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The Eighth Environment for Europe Ministerial Conference: Astana Water Action

Draft final report on the implementation of the Astana Water Action: fostering progress towards improved water management

Note by the secretariat with support from a consultant*

Summary

At the Seventh Environment for Europe Ministerial Conference (Astana, 21–23 September 2011) ministers endorsed the Astana Water Action (ECE/ASTANA.CONF/2011/5) and welcomed the initiatives launched by interested countries and organizations during the Conference aimed at improving water management and strengthening transboundary water cooperation. They invited countries and other actors to implement the Astana Water Action and to report progress to the United Nations Economic Commission for Europe Committee on Environmental Policy (ECE/ASTANA.CONF/2011/2/Add.1, para. 8).

At the twentieth session of the Committee on Environmental Policy (Geneva, 28–31 October 2014), countries and organizations participating in the Astana Water Action were invited to report on their progress to the Committee at its special session in February 2016 (ECE/CEP/2014/2, paras. 68 and 98 (ee) (ii)). The present final report was developed taking into account the responses received from the Astana Water Action stakeholders.

The Committee will be invited to consider the draft report with a view to submitting it to the Eighth Environment for Europe Ministerial Conference (Batumi, Georgia, 8–10 June 2016).

* The document was submitted on the above date owing to the need to consult with stakeholders.

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Introduction

1. The Astana Water Action (ECE/ASTANA.CONF/2011/5) is a collection of actions for improving the status of water and water-related ecosystems through their sustainable management. One of the objectives of this initiative was to provide suggestions for concrete actions Governments could take to better manage their water resources according to the local, national and/or regional challenges they faced, also including issues that were not currently being addressed. Another objective was to provide arguments for improving Governments' funding basis for water management from various sources. The active implementation, review and reporting period took place over five years, between 2011 and 2016. Looking towards the future, the Astana Water Action (AWA) remains available for interested countries and organizations to continue using according to their needs. A dedicated website was developed to promote the initiative and facilitate its use (http://www.unece.org/env/awa.html).

2. Twenty-one countries and four organizations committed to implement 78 actions with a view to fulfilling AWA actions[1]. These are: Austria, Azerbaijan, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Finland, Georgia, Germany, Hungary, Italy, Montenegro, Portugal, Republic of Moldova, Romania, Serbia, Switzerland, Ukraine, United States of America and Uzbekistan, as well as the Environmental Action Programme (EAP) Task Force under the Organization for Economic Cooperation and Development (OECD), the International Environmental Association of River Keepers (Eco-TIRAS), the International Network of Basin Organizations (INBO) and the United Nations Economic Commission for Europe (ECE).

3. Registered actions to which countries and organizations committed in the AWA framework are available on the AWA website (see annex I for an overview). In addition, a compilation of the activities that were presented at the Astana Ministerial Conference is available in document ECE/ASTANA.CONF/2011/INF.40.

4. At its eighteenth session (Geneva, 17–20 April 2012), the Committee on Environmental Policy invited delegations to report on progress in implementing actions at the initiative's mid-way point. This report (ECE/CEP/2013/9) was presented at the Committee's nineteenth session (Geneva, 22–25 October 2013).

5. In the mid-term review, responses were received from 14 countries and 4 organizations and reflected progress on 62 of the 78 actions (80 per cent) that had been committed to within the AWA framework.

6. At the twentieth session of the Committee on Environmental Policy (Geneva, 28–31 October 2014), the stakeholders were invited to submit a final progress report to the Committee's special session in February 2016. As a preliminary step, the ECE secretariat, in consultation with the Bureaux of the Committee and of the Meeting of the Parties to the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention), prepared a template for reporting (see annex II).

7. The final report was developed taking into account the responses received from 18 countries and 4 organizations. Sixteen countries and four organizations submitted progress reports on their actions for the final report. Two countries, Bosnia and Herzegovina and Romania, did not submit a final report, but their responses for the 2013

[1] In the present document as well as past AWA documents, the actions referring to ECE/ASTANA.CONF/2011/5 are called "AWA actions" and the actions that were commitment by countries and other stakeholders are called "actions".

mid-term review were used, where appropriate. In cases where the completed activity was reported in the mid-term review (i.e., both actions by the United States and one each by the Czech Republic and INBO), these responses were considered as part of the final review count. Montenegro, Ukraine and Uzbekistan were the only countries for which a response was not received for either the mid-term review or the final report.

8. The final report reflects the progress made on 73 of the 78 actions (94 per cent) implemented within the AWA framework. The five actions not represented are those committed to by Montenegro, Ukraine and Uzbekistan. Most countries reported on all the actions they committed to undertake, but some questionnaires were only partially completed.

9. The report summarizes the progress made during the AWA period from 2011 to 2016 and identifies progress made and lessons learned. Examples are provided to illustrate achievements, challenges and lessons learned. The document also summarizes the views expressed by countries on the usefulness and planned follow-up activities after the AWA period ends, as well as final thoughts on the AWA as a whole. The final report concludes with questions proposed for discussion by the Committee on Environmental Policy.

I. Progress achieved

10. At the end of the official review period for AWA implementation, of the 73 actions that were reported on, 26 were completed, 46 remain in progress and 1 was not completed (see figure 1). Given the complexity of some of the actions, success within the review time frame would have been difficult in any case. From the reports of the participating countries and organizations, it is quite clear that those actions that are still in progress will continue to move forward and be completed.

