme is managed on behalf of the Finnish Ministry for Foreign Affairs by SYKE (<http://www.environment.fi/default.asp?contentid=405313&lan=EN>)

- Target area I, quality of the drinking water supplied
- Target area II, reduction of the scale of outbreaks and incidents of water-related diseases
- Target area III, access to drinking water
- Target area IV, access to sanitation
- Target area XI, quality of discharges of waste water from wastewater treatment installations to waters within the scope of the Protocol
- Target area XIV, quality of waters which are used as sources for drinking water
- Target area XVIII, identification and remediation of particularly contaminated sites
- Target area XIX, effectiveness of systems for the management, development, protection and use of water resources
- Target area XX, frequency of publication of information on the quality of drinking water supplied and of other waters relevant to the Protocol

According to the prioritized target areas the following targets, targets dates with corresponding indicators, related measures, as well as proposed responsible organizations were preliminary developed by the UNECE/FinWaterWei project team. They have been discussed in detail at the 12th meeting of the Steering Committee of the EUWI NPD on IWRM in Armenia, held on May 6, 2014, and were adjusted to incorporate all of the recommendations and suggestions of the Steering Committee.

Table 1: Preliminary agreed targets and dates to achieve the targets in Armenia

Target area I, quality of the drinking water supplied			
#	Targets	Target dates and indicators²	Proposed responsible organizations
1.1	Compliance of drinking water quality with national standards for chemical parameters (F, NO ₂ , NO ₃ , As, Fe, Pb)	at least 99% starting from 2014	Ministry of Territorial Administration Water supply companies
1.2	Reduction of non-compliance of drinking water quality with national standards for microbiological parameters	to not more than 18% by 2016 to not more than 15% by 2020	Ministry of Territorial Administration Water supply companies
1.3	Development and implementation of Water Safety Plans (WSP)	in 5 communities by 2020	Ministry of Territorial Administration Water supply companies
Related measure			
1	Develop methodology and legal basis for WSPs, taking WHO recommendations into account	by 2016	Ministry of Health

Target area II, reduction of the scale of outbreaks and incidents of water-related diseases			
#	Targets	Target dates and indicators	Proposed responsible organizations
2.1	Maintain a zero level of outbreaks and incidents of cholera, typhoid fever and hepatitis A related to water	continuous	Ministry of Territorial Administration Water supply companies
2.2	Maintain the vaccination of children against rotavirus	at least 90% annual coverage	Ministry of Health
Related measure			
1	Strengthen systems for surveillance of, and response to, water-related diseases in accordance with Government Decision 1913-N of 29		Ministry of Health

²) By the end of the corresponding years indicated.

December 2011		
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Target area III, access to drinking water			
#	Targets	Target dates and indicators	Proposed responsible organizations
3.1	Improve the access of the rural population to safe drinking water by constructing and rehabilitating water supply systems	in 15 communities by 2016 in a further 20 by 2020	Ministry of Territorial Administration Water supply companies
3.2	Improve the quality of services provided by water supply companies	- reduction of losses in water supply systems by 5% by 2016; by 7% by 2017; and by 10% by 2020 (compared to 2013) - ensure 24-hour water supply for the urban population: for 90% by 2020; and 95% by 2025	Ministry of Territorial Administration Water supply companies
3.3	Improve access to safe drinking water in educational facilities (facilities include kindergarten through senior school and boarding facilities)	in 20 facilities by 2016 in a further 30 by 2020	Ministry of Education and Science Ministry of Territorial Administration
3.4	Enact a law on water supplies	by 2016	Ministry of Territorial Administration National Assembly of Armenia
Related measures			
1	Assess the drinking water supply situation in the 560 communities not served by water companies	by 2015	Ministry of Territorial Administration Water supply companies
2	Rehabilitation of 5 drinking water treatment plants	by 2018	Ministry of Territorial Administration Water supply companies
3	Construction of 5 plants to treat surface water for drinking purposes	by 2020	Ministry of Territorial Administration Water supply companies
4	Development and implementation of programs to improve drinking water supplies in educational facilities	by 2020	Ministry of Education and Science Ministry of Territorial Administration

Target area IV, access to sanitation			
	Targets	Target dates and indicators	Proposed responsible organizations
4.1	Improve access to sanitation	- Construction of new sanitation systems, including alternative wastewater disposal and treatment systems: by 2018 in 10 communities; by 2025 in additional 40 communities	Ministry of Territorial Administration Water supply companies

		-Rehabilitation and expansion of existing centralized sanitation systems: in at least 2 cities by 2016; in further 3 by 2020	
4.2	Improve sanitation in educational facilities	- Construction of new sanitation systems, including Ecosan toilets: 10 by 2018; and a further 25 by 2025	Ministry of Education and Science Ministry of Territorial Administration
Related measures			
1	Reconstruction and upgrading of "Aeratsia" wastewater treatment plant in Yerevan	by 2016	Ministry of Territorial Administration Yerevan Municipality
2	Construction of wastewater treatment plants and improvement of sanitation networks	by 2016 in Dilijan and Jermuk; by 2020 in additional 3 cities	Ministry of Territorial Administration Water supply companies
3	Development and approval of a national strategy for sanitation and wastewater treatment	by 2015	Ministry of Territorial Administration
4	Assess situation in 560 rural communities not covered by water supply companies	by 2015	Ministry of Territorial Administration
5	Development and implementation of programs to improve sanitation in educational facilities	by 2020	Ministry of Education and Science Ministry of Territorial Administration

Target area XI, quality of discharges of waste water from wastewater treatment installations to waters within the scope of the Protocol			
#	Targets	Target dates and indicators	Proposed responsible organizations
11.1	Develop and establish standards for the quality of effluents from treatment plants discharged into open water bodies, and related procedures	by 2016	Ministry of Nature Protection Ministry of Territorial Administration
11.2	Reduction in the discharges of untreated wastewater in Yerevan	- At least: by 50% by 2017; by 75% by 2020 (compared to 2014)	Ministry of Territorial Administration Yerevan Municipality
11.3	Reduction in the discharges of untreated wastewater in 4 other cities	- Construction of wastewater treatment plants in Dilijan and Jermuk by 2016 -Rehabilitation/construction of wastewater treatment plants in 2 other cities by 2020	Ministry of Territorial Administration Water supply companies
Related measures			
1	Inclusion of indicators for wastewater treatment in the criteria for evaluation of the operation of water supply companies	by 2016	Ministry of Territorial Administration
2	Assess the quality of water in specific basins according to the maximum	by 2018 in 1 pilot basin; by 2020 in 2 other	Ministry of Nature Protection

	allowable concentrations for wastewater discharges		Ministry of Territorial Administration
3	Implement the system for monitoring the quality of discharged wastewater	by 2017	Ministry of Nature Protection Ministry of Territorial Administration