11. Numerous actions focused on implementing European Union directives (mainly the European Union Water Framework[2] and Floods Directives[3]), international conventions and other international legal instruments. Several innovative initiatives have also been undertaken, for example, regarding securing minimum environmental flow, ecosystem restoration, climate change adaptation, or elimination of micropollutants. The actions contributed to improving water quality, increasing preparedness for extreme weather events and climate change, protecting human health and ecosystems and improving transboundary cooperation.

12. In 2011, countries and organizations indicated which AWA actions they would fulfil through carrying out the actions that they committed to implement within the AWA framework. The AWA actions are divided into three sections:

I. General actions;

II. Actions related to sustainable management of water and water-related ecosystems;

III. Actions related to sustainable management of water and greening the economy.

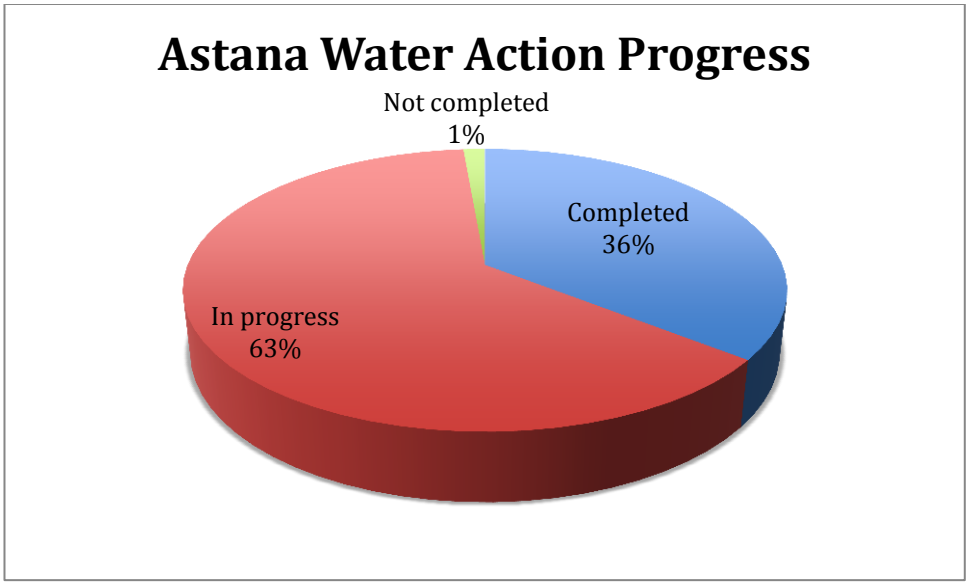
[2] Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy.

[3] Directive 2007/60/EC of the European Parliament and of the Council of 23 October 2007 on the assessment and management of flood risks.

These categories were also used by countries in reporting, and are reflected in the analysis of their implementation in the present report (see sects. A-C below). In addition, within each category, actions were structured according to questions for discussion at the Astana Conference (see ECE/ASTANA.CONF/2011/1, annex); these questions have been included as subheadings in sections A to C below.

13. In 2013, countries and organizations reported on their progress for the mid-term review on 62 actions[4]: 12 were general actions; 54 were actions on sustainable management of water and water-related ecosystems; and 2 were actions related to sustainable management of water and greening the economy. Thus, because some countries assigned their actions to more than one topic or category, some actions were reported on under several sections in the mid-term review. This is no different for the present report where, 73 actions were reported on: 15 actions related to general actions; 69 actions related to sustainable management of water and water-related ecosystems; and 5 actions related to sustainable management of water and greening the economy.

Figure 1
Overall progress in implementing actions committed to in the Astana Water Action



A. General actions

14. Eight countries (Croatia, Czech Republic, Georgia, Germany, Hungary, Italy, Portugal and Switzerland) and two organizations (EAP Task Force and ECE) reported on 15 activities that they described as implementing general actions in the framework of AWA. These primarily focused on promoting or implementing integrated water resources management (Czech Republic, Portugal and Switzerland), National Policy Dialogues (Georgia and ECE) and developing management plans (Croatia, Hungary and Italy), among others. The majority of these actions were also identified by the participants as being

[4] Several committed actions were at the same time general and/or actions on sustainable management of water and water-related ecosystems, and/or actions related to sustainable management of water and greening the economy.

implementing AWA actions related to the other two categories, detailed in sections B and C below; therefore they will be focused on in those sections.

15. Germany and Switzerland both had actions that they described as relating wholly to AWA actions of a general nature and not related to any other category within the AWA. Germany, for example, developed a Training and Competence Centre for the Croatian water sector, including "train the trainer" courses on issues like sewer management, controlling performance of wastewater treatment plans and leakage detection. Switzerland worked on integrated flood prevention, which involved carrying out dialogues in relation to public and private (insurance) tasks in relation to natural hazards, developing an improved flood forecasting system and developing flood prevention projects in the Alpenrhein and Rhone basins.

B. Sustainable management of water and water-related ecosystems

1. Which policies proved to be effective to value and protect water-related ecosystems, including payment for ecosystem services? What are the main obstacles and gaps?

Countries made significant progress in implementing their AWA commitments with regard to sustainable management of water and water-related ecosystems through implementation of integrated water resources management, river basin management and planning, protecting and restoring ecosystems and the monitoring, collection and analysis of water-related data and information.

16. Thematically speaking, by far the most actions (35) were carried out by participants to implement AWA actions in category II, the sustainable management of water and water-related ecosystems. These actions were carried out by 14 countries and 2 organizations.[5] While less than half of the actions have been completed, significant progress has been made in terms of implementing integrated water resources management, river basin management and planning, protecting and restoring ecosystems and the monitoring, collection and analysis of water-related data and information.

17. Almost a quarter of the actions focused on integrated water resources management. This ranged from the promotion of the concept by the Czech Republic and Switzerland, to funding or implementing National Policy Dialogues on the topic (Finland, Georgia) to implementing the concept itself through integrated water resources management plans (Austria, Portugal and the Republic of Moldova, with Eco-TIRAS supporting activities in the Dniester River Basin). These actions helped facilitate compliance with the European Union Water Framework Directive. Of the eight actions related to integrated water resources management, half were completed and the other half are still in progress.

18. With regard to water quality, Austria upgraded urban wastewater treatment plants, and Switzerland mitigated micropollutants from point and diffuse sources. Other projects undertaken by Estonia (to improve the status of surface waters), Portugal (to improve the quality of international watercourses) and Romania (to reduce nutrient discharges) are still in progress. Several stakeholders (Czech Republic, Italy, Eco-TIRAS) improved the monitoring of water quality, which in the case of the Czech Republic will then be used to evaluate the effectiveness of the measures that have been implemented. In terms of

[5] Austria, Azerbaijan, Croatia, Czech Republic, Estonia, Finland, Georgia, Hungary, Italy, Portugal, Republic of Moldova, Romania, Serbia and Switzerland, the EAP Task Force and Eco-TIRAS.

remediation of hydromorphological alterations, Switzerland developed a strategic plan with its cantons.

19. Five actions were aimed to protect environmental flows and water-related ecosystems. The Czech Republic formulated a minimal environmental flow requirement for streams within its Water Act, while Italy continues to work on this in the Po and Arno River basins. Eco-TIRAS has been advocating for such a process to take place in the Dniester River. In addition, the Republic of Moldova continues to make progress in protecting water-related ecosystems, such as the Lower Dniester and Unguri-Golishnitsa Ramsar sites, through the development of management plans. Hungary focused on increasing its monitoring capacity for wetland habitats and their communities through the Hungarian Biodiversity Monitoring System.

20. Several additional actions were completed that should be noted. Austria committed to producing 34 per cent of its energy use through renewables by 2020 as part of the European Union Climate and Energy Package. Croatia and Hungary completed basin management plans related to the Danube River and Finland promoted the efficient use of water in both production and consumption. On the organizational side, the EAP Task Force conducted National Policy Dialogues on the use of economic instruments as well as strengthening institutions for water supply and sanitation by developing sustainable business models in small towns and rural settlements in Kazakhstan and supporting national regulators to strengthen economic regulation of water supply and sanitation in Armenia, the Republic of Moldova and Tajikistan.

2. What policies proved to be effective in addressing human health issues related to water quality and quantity? What are the main obstacles and gaps?

While very few of the actions under the human health segment of the AWA were completed, progress was made through the construction and/or improvement of water supply and wastewater treatment systems, remediation of contaminated sites and implementation of the Protocol on Water and Health.

21. Seven countries (Austria, Bulgaria, Croatia, Czech Republic, Hungary, Republic of Moldova and Romania) and one organization (ECE) reported on 13 actions that had been or were in the process of being carried out with a focus on addressing issues of human health as they relate to water quantity and quality.

22. Only 2 of the 13 actions have been completed, while the rest remain works in progress. Austria put in place an advanced public water supply and wastewater treatment network that covers 90 per cent and 94.5 per cent of the national population, respectively. Austria is also looking towards the future, and is already considering how to ensure sufficient financial means to maintain and rehabilitate the water supply and wastewater treatment infrastructure for the longer term. The Czech Republic undertook the other completed action, which confirmed that the polluter pays principle is indeed being applied in the country.

23. The rest of the actions implementing AWA actions on human health are all in progress. While not completed, the plans of Bulgaria to provide investment in environmentally friendly sanitation and wastewater treatment is well on track, with 11 completed wastewater and sewerage infrastructure projects and 77 in progress.

24. In Croatia the plan to introduce of the principle of cost recovery for water services is ongoing. Water service providers can fix the water price in consultation with mayors. The

decision on the price of water services, together with an analysis of costs, must then be submitted to the Council for Water Services for ex post control of its legality.

25. In addition to its completed activity, the Czech Republic also has another action in this area that is still under way, which aims at improving water quality and quantity protection throughout the country. The action has shown progress, but the goal is planned to be reached through the river basin management plans in their second planning cycle between 2016 and 2021. At the time of writing, 94.2 per cent of the population was connected to the water supply network, 83.9 per cent were connected to the sewerage system and 96.9 per cent of wastewater was treated. The Republic of Moldova has also shown progress in the implementation of the Protocol on Water and Health, has elaborated an action plan for achieving its targets by 2025 and regularly shares experience with other Parties-

26. Hungary is progressing in the implementation of both their National Environmental Remediation Programme and National Drinking Water Source Protection Programme. These programmes were started in the late 1990s and continue to gain ground in achieving their goals.

3. What are the priorities/challenges in adapting the management of water and water-related ecosystems to extreme weather events and to climate change?

The majority of the actions found under the climate change thematic area of AWA were completed. These focused on climate change adaptation strategies, integrating climate change into integrated water resources management plans and the assessment of the future impacts of climate change.