Target area XIV, quality of waters which are used as sources for drinking water			
	Targets	Target dates and indicators	Proposed responsible organizations
14.1	Enforce the delimitation of the first-level sanitary zones to protect drinking water sources	60% of sources by 2018; at least 95% by 2020	Ministry of Territorial Administration Water supply companies
14.2	Review and upgrade methodologies for the delimitation of the second- and third-level sanitary zones to protect drinking water sources	by 2020	Ministry of Territorial Administration Water supply companies
Related measures			
1	Construction and rehabilitation of treatment facilities of drinking water supplied from drinking water source		Ministry of Territorial Administration Water supply companies
2	Ensure the quality of waters, which are used as sources of drinking water for communities not served by water supply companies, in compliance with national standards		Ministry of Territorial Administration Water supply companies

Target area XVIII, identification and remediation of particularly contaminated sites			
	Targets	Target dates and indicators	Proposed responsible organizations
18.1	Assess and map particularly contaminated sites, including around water bodies	in 1 pilot marz by 2018; in a further 3 marzes by 2020	Ministry of Nature Protection
18.2	Implement the monitoring system of water resources quality	by 2017	Ministry of Nature Protection
Related measure			
1	Optimize the network of monitoring points for the quantity and quality of water resources		Ministry of Nature Protection

Target area XIX, effectiveness of systems for the management, development, protection and use of water resources			
	Targets	Target dates and indicators	Proposed responsible organizations
19.1	Development of river basin management plans	for Araratyan, Akhuryan, and Hrazdan water basins by 2017; for the Northern, Southern and Sevan water basins by 2020	Ministry of Nature Protection
19.2	Development of bio-monitoring guidelines	by 2018	Ministry of Nature Protection
19.3	Classification of water resources by water bodies	by 2018	Ministry of Nature Protection
19.4	Establishment of River Basin Management Councils for the River Basin Management Authorities and ensuring their lawful activities through the creation of a legislative and institutional framework	2 by 2019; the remaining 4 in 2021	Ministry of Nature Protection

19.5	Develop a strategy for managing the quality of water resources	by 2016	Ministry of Nature Protection
Related measures			
1	Clarify the roles and responsibilities of water sector institutions	by 2016	Government
2	Ensure a unified legal basis and mechanisms for information exchange among the stakeholder institutions in order to strengthen the State Water Cadastre system	by 2015	Ministry of Nature Protection
3	Establish the legislative basis for the mandate and operations of the River Basin Management Councils	by 2018	Ministry of Nature Protection
4	Strengthen the management functions of the River Basin Management Authorities by building their capacities	by 2017	Ministry of Nature Protection
5	Conduct hydro-geological studies and analyses of groundwater resources and classify these resources by national water reserve and usable water resources	for Ararat valley by 2016 for the whole country by 2018	Ministry of Nature Protection Ministry of Energy and Natural Resources
6	Develop an action plan to improve aquatic ecosystems	by 2020	Ministry of Nature Protection
7	Establishment of a registry for water management systems	by 2018	Ministry of Territorial Administration

Target area XX, frequency of publication of information on the quality of drinking water supplied and of other waters relevant to the Protocol			
	Targets	Target dates and indicators	Proposed responsible organizations
20.1	Publish annual report on the quality of drinking water supplied	starting from 2015	Ministry of Territorial Administration Water supply companies Ministry of Health
20.2	Publish a national report under the Protocol on Water and Health	every 3 years from 2016	Ministry of Nature Protection Ministry of Health Ministry of Territorial Administration
20.3	Establish a Clearing House under the Protocol on Water and Health	by 2016	Ministry of Health
Related measure			
1	Ensure access of the public to the national reports under the Protocol on Water and Health and publications on drinking water quality		Ministry of Nature Protection Ministry of Territorial Administration Ministry of Health

Despite the fact that Armenia has not yet ratified the UNECE Protocol on Water and Health, currently the Ministry of Nature Protection of the Republic of Armenia is initiating the official circulation of the draft final targets to relevant government agencies and stakeholders for their

comments. Corresponding information is also posted on the Ministry website, available from the following URL: <http://www.mnp.am>.

3. Phased Program of Measures of the Republic of Armenia Law “On National Water Program”

After adoption of the Water Code (2002) and the Republic of Armenia law “On Fundamental Provisions of the National Water Policy” (2005), the Republic of Armenia Law “On National Water Program” (NWP) was adopted in 2006. The Water Code defines the subjects to be regulated by the National Water Program, varying from technical and scientific aspects of water resources management to estimates of financial and other resources needed for implementation of the NWP. Implementation of the National Water Program is ensured by means of implementing the phased program of measures annexed to the law. It consists of 29 action/measures to be implemented by respective government agencies in short- (by 2010), medium- (by 2015) and long-term (by 2021) perspectives for achieving the goals and objectives stipulated by Armenian legislation.

According to the requirements of the Water Code, and the Law “On National Water Program”, the phase program of measures is defined and adopted by the Government of Armenia based on the requirements of the Republic of Armenia law “On Fundamental Provisions of the National Water Policy”. After approval, the program of measures shall be regularly updated following the procedure defined by the law and GOA. The state authorized bodies responsible for implementation of the measures shall report to the Government before the 25th of March of the following year on progress of implementing the measure(-s). The report shall include: the status of implementation of the measures assigned (completed or ongoing), information on financial resources, justification for incomplete measures, as well as amendments to the law. The Government shall present to the National Assembly by May 15th of the following year the annual communication on implementation of the NWP, summarizing the results of the reports from various state authorized bodies on implementation of measures, as well as suggested amendments to the law as required.

Thus, the NWP Law becomes a rolling plan to be implemented and updated periodically based on issues that still exist in the water sector and to be addressed for achieving more effective management and protection of water resources and water systems.

Table below describes the progress made as of today in implementation of the short- and medium-term of measures aimed at implementation of the goals and objectives defined by the National Water Program.

Table 2: Summary of the Status of Implementation of the Short-, Medium- and Long-Term Measures of the National Water Program

Issues to be addressed	Short-term Measures with deadline	Mid-term Measures with deadline	Long-term Measures with deadline	Responsible authority	Status and Technical assessment of implementation of the measure for IWRM
Harmonization, completion, and improvement of the legislative basis	<p>1. Harmonization and improvement of the existing legislation, including analysis of application of Article 121 of the RA Water Code and implementation of functions stipulated thereby – Nov 2010</p> <p>2. Establishment of an interagency Standing Commission within the National Water Council for ensuring the discussion of changes and amendments to be made in the legal acts - Nov 2010</p>	Review of any draft new laws and sub-legislative acts by the mediation mechanism, for ensuring integrity of all laws and other legal acts – Dec 2015	Ensuring the continuous maintenance of integrity among all laws and other legal acts – Dec 2021	<p>Ministry of Nature Protection</p> <p>Ministry of Territorial Administration</p> <p>Ministry of Healthcare</p> <p>Ministry of Agriculture</p>	<p>1. Both short- and mid-term measures are ongoing: Improvement of legislation, as well as analysis of implementation of requirements of Article 121 is an ongoing process to provide for implementation of the requirements of water legislation, including the Water Code.</p> <p>2. Short-term measure was not completed Despite the fact that such interagency standing commission is not established, under the umbrella of EUWI a Steering Committee of the NPD on IWRM in Armenia is successfully acting since 2007. The Steering Committee, which includes representatives of the MNP, Agriculture, Healthcare, Energy and Natural Resources, Finance, Emergency Situations, Territorial Administration, as well as representatives of academic and higher educational institutions, has already had 12 meetings since its establishment. Water policy issues, including legislative issues, are being discussed in the SC meeting. If the official status of the group is formally changed, it can quite well serve as the interagency standing commission.</p>
Clarification of roles and responsibilities of the water sector institutions	3. Review and implementation of developed recommendations on overlaps and gaps in the roles and responsibilities of the water sector institutions identified during the institutional and legal assessments – Dec 2010	Continuation of the process of institutional improvements, paying proper attention to the recommendations from re-designed programs of water resources monitoring and compliance assurance programs – Dec 2015	Ensuring continuation of the process of institutional improvements – Dec 2021	<p>Ministry of Nature Protection</p> <p>Ministry of Territorial Administration</p> <p>Ministry of Healthcare</p>	<p>3. Short-term measure was not completed The last comprehensive legal and institutional review of water management in Armenia was conducted back in 2005 by USAID Program for Institutional and Regulatory Strengthening of Water Management in Armenia. The assessment also includes recommendations and proposed action plan to implement the recommendations. However, most of the recommendations and proposed actions have not been implemented so far.</p>
Improvement of interagency cooperation and coordination	4. Adjustment and improvement of the mechanisms for interagency cooperation and coordination by the National			<p>Ministry of Nature Protection</p> <p>Ministry of</p>	<p>4. Was not completed Despite the fact that recently NWC is having more frequent meetings, so far no major improvements are made in interagency cooperation.</p>