27. Three countries (Republic of Moldova, Switzerland and United States) and two organizations (Eco-TIRAS and ECE) reported on 15 actions related to water management adaptation to weather events and climate change with the AWA framework. Most of the actions were in the form of climate change adaptation strategies or initiatives to integrate climate change adaptation into integrated water resources management, or to assess the future impacts of climate change. This thematic focus of the AWA had by far the highest implementation rate: more than half of the actions in this area have been completed (8 out of 15).

28. Finland was able to complete both of its actions related to climate change. The first was the financing of the project "Promoting cooperation to adapt to climate change in the Chu-Talas basin" (Phase I), which took place between 2010 and 2015 and enabled the commencement of cooperation between Kyrgyzstan and Kazakhstan related to climate change adaptation. This was the first such cooperation of its kind between the two countries and resulted in the assessment of climate change impacts on water resources in the transboundary Chu-Talas River Basin. On a national level, Finland prepared flood risk managements plans for 21 flood risk areas in Finland and created more than 100 maps of flood prone areas in the country.

29. In developing climate resilient flood and flash flood management practices, Georgia introduced flood-plain development policy, community-based flood insurance schemes for high-risk villages and a model to assess the socioeconomic impacts of flooding in the Rioni River Basin. In addition, early warning flood forecasting systems have started to be implemented using different modelling components. This action is very linked to the country's second action in this area, preparing for extreme weather events, in which the

automatic meteorological stations and gauges were installed as well as hydrological gauges in conjunction with automatic hydrological data-processing software.

30. Within the "Climate Change and Hydrology in Switzerland" project, a major study was carried out on the effects of climate change on the water balance of the country by 2100. With this information, a first part of the national climate change adaptation strategy was adopted in 2012 and in 2013 an action plan, which takes into account agriculture, forestry, natural hazard management, energy, tourism, biodiversity, health and spatial development. A pilot programme was also launched in 2013 with six model projects to reduce the risks of climate change and increase adaptation capacities, in particular in the areas of management of summer drought and water scarcity.

31. Germany carried out a study on climate change impacts on the Danube River Basin, which was then used as a basis for the development of the climate change adaptation strategy for the Danube by the International Commission for the Protection of the Danube. The United States provided assistance in carrying out the analysis of the impact of global climate change in the Aral Sea Basin, which took into account many factors, such as rates of snowpack and glacier melt, annual precipitation and aquifer depletion and/or replenishment as well as other similar important determinants of the region's water resource availability.

32. Actions still in progress include the integration of climate change adaptation and integrated water resources management in the Czech Republic, which is being implemented in the country's river basin management plans, the introduction of non-structural and more sustainable regulations in flood risk management in Hungary, which are currently being elaborated, and the creation of a Commission for the Prevention, Monitoring and Follow-up of the Effects of Drought and Climate Change by Portugal, which will explore the development of a drought warning and management system. ECE continues to promote transboundary cooperation in adaptation to climate change through its Global Network of Transboundary Basins Working on Adaptation to Climate Change, coordinated together with INBO, which enables exchange of experience between experts and supports pilot projects to enhance countries' capacity to adapt to climate change in several basins in the ECE region.

4. What are the experiences and lessons learned from the cooperation in transboundary basins to improve water quality, manage water quantity and protect ecosystems?

Transboundary water management is a long process that is both political and technical in nature and the actions within the AWA framework, 20 of them that will go on for many years beyond the AWA, focused on developing transboundary management plans, negotiating agreements and engaging stakeholders.

33. Under the thematic focus of cooperation in transboundary basins to improve water quality, manage water quantity and protect ecosystems, nine countries (Bosnia and Herzegovina, Czech Republic, Germany, Hungary, Portugal, Republic of Moldova, Romania, Serbia and United States) and three organizations (ECE, Eco-TIRAS and INBO) reported on a total of 20 actions that concentrated primarily on developing transboundary water management frameworks for countries with shared waters. This was the thematic area with the least amount of completed actions, but this comes as no surprise as the processes to develop cooperation between riparian nations take a long time to mature; therefore a focus of this section will be on the achievements made, which were many.

34. Germany supported transboundary water resources management in South-Eastern Europe under the Petersberg Phase II/Athens Declaration Process. Over 150 stakeholder

organizations have benefitted from regional round tables, multi-stakeholder dialogues, targeted capacity-building workshops and study visits, preparation of assessments, surveys and policy documents.

35. The United States completed their action of assisting basin States to carry out an economic analysis of the ramification of optimized water-energy resource utilization in the Syr Darya and Amu Darya River Basins. The activity was able to provide a broad inventory of the direct and indirect economic interests impacted by various sectors in the region's water resource management practices. The analysis that emerged from the assistance resulted in being able to demonstrate the wider economic benefits to be gained from cooperation on water and energy.

36. INBO completed both of its actions related to transboundary waters. In 2012, at the Sixth World Water Forum, INBO and its partners (i.e., ECE, the French Development Agency, the Global Environment Facility, the Global Water Partnership and the United Nations Educational, Scientific and Cultural Organization) published *The Handbook for Integrated Water Resources Management in Transboundary Basins of Rivers, Lakes and Aquifers*. After the original English version of the Handbook, there are now versions in French, Spanish, Russian, Arabic and Chinese. Also in 2012, as a second action, INBO launched the "Pact for Better Basin Management", which a variety of types of organizations (basin organizations, NGOs, local authorities, etc.) can sign up for.

37. Hungary is currently in the process of elaborating new transboundary water agreements with both Serbia and Slovakia, recognizing that some of their current agreements need to be revised to bring them in line with the latest developments in international water law. Portugal and Spain continue to work together to develop river basin management plans on their shared waters, and have agreed to common core elements of what those plans would address and to a methodology on how to move forward. Serbia has progressed in negotiations for transboundary agreements with Bosnia and Herzegovina, Croatia, Hungary and Romania. With regard to the Sava River Basin, Bosnia and Herzegovina, Croatia, Serbia and Slovenia have developed the first Sava River Basin Management Plan and will soon begin its implementation.

38. While there were major breakthroughs with the Dniester River in the first half of the AWA period, some of this progress has come to a halt because of other political priorities in the region. The bilateral Treaty on Cooperation on the Conservation and Sustainable Development of the Dniester River Basin between the Republic of Moldova and Ukraine has not yet entered into force due to the lack of the necessary ratification by Ukraine.

39. One of the more significant breakthroughs for international water law was the entry into force of the amendment of the ECE Water Convention, which opens up membership in the Convention to all United Nations Member States. In late 2015, the last ratification of the amendment was completed so that countries from every region of the world may now accede to the Convention.

C. Sustainable management of water and greening the economy

1. What policy mixes and practical tools, such as integrated water resources management, pricing, standards and water users associations, can be most effective to improve water efficiency by different water users, especially in agriculture, households and industrial operations?

For both thematic areas under the greening the economy thematic rubric of AWA, five actions were carried out, most of them completed, with a focus on increasing water efficiency, developing climate change adaptation strategies and implementing cost-recovery models in water resources services provision.

40. Four countries (Croatia, Finland, Italy and Switzerland) and one organization (Eco-TIRAS) reported on their actions related to policy mixes and practical tools to improve water efficiency. Of the five actions, Finland and Switzerland have completed theirs. Finland has, beginning in 2011, installed new water meters in both new and old apartments, which aimed to save both water and energy.

41. The actions of Croatia, Italy and Eco-TIRAS under this theme are all still in progress. To improve water use in the agricultural sector of the Po River Basin, Italy introduced Territorial Water Balance Plans, which aim to improve water use efficiency. Guidelines for the development of the Plans have been established by a Focus Group and the work is moving towards its completion. Eco-TIRAS continues to work on improving ecosystem resilience through the elaboration of monographs on climate change adaptation in the Dniester River, as well as carrying out educational programmes on the issue.

2. How can we encourage investments to take into account the impacts on water quantity and water quality, energy and resource efficiency and vulnerable populations?

42. Finland was the only participant within the AWA framework to commit to encouraging investments to take into account the impacts of water quantity and quality. Through the successful completion of the action to promote efficiency of water use in production and consumption, Finland, since 2011, made it mandatory to install water meters in all new apartments and, in 2013, water meters were installed in all old apartments. This has reduced the amount of water use nationwide.

II. Challenges and lessons learned

Main lessons learned:

- *Cooperation and coordination between stakeholders at the national level was a key to the success of the activities within AWA.*
- *Collection of and analysis of data is still a major hurdle in some countries where resources and capacities are not available to carry out those tasks.*
- *Lack of financial resources inhibited progress of some actions within the AWA framework.*
- *Prolonged political and social engagement related to actions proved to be a positive factor in ensuring the success of AWA activities.*
- *Political challenges, as well as reform processes, were sometimes a stumbling block to the success of AWA actions.*

43. The challenge that was most cited by the AWA member countries and organizations was that of coordination and cooperation. While mostly in reference to the coordination between national Government agencies or ministries (Azerbaijan, Estonia, Georgia, ECE, INBO) there was also mention of how important cooperation is between all stakeholders (Italy) and sectors involved in the initiatives, as well as working with other Governments in the case of transboundary waters (EAP Task Force). Countries like Portugal and Romania mentioned how positive results can be achieved when there is proper coordination. Both Azerbaijan and Switzerland noted that with integrated water resources management, coordination is especially required, but in some cases there are legal and institutional gaps that prevent such coordination from happening.

44. The collection and analysis of data was also mentioned as a significant challenge. For Azerbaijan, data collection and analysis took a lot of time, which slowed the process. For the Republic of Moldova and Serbia, lack of data made making plans difficult. Hungary cited a need for more research and development. The United States referred to lack of data in their own activities for AWA, although taking a slightly different angle in that the lack of data-sharing between countries creates obstacles for progress on different goals.

45. The inability to collect data and information is often a symptom of lack of capacity, another one of the challenges cited by four participating Governments. Azerbaijan, Bosnia and Herzegovina, Georgia and Serbia all noted that there are significant gaps in capacity within their Government agencies and ministries. This often had an adverse effect on the progress of AWA activities.

46. Financial resources, or a lack thereof, to carry out the projects and activities were another difficulty brought up by some countries, such as Austria, Finland, Hungary, Italy, Romania and Serbia. Reinforcing this, Austria also noted that having financial incentives, with appropriate advisory services, triggers action and progress on the goals.

47. One of the positive lessons learned from the AWA process was how prolonged political and social engagement among a diverse group of stakeholders, ensuring a platform for discussion, was a positive factor in the success of AWA activities (Hungary, Italy, Republic of Moldova and Romania).