Issues to be addressed	Short-term Measures with deadline	Mid-term Measures with deadline	Long-term Measures with deadline	Responsible authority	Status and Technical assessment of implementation of the measure for IWRM
	Water Council – Dec 2010			Territorial Administration Ministry of Healthcare	
Development of the Basin Management Organizations (BMOs)	5. Development of a program for institutional development of the BMOs – Nov 2010	Development of skills necessary for integrated planning and management of water resources by the BMOs – Dec 2015	Enhancing the authorities of the BMOs in the five basin management areas – Dec 2021	Ministry of Nature Protection	5. Short-term measure was completed, and mid-term measure is in progress. Though recently WRMA started to develop annual workplans for BMOs, those workplans mainly relate to implementation of their everyday function, and do not contain institutional development component. Unless BMOs have more authority in water resources management in their respective basins, it will be challenging to develop institutional strengthening program and implement it. Despite the objective of the MNP to support decentralized management of water resources, BMOs still do not have enough authority to issue permits for water resources of even local importance.
Development of new programs for monitoring of surface and ground water resources	6. Development and testing of a pilot monitoring system in one basin management area - Dec 2010 7. Development of a monitoring strategy and a national program, technical capacity building of the regional sub-divisions of monitoring services, needs assessment, structural improvements and technical modernization, establishment of an electronic data exchange system - Dec 2010 8. Re-establishment of the	Implementation of the monitoring strategy and the national program. Development and implementation of monitoring systems and programs for the other four basin management areas in compliance with the IWRM requirements – Oct 2015	Evaluation and further improvement of the existing monitoring systems on the national and five basin management area levels – Nov 2021	Ministry of Nature Protection Ministry of Emergency Situations	6. Both short and mid-term measures are in progress: With assistance of the EU Kura River Phase II Project, the EU WFD compliant monitoring programs for pilot Debed and Aghstev river basins of Armenia were developed in 2011. The proposed pilot monitoring program for Debed river basin is currently being tested with assistance of the project, which includes biological, hydro-morphological and physical-chemical monitoring of surface waters. Currently the MNP is in the process of establishment of an inter-agency working group on water quality monitoring and water quality assessment, which in the next 2-3 years should work on transition towards EU WFD compliant water quality monitoring and water quality assessment system. The working group should carefully review the monitoring systems developed and tested in pilot basins of Debed, Aghstev, Akhuryan, Metsamor (Sevjur) and explore the option of replicating them throughout the country. 7. Short-term measure was not completed

Issues to be addressed	Short-term Measures with deadline	Mid-term Measures with deadline	Long-term Measures with deadline	Responsible authority	Status and Technical assessment of implementation of the measure for IWRM
	ground water resources monitoring system in Armenia – Dec 2010				<p>To support implementation of this measure, a number of documents proposing strategy and measures, as well as technical guideline documents for improved surface water quantity and quality monitoring following the best international practice, were prepared in 2005-2011 by USAID, EU, UNDP, GEF and other donor-supported projects. All these documents were submitted to respective governmental agencies for their consideration.</p> <p>8. Short-term measure was completed: With assistance of USAID program on Regulatory and Institutional Strengthening of Water Sector of Armenia, the National Reference Groundwater Monitoring Network of Armenia comprised of 69 selected spring and wells was rehabilitated and handed over to Hydrogeological Monitoring Center of the MNP in 2007-2008. The wells and springs included in the reference monitoring network were selected based on the comprehensive assessment study of condition of previously used groundwater monitoring wells. The assessment also included description and mapping of hydrogeology of Armenia.</p> <p>Currently the HMC measures discharge, level (pressure) and temperature in 70 sampling points, including 24 wells and 46 springs throughout 6 basin management areas of Armenia. A systematic quality monitoring of groundwater resources is lacking. However, this reference network shall be redesigned and extended for meeting the data needs for integrated river basin management planning process.</p>
Improvement of water use permitting procedures/	9. Improvement of the existing water use permitting regulations, as well as establishment of criteria for	Continuous improvement of the water use permitting procedure, including public notice	Development of mechanisms aimed at strengthening the role of the Dispute Resolution	Ministry of Nature Protection	<p>9. Short-term measure was completed with a delay In May of 2011 the GOA adopted decision N 677-N on making changes in the GOA decision N 218-N, dated March 7, 2003 on establishing standard forms of Water</p>

Issues to be addressed	Short-term Measures with deadline	Mid-term Measures with deadline	Long-term Measures with deadline	Responsible authority	Status and Technical assessment of implementation of the measure for IWRM
water rights institution	<p>assessment of priority of water use applications - Dec 2009</p> <p>10. Development of criteria and guidelines for environmental impact assessment, as part of water use permit application process, in cases when possible substantial impact on the environment can occur from a given water use - Dec 2009</p>	<p>and appeal mechanisms – Oct 2015</p> <p>With the purpose of fostering efficient and target use, development of a program for introduction of legal structural measures, as well as mechanisms for providing privileges and (or) limitations and economic constrains –Oct 2015</p> <p>Continuous improvement of analytical capacities for water use and water discharge impact assessment – Oct 2015</p>	Commission of the National Water Council – Jun 2021	Ministry of Healthcare	<p>Use Permit (WUP) and approving WUP Forms. These changes improved the existing procedures on issuance of WUPs, by proving additional procedures on issuance of the WUPs, extension of duration of the WUP, as well and forms for providing hydrogeological data obtained from the Hydrogeological Monitoring Center of the MNP. These changes also allow for electronic submission of applications for WUP and issuance of WUP.</p> <p>10. Short-term measure was completed</p> <p>A project has been implemented in 2009 within the framework of the state budget funding. Parallel to that the GOA has developed and approved the following decisions:</p> <ol style="list-style-type: none"> 1. Republic of Armenia Government Resolution 927-N of June 30, 2011 “On Defining Drinking-Household, and Agricultural Water Demand, and Assessing the Environmental Flow according to the Republic of Armenia Water Basin Management Areas”, 2. Republic of Armenia Government Resolution No 118-N of January 14, 2010 “On Defining Measures for Application of Modern Technologies, Improving Water Resources Monitoring and Reducing and Preventing Pollution”.
Development of the State Water Cadaster	11. Development and implementation of a short-term program for the State Water Cadaster, including development and introduction of the water resources coding system, establishment and introduction of modern maintenance mechanisms for the State Water Cadaster, as well as development of water	Development of a mid-term program for the State Water Cadaster and continuous improvement of the information system; Modernization of water sector data base management mechanisms; Creation of data bases at the level of basin	Further development of the Cadaster for achieving the long-term goal, including delegation of responsibilities to Basin Management Organizations and use of the Cadaster for integrated planning and management at the basin level – Dec 2021	<p>Ministry of Nature Protection</p> <p>Ministry of Emergency Situations</p> <p>Ministry of Energy and Natural Resources</p>	<p>11. Short-term measure was completed:</p> <p>With funding from the state budget (under the mid-term state expenditures programs of RA for 2007-2010), as well as technical assistance from USAID Program Regulatory and Institutional Strengthening of Water Sector of Armenia, the State Water Cadaster was developed and operationalized</p>

Issues to be addressed	Short-term Measures with deadline	Mid-term Measures with deadline	Long-term Measures with deadline	Responsible authority	Status and Technical assessment of implementation of the measure for IWRM
	resources coding system and the coding of water resources – Oct 2010	management areas; Establishment of an electronic system for data exchange and creating conditions for its effective maintenance in the future – Dec 2015			
Improvement of public awareness and participation in the water sector management process	<p>12. Ensuring public awareness and participation in the planning and management of water resources on the national and basin management levels – Sep 2010</p> <p>13. Development and implementation of strategies for establishment of Basin Public Councils (BPCs), building the technical capacity of the BPCs - Sep 2010</p>	Development and application of procedures ensuring participation of stakeholders, including Basin Public Councils and the general public, in the process of development, implementation and monitoring of plans for integrated water resources management on the basin level – Oct 2015		<p>Ministry of Nature Protection</p> <p>Ministry of Territorial Administration</p>	<p>12. Short-term measure was not completed EU WFD CIS guidance document on public participation, which provides decision makers and competent authorities with guidance on how to use public participation and stakeholders involvement to improve water management, can be used to implement this measure.</p> <p>13. Short-term measure was not completed In 2003-2004 USAID Integrated River Basin Planning for Khrami-Debed River Basin Regional Project supported establishment of a Basin Public Council Foundation in Northern basin management area, which stopped working after completion of the Project. Afterwards, in 2005 options for establishment of Basin Public Councils were recommended by the USAID’s Program on Regulatory and Institutional Strengthening of Water Sector of Armenia based on analysis of issues, and following the best international practice, and supported another pilot BPC in Southern BMO. This BPC also proved to be not sustainable and donor-driven.</p>
Implementation and monitoring of the National Water Program	<p>14. Implementation of continuous monitoring and assessment of implementation and update of ROA National water Program – Dec 2010</p> <p>15. Establishment of a monitoring system for the</p>	Continuous implementation and monitoring – Dec 2015	Continuous implementation and monitoring – Dec 2021	<p>Ministry of Nature Protection</p> <p>Ministry of Territorial Administration</p>	<p>14. Short-term measures was not completed Despite that fact that at the moment there is no designated agency in charge of continuous monitoring of implementation of the NWP, there are some opportunities with the recently established Water Resources Policy Division of the MNP. The main tasks of the Division include formation of state policy on water resources protection, development of policy programs and strategic directions and monitoring of their implementation. One of the specific functions of the</p>

Issues to be addressed	Short-term Measures with deadline	Mid-term Measures with deadline	Long-term Measures with deadline	Responsible authority	Status and Technical assessment of implementation of the measure for IWRM
	Program implementation - Dec 2010				<p>Division is development of National Water Policy and monitoring of its implementation, and nothing is mentioned specifically about the NWP. However, given the general task of the Division on monitoring the implementation of policy programs and strategic directions, it is ideally positioned to implement continuous monitoring of the NWP implementation.</p> <p>15. Short-term measures was not completed When the Water Resources Policy Division is officially designated as in charge of implementation of continuous monitoring and assessment of the NWP, it can establish sustainable monitoring system.</p>
Development of plans for integrated water resources management	<p>16. Capacity building in Water Resources Management Agency and Basin Management Organizations for integrated water resources management – Nov 2010</p> <p>17. Development of a pilot basin management plan and identification of information needs for one basin management area - Nov 2010</p>	Development of similar basin management plans for the other four basin management areas - Dec 2015	Regular update and continuous implementation of basin management plans for five basin management areas - Dec 2021	Ministry of Nature Protection	<p>16. Short-term measure was completed Since 2005, intensive on-the-job and out-of-job training and capacity building programs have been provided to WRMA and BMOs, as well as other key stakeholder institutions on various aspects of IWRM, a number of study-tours have been organized by USAID and EU funded initiatives.</p> <p>17. Short-term measure was partially completed With the support of USAID, EU, GEF, UNDP, UNECE and other donors draft RBMPs have been developed in Marmarik, Meghriget, Debed, Aghstev, Vorotan and Arpa River basins. Currently draft RBMPs are being developed for Akhuryan and Metsamor (Sevjur) River basins. Most of the plans have also identified significant data gaps, which are needed for development of fully EU WFD compliant RBMP. Within the EUWI, based on the example of Marmarik River basin, a draft Government of Armenia Protocol Session Resolution has been drafted “On Approving the Contents of the Water Basin Management Model Plan”, which was approved by Decision No. 4 of GOA Protocol Session of February 3, 2011. It will become the basis for development of technical characteristics of the six water basin management plans.</p>

Issues to be addressed	Short-term Measures with deadline	Mid-term Measures with deadline	Long-term Measures with deadline	Responsible authority	Status and Technical assessment of implementation of the measure for IWRM
Implementation of the Lake Sevan Action Plan	18. Review and improvement of the annual and complex program of “Measures for restoration, protection, reproduction and use of the Lake Sevan ecosystem” – Dec 2010	Implementation of the Lake Sevan Action Plan by a special interagency committee - Dec 2015	Continuous implementation of the Lake Sevan Action Plan. Monitoring and evaluation of the impact caused by the implementation of the plan on the Lake Sevan, for the purpose of ensuring the effectiveness of implementation of the Plan - Dec 2021	Ministry of Nature Protection Ministry of Territorial Administration	18. Sort-term measures was completed After adoption of the RA Law on Lake Sevan (2001), another ROA Law on Annual and Complex Measures for restoration, protection, reproduction and use of the Lake Sevan ecosystem that was adopted later in 2001, which has been subject to regular revision and updating since then. In June of 2008, the Annual and Complex program of measures was revised based on the priorities for restoration, protection, reproduction and use of the Lake Sevan ecosystem. Implementation of a number of proposed measures was funded under the medium-term state expenditure program of Armenia for 2007-2009.
Assessment of water resources and water reserve components	19. Clarification of up-to-date characteristics of water resources and water reserve components – Dec 2010 <i>a) Clarification of quantitative and qualitative spatial and temporal characteristics of the surface natural renewable flow, taking into account the quantitative and qualitative monitoring data, climate change and anthropogenic impacts on the flow, accumulated during the last 4 decades.</i> <i>b) Adjustment of separate assessment of surface and ground water reserves, adjustment of the groundwater flow data.</i> <i>c) Development of methods</i>	Incorporation of quantitative and qualitative characteristics of surface and ground water resources into the basin management plans - Dec 2015		Ministry of Nature Protection	19. Short term-measure was completed partially: a) not fully implemented, except of some major hydrological characteristics provided in GOA Decision N: 549-N, dated May 29, 2008 on establishing water balance elements by river basins and the distribution of water resources and reserves (see item 2 of this Table) b) Not implemented c) Implemented, GOA decision N 927-N, dated June 20, 2011 among other things establishing the methodology for calculation of environmental flows (for more details see item 17 in Table 1) d) Not implemented