48. Several countries and organizations noted political challenges as an obstacle. This ranged from unforeseen political stumbling blocks by Finland to the political instability of Ukraine that prevented advancement on certain AWA actions. As the EAP Task Force stated, unstable political leadership impacts progress.

49. There were a myriad of other responses regarding challenges and lessons learned from AWA implementation. Bulgaria, the Republic of Moldova and ECE all mentioned administrative hurdles to progress. Croatia, Estonia, Finland, Hungary and the EAP Task Force reported that water sector reform, which was a part of some of the AWA activities, was difficult, time-consuming and slowed down progress towards goals and targets. And within and related to that, the Republic of Moldova also cited the lack of clear roles and responsibilities of Government agencies as a negative factor. However, conversely, several countries observed that having well-defined programmes and plans of action and the setting of targets helps with envisaging goals and formulating a long-term strategy (Austria, Finland and Hungary).

III. Usefulness of the Astana Water Action

A. Strengthening political support

More than three-quarters of the responding participants viewed the AWA in a positive light, the main reasons being that it helped elevate the status of water bodies, it provided political support for water-related actions and reinforced ongoing processes within the scope of the European Union Water Framework Directive.

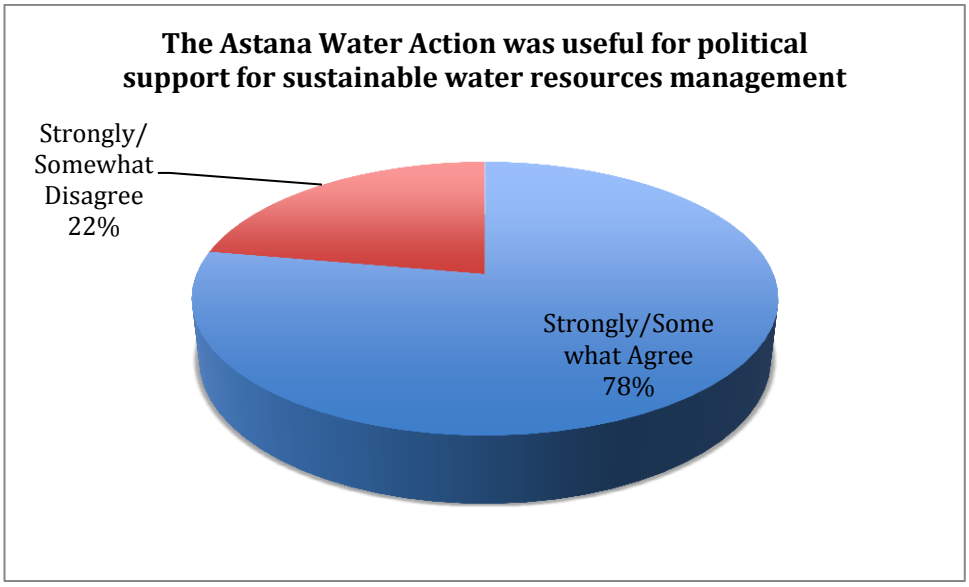
50. Overall, AWA participants believed that the initiative was useful in garnering political support for the sustainable management of water resources. More than three-quarters of those reporting conveyed a positive view of AWA in supporting activities at the national level. For those stakeholders that did not share this view, it was because there already was significant political support for water issues in their countries (see below).

51. Five countries (Azerbaijan, Estonia, Georgia, Hungary and the Republic of Moldova) and one organization (INBO) strongly contended that AWA reinforced momentum and support on the political level to address water issues. More specifically, both Azerbaijan and Georgia cited the usefulness of the AWA in promoting integrated water resources management and Estonia referred to how AWA was able to elevate the status of water-related bodies within the Government to a higher political level. Estonia, Georgia and Hungary all noted how activities under the initiative were able to strengthen and support ongoing European Union water processes.

52. AWA participants that reported on the initiative's usefulness in garnering political support for sustainable water resources management provided many justifications for their views. Both Italy and Switzerland commended the initiative as one that fostered the exchange of experience on a wide variety of subjects related to water, including monitoring, management and protection of water bodies. Hungary also believes that this exchange of experiences can include lessons of implementation. Georgia cited the positive effect of using AWA to carry out capacity-building among its government bodies. AWA also played a facilitative role, according to Hungary, with regard to gaining political and financial support. Serbia also mentioned this in its mid-term review. Croatia sees AWA as one support tool among many and said that it helps inspire progress towards the sustainable management of water resources. And, while Portugal said that its national efforts were primarily driven by European Union legislation, it noted that AWA reinforced implementation of the Water Framework Directive at the local, national and regional levels.

53. While in the mid-term review only the Czech Republic, Germany and Switzerland did not agree with the political usefulness of AWA, both Hungary and Finland also noted some concerns for its value in the final report. The reasons for this disagreement are twofold: (a) in some of these countries, there is already ample political support to carry out the activities included in AWA (Czech Republic, Germany and Hungary); and (b) the actions within the AWA framework had already been planned under either national-level or European Union-level plans and policies (Finland, Hungary and Switzerland).

Figure 2
Usefulness of Astana Water Action as a tool for political support to sustainable water resources management



B. Helping stakeholders to comply with international obligations

Some 80 per cent of stakeholders believed that AWA helped them to comply with international obligations by providing the basis for harmonization of national legislation with the European Union Water Framework Directive, the implementation of the ECE Water Convention and carrying out bilateral agreements between basin States.