Issues to be addressed	Short-term Measures with deadline	Mid-term Measures with deadline	Long-term Measures with deadline	Responsible authority	Status and Technical assessment of implementation of the measure for IWRM
	<p><i>for determination and calculation of the minimal ecological/environmental flow in main rivers.</i></p> <p><i>d) Adjustment of the data on operational/usable reserves of ground water resources and definition of the permissible (maximum) water extractions.</i></p>				
Elaboration and enforcement of water quality standards/norms	20. Adjustment and introduction of internationally accepted methodology for determination of norms for limitation of impact on water resources and standards for ensuring water quality, taking into consideration the best international practices – Dec 2009	Development and adoption of norms for limitation of impact on water resources and standards for ensuring water quality. Study of possibilities for localization of water quality standards on the level of basin management areas – Dec 2015	Enforcement of norms for limitation of impact on water resources and standards for ensuring water quality. Adoption of water quality standards on the level of basin management areas – Dec 2021	Ministry of Nature Protection Ministry of Economy Ministry of Healthcare	<p>20. Short-term measure was completed: In January 2011, the GOA adopted decision on establishing water quality norms to be maintained in basin management area based on peculiarities of the area that was developed following the best international practice.</p> <p>These norms shall be revised/updated in 6 years after adoption, which will allow to fully take into consideration hydro-morphological, hydro-geographical, hydro-physical, environmental and other peculiarities of the basin management areas.</p>
Determination and maintenance of aquatic ecosystem protection zones	21. Development of a methodology for determination of aquatic ecosystem protection zones, including flow formation zones, ground water protection zones, water protection zones, ecotone, zones of ecological emergency and ecological disasters in water basins, zones not subject to alienation – Nov 2010	Determination of aquatic ecosystem protection zones in accordance with the developed methodology, mapping and conservation – Dec 2015	Monitoring of aquatic ecosystem protection zones – Oct 2021	Ministry of Nature Protection Ministry of Territorial Administration	<p>21. Short-term measures was completed partially Following the requirements of Article 121 of the Water Code, ROA Government has developed and approved Resolution No 64-N of January 20, 2005 “On Criteria for Defining Water Ecosystem Sanitary Protection Zone, Territories of Groundwater Protection, Water Protection, Ecotone and Non-disposable Zones”.</p>
Study of the status of previously	22. Development and implementation of programs for use of previously drained	Implementation of programs for use of previously drained	Monitoring and assessment of the impacts of the applied	Ministry of Nature Protection	<p>22. Short-term measures was completed partially: Rehabilitation of Ararat valley drainage system was conducted in 2010-2012 within the Irrigation</p>

Issues to be addressed	Short-term Measures with deadline	Mid-term Measures with deadline	Long-term Measures with deadline	Responsible authority	Status and Technical assessment of implementation of the measure for IWRM
drained agricultural lands in the Ararat valley	agricultural lands in Ararat valley – Nov 2010	agricultural lands in the Ararat valley - Dec 2015	measures - Nov 2021	Ministry of Agriculture Ministry of Territorial Administration	Infrastructure Activity of the Millennium Challenge Account (MCA) Armenia Program. Prior to rehabilitation works environmental/ hydrological baseline study of wetlands in the Ararat Valley was conducted. Rehabilitation of drainage system included removal of old blockages in the drains and provision of substitute measures to provide irrigation water, cleaning and deepening of collectors, secondary and tertiary drains, improvement of drainage system by constructing culverts and numerous small structures, rehabilitation of a number of artesian wells, limited amount of work on sub-surface drainage, while maintaining an optimally balanced ecosystem in the wetlands. As a result, the groundwater level is now two meters lower, and it is already possible to process higher value crops.
Increasing the strategic water reserves and regulation of river flow	23. Implementation of works provided for by the concept of the perspective program for reservoir construction – Dec 2010	Continuous implementation of works provided for by the concept of the perspective program for reservoir construction - Dec 2015	Continuous implementation of works provided for by the concept of the perspective program for reservoir construction - Dec 2021		<p>23. Short-term measure was completed partially</p> <p>With the funding of the German KfW Bank, the selected consultant in 2013 started the feasibility study for construction of Kaps Reservoir and Gravity Irrigation System. In the initial phase it is anticipated to rehabilitate the dam at a low level, providing about 6 million m³ capacity and the gravity supply of 2,200 ha of irrigation currently supplied by pumps or non-irrigated.</p> <p>With the funding of AFD, feasibility study started in 2013 for construction of Vedi reservoir with an overall storage volume of 20 million m³ (dam height – 70 m). Construction of the reservoir will make it possible to irrigate 2744 ha of agricultural lands and also get rid of water intake structures.</p> <p>In the territory of Myasnikyan community of Armavir province, on Mastara River, it is planned to construct Mastara reservoir with 10.2 million m³ overall storage volume (planned height of the dam - 30 m). It will collect the free flow of Selav-Mastara River in the section between Akhuryan Reservoir until the head-structure of the Talin irrigation system. The construction of the reservoir will enable to irrigate 4384 ha of agricultural lands of the region. As potential funder, Kuwait Foundation of Arabic Economic Development is planning to have appraisal</p>