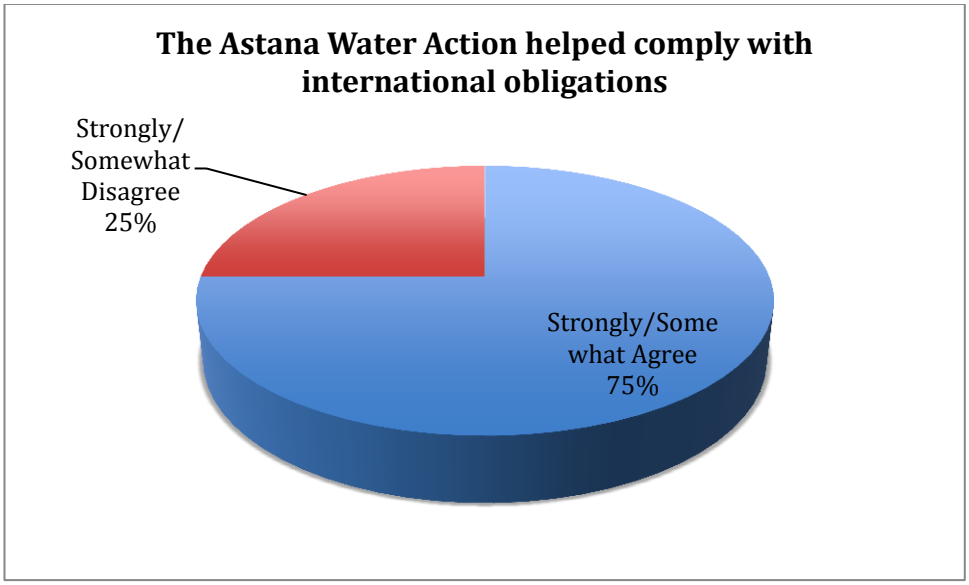
54. Participants' response to the question regarding whether AWA helped them with their international obligations was also overwhelmingly positive, with 80 per cent of respondents agreeing to some degree that AWA did indeed help them (see figure 3).

55. A third of the countries responded (Azerbaijan, Estonia, Georgia, Romania (2013) and Switzerland, including on one action for Hungary) that they "strongly agreed" that the initiative helped them comply with their international legal obligations. For example, Georgia believed that AWA helped to create a basis for harmonization of national water legislation with the European Union Water Framework Directive. Estonia concurred, stating that it helped the country bring water to a higher political level. Switzerland observed that AWA was entirely in line with the implementation of the ECE Water Convention and its Protocol on Water and Health. With regard to transboundary agreements, Azerbaijan described how their draft bilateral agreement with Georgia included several AWA principles and will be taken into consideration when cooperating with neighbouring countries in the future.

56. Of the seven other countries that also viewed AWA in a positive light in terms of helping them with their international obligations, almost all referred to how it assisted them in complying with or fulfilling European Union environmental legislation. This includes Bulgaria, Croatia, Finland, Hungary, Italy, Portugal and Serbia. Italy also specifically cited how AWA helped in addressing issues in international basins.

57. A third of countries (Austria, Czech Republic, Finland, Germany and Hungary) responding, at least partially for some of their actions, also cited that they slightly disagreed with the idea that AWA helped them with their international obligations, although very little detail was provided for their reasoning. Austria, however, cited several reasons why AWA did not necessarily enhance their capacity towards achieving their international obligations in that: (a) it had a long-standing tradition of water management policies; (b) there had been decades of work put into European legislation; and (c) the country was already involved in other international mechanisms, such as the Water Convention and the Convention on Cooperation for the Protection and Sustainable Use of the Danube River.

Figure 3
Usefulness of Astana Water Action for complying with international obligations



IV. Future steps and follow-up for implementation of the Astana Water Action

58. While the AWA implementation period runs through the end of 2015, this does not mean that the activities that were taken up by participating countries and organizations will stop with the final report. In the final questionnaire sent to participants, many reflected that momentum built during the implementation of AWA would be carried forward towards the future.

59. Azerbaijan, Croatia, the Czech Republic, Georgia, the Republic of Moldova, Romania, Serbia, Switzerland and Eco-TIRAS all stated that the period following AWA would now focus on implementation of the activities that were initiated. Among others, these activities include the Weather Index Insurance of Georgia, the National Water Strategy of Azerbaijan and integrated flood protection measures in Switzerland.

60. Another major focus of the years to come will be on transboundary waters. Hungary stated they would like to focus on negotiating new agreements with Serbia and Slovakia. Portugal voiced a desire to continue to work on its shared river basins with Spain. Georgia vowed to continue working with Azerbaijan and the Republic of Moldova committed to continue cooperation with Ukraine — noting that while it understood the difficulties right now for Ukraine it would continue to encourage the ratification by Ukraine of the Dniester

River Treaty. Romania noted in its 2013 mid-term review report how it would like to develop concrete projects with the Republic of Moldova and Ukraine on the Prut River. Serbia reported its plans for negotiating agreements with Bosnia and Herzegovina, Croatia and Romania. All four organizations involved in AWA (the EAP Task Force, Eco-TIRAS, INBO and ECE) also expressed their intention to promote transboundary issues in the future. While these initiatives are also inscribed within the framework of both the European Union Water Framework Directive and the ECE Water Convention, it is positive to see that AWA also helped the concept of cooperation forward.