Issues to be addressed	Short-term Measures with deadline	Mid-term Measures with deadline	Long-term Measures with deadline	Responsible authority	Status and Technical assessment of implementation of the measure for IWRM
					mission. Also, the GOA has applied to JICA for the construction of Yeghvard Reservoir with 90 million m ³ overall storage volume (planned height of the dam - 32 m).
Implementation of water quality management	24. Development of a strategy for water quality management - Dec 2010	Implementation of the strategy for water quality management strategy - Dec 2015	Monitoring and further improvement of the water quality management strategy - Dec 2021	Ministry of Nature Protection	24. Short-term measure was not completed There was no strategy developed for water quality management. However, this gap is filled by implementation of other measures included in this phased program, as measures on improvement of water use permitting (measures 9 and 10), development and implementation of basin management plans (measures 16 and 17), development and enforcement of water quality standards/ norms (measure 20).
Development of spatial planning criteria and guidelines	25. Review and improvement of the existing approaches to spatial planning – Dec 2010	Harmonization of spatial, water resources and environmental planning processes implemented on the national and regional levels - Dec 2015	Continuous implementation of regulatory and control measures aimed at conservation of aquatic ecosystem protection zones – Dec 2021	Ministry of Nature Protection Ministry of Territorial Administration	25. Short-term measure was not completed Spatial planning is key for integration of water management and land use planning in river basin districts. This is particularly important for Armenia taking into consideration the physical and spatial characteristics of the rivers. However, there is rather weak coordination between the spatial planning, land use planning and water resource management systems.
Management of trans-boundary water resources	26. Development of a program for management of trans-boundary water resources – Dec 2010	Implementation of a program for management of trans-boundary water resources - Dec 2015		Ministry of Nature Protection Ministry of Territorial Administration	26. Short-term measure was not completed No program has been developed, but Armenia is actively participating in all water related transboundary projects and initiatives in the region. Formally, Armenia has several international agreements in place with its neighboring countries on transboundary water resources (with Turkey, signed in 1927, 1964, 1973, 1975, 1990; with Georgia, signed in 1971, 1997; with Azerbaijan, signed in 1974; with Iran, signed in 1957, 2006). However, joint monitoring and/or measurement activities take place with Turkey and Iran only.
Improvement of water supply and waste water collection	27. Study of water supply and waste water collection services (drinking-domestic water supply, irrigation,	Development and introduction of an effective control mechanism for provision	Continuous development and improvement of water supply and waste water collection services -	Ministry of Territorial Administration	27. Short-term measure was partially completed Several studies on water supply and wastewater collection services were conducted by the World Bank, KfW, Asian Development Bank, USAID, OECD, European

Issues to be addressed	Short-term Measures with deadline	Mid-term Measures with deadline	Long-term Measures with deadline	Responsible authority	Status and Technical assessment of implementation of the measure for IWRM
services	hydro-power generation etc.) and development and implementation of programs aimed at improvement of the provided services – Dec 2010	of water supply and waste water collection services - Dec 2015	Dec 2021	Ministry of Nature Protection Ministry of Healthcare	Bank for Reconstruction and Development, Japanese International Cooperation Agency, MCA-Armenia and others in 2006-2010 under the coordination of State Committee on Water Systems of the Ministry of Territorial Administration. These studies provide recommendations for improving the water supply and wastewater collection services, including cost recovery, which are used by utilities for providing these services.
Ensuring safety of hydro-technical structures	28. Development of programs aimed at the enhancing of effectiveness of measures for ensuring safety of hydro-technical structures and reliability of operations - Dec 2010 29. Clarification of responsibilities for operation and protection of hydro-technical structures of state significance - Dec 2010	Implementation of programs aimed at the enhancing of effectiveness of measures for ensuring safety of hydro-technical structures and reliability of operations - Dec 2015	Monitoring and improvement of programs aimed at the enhancing of effectiveness of measures for ensuring safety of hydro-technical structures and reliability of operations- Dec 2021	Ministry of Territorial Administration Ministry of Energy and Natural Resources (other as relevant)	28. Short-term measure was partially completed State Committee of Water Systems of the Ministry of Territorial Administration, with assistance of the World Bank, MCA-Armenia, ADB and other donors developed and implemented a number of programs aimed at ensuring safety of hydro-technical structures and reliability of operations. Similar programs were developed by the Ministry of Energy and Natural resources. Specific measures recommended in the studies were implemented with the funding from the state budget and contribution of donor institutions in a form of loans and grants.

4. Donor Projects in Respective Target Areas

This section describes past, on-going and planned projects, which to certain extent relate to one or more of the selected 9 priority target areas of the Protocol on Water and Health in Armenia. The following bi-lateral and multi-lateral donors, international organizations, international financing organizations and banks have been active in water sector of Armenia, and particularly in respective target areas of the Protocol:

Asian Development Bank (ADB): Armenia became a member of the in 2005, and since then, among other areas, ADB has supported the country in the field of water supply and sanitation, which relate to the target areas I (quality of drinking water supplied), II (reduction of the scale of outbreaks and incidents of water-related diseases), III (access to drinking water), IV (access to sanitation), and XIV (quality of waters, which are used as sources of drinking water).

European Bank for Reconstruction and Development (EBRD): EBRD has worked with Armenia early on from 1992 and became the largest investor in the private enterprise and financial sectors of Armenia. Among other things, EBRD has supported various projects for water supply in Yerevan and small municipalities, and Lake Sevan protection through better wastewater management. For 2012-2015 EBRD's priorities include continued support for the municipal and environmental infrastructure sector. Thus, EBRD is contributing to the target areas I, II, III, IV, XI (quality of discharges of wastewater from wastewater treatment installations to waters within the scope of the Protocol), and XVIII (identification and remediation of particularly contaminated sites)

European Union/European Commission (EU/EC): As a priority partner country within the European Neighbourhood Policy Instrument (ENPI) and by a joint EU-Armenia Action plans, significant support in water sector of Armenia was provided in the last decade, including the following:

- Projects for transboundary river management for the Kura River (Armenia, Azerbaijan and Georgia) from 2002 to 2004 (EU Kura Project) and 2008 to 2013 (EU Kura Project Phase II and III), which supported the development of a common monitoring and information management system to improve transboundary cooperation in the Kura River basin. Within the projects draft Aghstev and Debed RBMPs have been prepared, based on EU WFD requirements, and EU WFD compliant monitoring programs were developed for the pilot basins;
- Development of Shares Environmental Information System (ENPI-SEIS) for Armenia, including water sector;
- Environmental Protection of International River Basins (EPIRB) project with participation of Armenia, Azerbaijan, Georgia, Belarus, Ukraine and Moldova, which develops EU WFD complaint RBMPs for Akhuryan Basin Management Area of Armenia (Metsmor and Akhuryan River Basins);
- Work on water supply for the household level in Armenia.

Thus, the EU/EC has contributed to the following target areas of the Protocol in Armenia: III, XI, XVIII and XIX (effectiveness of systems for the management, development, protection and use of water resources).

Organization for Security and Co-operation in Europe (OSCE): OSCE Yerevan operates since 2000. OSCE has assisted the Armenian government to set up and operate the Aarhus Network, a public environmental information centre for public participation and regional cooperation. The

Environment and Security Initiative (EnvSec; a partnership of OSCE, UNEP, UNECE, UNDP, REC and NATO) includes projects for transboundary water, environmental protection and climate change studies for South Caucasus region, and OSCE helps implementing the national components for Armenia. Thus, OSCE is contributing to the target areas II, XVIII, and XIX of the Protocol.

Organization for Economic Cooperation and Development (OECD): OECD is the strategic partner for water supply and sanitation and economic and financial aspects of IWRM under the umbrella of the EU Water Initiative on National Policy Dialogue in Armenia. OECD conducted a comprehensive analysis of existing economic instruments for water management in Armenia in Marmarik and Debed pilot River Basins, as well as proposed reforms of the existing economic instruments at national level and adoption of the new instruments. Since 2013 OECD is working towards development of sanitation strategy in Armenia, which will provide specific recommendations on how to increase the coverage of the Armenian population in a financially realistic way. Thus, OECS is contributing to the target areas III, IV, XVIII, XI and XIX of the Protocol.

United Nations Development Program (UNDP): UNDP office Armenia operates since 1993. The agency provides support the Government to reach national development priorities and the Millennium Development Goals by 2015. Among other things, UNDP supported the development of the First (in 1998) and Second (in 2008) National Environmental Action Programme of Armenia, which includes sections on water. In addition, UNDP supported Lake Sevan coastal zone cleaning project in 2012-2013 and implemented “Revive a River” project to improve wastewater management for Aghstev River in 2009-2013. Thus, UNDP contributes to the target areas IV, XVIII, and XIX of the Protocol.

Global Environment Facility (GEF): In Armenia, GEF has supported natural resources management projects, including water resources. In partnership with UNDP, GEF has an ongoing regional project on reducing transboundary degradation in the Kura-Aras River Basin, which works towards identified priority transboundary water problems. Also, Arpa RBMP was developed as part of the project. Hence GEF contributes to target areas XVIII and XIX of the Protocol.

United States Agency for International Development (USAID): The U.S. Government has been the largest bilateral donor in Armenia and the USAID has been actively engaged with the water sector in Armenia, since it achieved its independence in 1991. Since 2000 USAID has been funding several national and regional water projects in Armenia, which helped Armenia to achieve measurable progress in the water sectors through physical infrastructure upgrades, as well as institutional and regulatory reforms. USAID supported introduction of IWRM principles in Armenia, introduction and strengthening of water use permitting, development of State Water Cadastre Information System, and intensive capacity building activities for water management, including river basin planning and management (Meghriget, Vorotan and Voghji River basins in the Southern Basin Management Authority of Armenia). The ongoing project of USAID Clean Energy and Water Program for 2011-2015, among other things focuses groundwater problems in Ararat valley, related to intensive development of fish-farming. Thus, USAID has contributed to target areas I, II, III, IV, XVIII, XIX, XI and XX (frequency of publication of information on the quality of drinking water supplied and of other waters relevant to the Protocol).

Japan International Cooperation Agency (JICA): JICA started working in the water sector of Armenia since 2007. In 2007-2009 it financed the study for improvement of rural water supply and sewage systems in the Republic of Armenia. Currently JICA is considering some other water

related projects in Armenia. Thus, JICA contributed to the target areas I, II, III, IV, XIV, XIX and XX of the Protocol.

German Development Bank (KfW): KfW is actively involved in water supply projects, aimed at improving local water supply facilities in the cities of Armavir, Metsamor, Gyumri and Vanadzor as well as surrounding villages and municipalities. The Kaps reservoir project funded by KfW will be a part of the larger IWRM program envisioned, which includes Lake Arpi protection and drinking water supply in the area. In 2014 KfW also envisaged construction of wastewater treatment facility in one of the large cities of the service area of Nor Akunq, including biological treatment. Hence, KfW contributes to the following target areas of the Protocol: I, II, III, IV, XI, XIV, XVIII and XX.

The World Bank (WB): WB is one of the key supporters of water sector reform in Armenia. Actually the water sector reforms in the country started with the “Towards Integrated Water Resources Management Program” project in 1999-2001, which proposed a comprehensive set of reforms in legal and institutional framework of water management in the country and set a pathway of introduction of principles of IWRM. Afterwards, WB supported several water supply and wastewater management, as well as watershed management projects in the country. Currently WB supports Municipal Water Project, Update of IWRM study, as well as plans to implement a Water Tariff Study in 2015. WB supported projects contribute to target areas I, II, III, IV, XI, XIV, and XIX of the Protocol.

Thus, for all selected 9 priority target areas for Armenia there are both on-going and planned donor supported activities, which will contribute to progress towards the implementation of the Action Plan and the established target areas and measures once the Government of Armenia officially adopts them.

5. Input to the Proposed Action Plan

Table below provides an input to the action plan to ensure sustainable water management, access to safe drinking water and adequate sanitation in Armenia. It is based on the draft targets of the Protocol on Water and Health presented in Chapter 2 of this report, and phased program of measures of the National Water Program of Armenia analyzed in Chapter 3 of this report.

Though Armenia has not yet ratified the UNECE Protocol on Water and Health, the proposed Action Plan will help Armenia to comply with the provisions of the Protocol, at the same fulfilling the requirements of the national legislation, and particularly measures outlined in the National Water Program of Armenia. To show the linkage with the national requirements, the table includes the corresponding issues of the National Water Program for each target area, which are addressed respective short-, medium- and long-term measures.

The table also includes very rough estimate of the costs for implementing targets and identifies the possible funding source, taking into consideration the analysis of donor projects in respective target areas, conducted in Chapter 4 of this report. It should be noted that the estimated rough budgets are only indicative, and particularly for large infrastructure projects detailed pre-feasibility evaluations will be required to have more accurate assessment of the required budget.

Table 3: Proposed Action Plan to ensure sustainable water management, access to safe drinking water and adequate sanitation in Armenia

Area	Target	Proposed Measure	Period	Linkage to NWP Issue ³	Responsible Agency	Budget Scale ⁴	Potential Funding ⁵
I	Quality of drinking water supplied	Develop methodology and legal basis for water safety plans, taking WHO recommendations into account	By 2016	Elaboration and enforcement of water quality standards/ norms	MOH	1	State budget, ADB, EBRD, USAID, JICA, KfW, WB
				Determination and maintenance of aquatic ecosystem protection zones			
				Improvement of water supply and waste water collection services			
II	Reduction of the scale of outbreaks and incidents of water related diseases	Strengthen systems for surveillance of, and response to, water-related diseases in accordance with Government Decision 1913-N of 29 December 2011	By 2015	Elaboration and enforcement of water quality standards/ norms	MOH	1	State budget, ADB, EBRD, OSCE, USAID, JICA, KfW, WB
				Determination and maintenance of aquatic ecosystem protection zones			
				Improvement of water supply and waste water collection services			
III	Access to drinking water	Assess the drinking water supply situation in the 560 communities not served by water companies	By 2015	Improvement of water supply and waste water collection services	MTA, WSCs	2	State budget, ADB, EBRD, EU/EC, OECD, USAID, JICA, KfW, WB
		Rehabilitation of 5 drinking water treatment plants	By 2018	Improvement of water supply and waste water collection services	MTA, WSCs	5	State budget, ADB, EBRD, USAID, JICA, KfW, WB
		Construction of 5 plants to treat surface water for drinking purposes	By 2020	Improvement of water supply and waste water collection services	MTA, WSCs	5	State budget, ADB, EBRD, USAID, JICA, KfW, WB
		Development and implementation of programs to improve drinking water supplies in educational facilities	By 2020	Improvement of water supply and waste water collection services	MEDS, MTA	2	State budget, ADB, EBRD, EU/EC, OECD, USAID, JICA, KfW, WB
IV	Access to sanitation	Reconstruction and upgrading of "Aeratsia" wastewater treatment plant in Yerevan	By 2016	Improvement of water supply and waste water collection services	MTA, Yerevan Municipality	5	State budget, ADB, EBRD, OECD, USAID, JICA, KfW, Yerevan municipality
		Construction of wastewater treatment plants and improvement of sanitation networks	By 2016 ⁶ and by 2020 ⁷	Improvement of water supply and waste water collection services	MTA, WSCs	5	State budget, ADB, EBRD, UNDP, USAID, JICA, KfW, WB

³) For each priority water management issue the phased program of measures of the National Water Program includes corresponding short-, medium- and long-term measure.

⁴) Very rough budget of the measures is calculated using the following scale: 1 – less than 50,000 USD; 2 – from 50,000 USD to 200,000 USD; 3 – from 200,000 USD to 500,000 USD; 4 – 500,000 USD to 1 mln USD; and 5 more than 1 mln USD.

⁵) Includes possible funding from the state budget or co-implementation with the support of donors active in the respective field.

Area	Target	Proposed Measure	Period	Linkage to NWP Issue ³	Responsible Agency	Budget Scale ⁴	Potential Funding ⁵
		Development and approval of a national strategy for sanitation and wastewater treatment	By 2015	Implementation of water quality management	MTA	2	State budget, ADB, EBRD, OECD, UNDP, USAID, JICA, KfW, WB
				Improvement of water supply and waste water collection services			
		Assess situation in 560 rural communities not covered by water supply companies	By 2015	Improvement of water supply and waste water collection services	MTA	2	State budget, ADB, EBRD, OECD, UNDP, USAID, JICA, KfW, WB
		Development and implementation of programs to improve sanitation in educational facilities	By 2020	Improvement of water supply and waste water collection services	MEDS, MTA	2	State budget, ADB, EBRD, OECD, UNDP, USAID, JICA, KfW, WB
XI	Quality of discharges of wastewater from wastewater treatment installations to waters within the scope of the Protocol	Inclusion of indicators for wastewater treatment in the criteria for evaluation of the operation of water supply companies	By 2016	Improvement of water supply and waste water collection services	MTA	1	State budget, EBRD, EU/EC, KfW, OECD, USAID, WB
		Assess the quality of water in specific basins according to the maximum allowable concentrations for wastewater discharges	By 2018 ⁸ and by 2020 ⁹	Implementation of water quality management	MNP, MTA	1	State budget, EBRD, EU/EC, KfW, USAID, WB
		Implement the system for monitoring the quality of discharged wastewater	By 2017	Implementation of water quality management	MNP, MTA	3	State budget, EBRD, EU/EC, KfW, USAID, WB
XIV	Quality of waters, which are used as sources of drinking water	Construction and rehabilitation of treatment facilities of drinking water supplied from drinking water source	By 2020	Improvement of water supply and waste water collection services	MTA, WSCs	4	State budget, ADB, JICA, KfW, WB
		Ensure the quality of waters, which are used as sources of drinking water for communities not served by water supply companies, in compliance with national standards	By 2018	Implementation of water quality management	MTA, WSCs	3	State budget, ADB, JICA, KfW, WB
				Elaboration and enforcement of water quality standards/ norms			
		Determination and maintenance of aquatic ecosystem protection zones					
XVIII	Identification and remediation of	Optimize the network of monitoring points for the quantity and quality of	By 2017	Development of new programs for monitoring of surface and ground	MNP	3	State budget, EBRD, EU/EC, OSCE, OECD,

⁶) In Dilijan and Jermuk cities.

⁷) In 3 additional cities.

⁸) In 1 pilot basin.

⁹) In 2 other basins.

Area	Target	Proposed Measure	Period	Linkage to NWP Issue ³	Responsible Agency	Budget Scale ⁴	Potential Funding ⁵
	particularly contaminated sites	water resources		water resources			UNDP, GEF, USAID, KfW
XIX	Effectiveness of systems for the management, development and protection and use of water resources	Clarify the roles and responsibilities of water sector institutions	By 2016	Clarification of roles and responsibilities of the water sector institutions	Government	1	State budget, EU/EC, OECD, UNDP, GEF, USAID, JICA, WB
		Ensure a unified legal basis and mechanisms for information exchange among the stakeholder institutions in order to strengthen the SWC system	By 2015	Development of the State Water Cadaster	MNP	1	State budget, EU/EC, UNDP, GEF, USAID, WB
		Establish the legislative basis for the mandate and operations of the River Basin Management Councils	By 2018	Improvement of public awareness and participation in the water sector management process	MNP	1	State budget EU/EC, UNDP, GEF, USAID, WB
		Strengthen the management functions of the River Basin Management Authorities by building their capacities	By 2017	Development of the BMOs	MNP	2	State budget, EU/EC, OSCE, OECD, UNDP, GEF, USAID, JICA, WB
				Development of plans for integrated water resources management			
		Conduct hydro-geological studies and analyses of groundwater resources and classify these resources by national water reserve and usable water resources	By 2016 ¹⁰ and by 2018 ¹¹	Assessment of water resources and water reserve components	MNP, MENR	3	State budget EU/EC, OSCE, UNDP, GEF, USAID, JICA, WB
		Develop an action plan to improve aquatic ecosystems	By 2020	Determination and maintenance of aquatic ecosystem protection zones	MNP	1	State budget EU/EC, OSCE, UNDP, GEF, USAID, JICA, WB
Establishment of a registry for water management systems	By 2018	Development of the State Water Cadaster	MTA	2	EU/EC, OSCE, UNDP, GEF, USAID, WB		
XX	Frequency of publication of information on the quality of drinking water supplied and of other waters relevant to the Protocol	Ensure access of the public to the national reports under the Water and Health Protocol and publications on drinking water quality	By 2015	Improvement of public awareness and participation in the water sector management process	MNP, MTA, MOH	1	State budget, USAID, JICA, KfW

¹⁰⁾ For Ararat valley.

¹¹⁾ For the whole country.

6. Conclusions

- Though Armenia has not yet ratified the UNECE Protocol on Water and Health, the country intensively works with the Secretariat and participates in the reporting mechanism. The report “Input to Roadmap for Ratification of the UNECE Protocol on Water and Health by Armenia”, prepared within UNECE-FinWaterWei project, shows that Armenia will greatly benefit from the ratification of the Protocol, given that implementation of the principles and approaches of the Protocol, which are fully in line with the Armenian legislation, will increase the national capacity to manage the water resources of the country, including protection of water ecosystems, and prevention, control and reduction of water-related diseases. Also, the ratification of the Protocol will help Armenia to implement many provisions, which are already required by the water legislation of the country, and where the progress sometimes lags.
- By becoming Party to the Protocol, Armenia will be required to officially adopt targets and targets dates and a comprehensive action plan to achieve those targets. This technical report and other outputs of the current assistance project will greatly assist in that task. Firstly, it can help to ensure sustainable water management, access to safe drinking water and adequate sanitation in Armenia, and later on, after ratifying the Protocol, it will provide the basis for continuous monitoring and evaluation of compliance with the Protocol.
- As the report shows all measures proposed in the Action Plan are closely linked to various priority issues in the phased program of measures of the National Water Program of Armenia, and at the same time many donor-funded projects are already working and plan to continue works in respective target areas prioritized in the country.

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