61. Water quality as a focus of the future appeared in many countries' responses to the final survey. Austria said that it would make an additional effort in terms of remediation of contaminated water bodies and Estonia described its plans to protect the quality of its water bodies. Bulgaria and Estonia continue to plan to invest in wastewater treatment and purification.

62. Projects for future work at the river basin level seemed to vary from country to country. Bosnia and Herzegovina, Croatia and the Republic of Moldova want to develop river basin management plans, while the Czech Republic plans to approve theirs. All these countries then want to focus on their implementation. And Estonia would like to update its management plans.

63. In the international context, the Czech Republic, Finland, Germany and Italy all mentioned how they would like to continue their cooperation within international commissions and processes such as the European Union directives, the ECE Water Convention and the Athens Declaration.

64. Countries also want to focus on new investments needed in the future due to urbanization (Austria and Bulgaria), monitoring (Czech Republic, Hungary, Italy and Portugal), strengthening early warning systems and disaster risk reduction activities (Georgia), promoting best practices and sharing of information (Italy) and integrating different sectors to address problems of water scarcity (Switzerland).

65. The organizations have a slightly different emphasis in their perception of how they will move forward with the follow-up to the AWA in the future. For the EAP Task Force, attention will be given to emerging topics, such as the reform of subsidies that impair water policies, reallocation of water to more valuable uses and the economic benefits of transboundary management. Eco-TIRAS sees itself as focusing on supporting the entry into force of the Dniester Treaty and, at the national level, education for community-based organizations, monitoring and implementation of the Dniester River Basin Action Plan and the promotion of the implementation of adaptation to climate change in the Dniester River Basin. INBO wants to use its Pact for Better Basin Management to develop cooperation and support for integrated water resources management at the basin level. And ECE would like to continue the National Policy Dialogues and technical assistance to basins and regional organizations, but also focus on countries outside the ECE region with additional nexus assessments of basins, such as the Mekong and Niger, as well as promoting the ECE Water Convention in other parts of the world.

V. Conclusion

66. While there were claims from a number of countries that the actions that were undertaken during the Astana Water Action would have been carried out even without the initiative due to other international obligations (e.g., the European Union Water Framework Directive and the ECE Water Convention and its Protocol on Water and Health), it is clear from the responses of many participants, both countries and organizations alike, that there were useful aspects to AWA that included strengthening political, and sometimes financial,

support as well as helping countries further align themselves with their international obligations. In addition, the Astana Water Action provided a platform for participants to share and exchange information on the sustainable management of water resources.

67. With this final report comes the end of AWA. However, the actions that were started through this initiative do not end with the end of the AWA framework period. The great majority of the actions that were initiated through AWA will continue on beyond the end date using the momentum generated over the implementation period.

VI. Questions for discussion by the Committee on Environmental Policy

68. The Committee is invited to discuss the following questions:

(a) What was the added value of the Astana Water Action? Has it contributed to sustainable water management and transboundary water cooperation in the ECE region? How should progress achieved during the active AWA implementation, review and reporting period (2011–2016) be presented at the Batumi Ministerial Conference?;

(b) What lessons have been learned, both positive and negative, from the Astana Water Action experience, also for the development and implementation of future regional environmental policy instruments?;

(c) What were the main challenges facing the Astana Water Action? Were there lessons learned that can show how these can be overcome? Can these lessons be applied to different environmental thematic areas?;

(d) How can what has been learned from the Astana Water Action, both in terms of experiences and knowledge gained, be carried forward in future activities on sustainable water management and transboundary water cooperation in the region?

Annex I

Overview of commitments in the framework of the Astana Water Action*

1. **Actions by Austria**:

(a) Putting in place an ambitious urban wastewater treatment and drinking water supply programme nationwide;

(b) Implementation of IWRM: improvement of ecosystems through the restoration of river continuity and habitat connectivity;

(c) Enhancement of renewable energy production: refurbishment programme for small hydropower plants.

2. **Actions by Azerbaijan**: development of the National Water Strategy.

3. **Actions by Bosnia and Herzegovina**: adoption of the Sava River Basin Management Plan and Programme of Measures.

4. **Actions by Bulgaria**: investment in environmentally friendly sanitation and wastewater treatment, appropriate operation and maintenance.

5. **Actions by Croatia**:

(a) Development of a river basin management plan;

(b) Elaboration of an implementation plan for water utility directives;

(c) Introduction of "recovery of costs for water services" principle.

6. **Actions by the Czech Republic**:

(a) Promoting concept of IWRM;

(b) Water quality and quantity protection;

(c) Water quality and quantity monitoring and assessment;

(d) Guarantee of minimum environmental water flow in streams;

(e) Application of user-pays and polluter-pays principles;

(f) Access to safe water supply and sanitation and their sustainable pricing;

(g) Climate change adaptation and IWRM;

(h) Transboundary cooperation and IWRM.

7. **Actions by Estonia**: improvement of hydromorphological situation and ecological status of the surface waters.

8. **Actions by Finland**:

(a) Promoting the efficiency of water use in production and consumption;

(b) Promoting the National Policy Dialogues on IWRM and on water supply and sanitation in countries of Eastern Europe, the Caucasus and Central Asia. Support to the

* This overview from the mid-term review report (ECE/CEP/2013/9, annex I) is reproduced here for the convenience of decision makers.

pilot project on climate change adaptation in transboundary basins of countries of that subregion;

(c) Promoting IWRM, especially climate change adaptation and vulnerability assessment.

9. **Actions by Georgia**:

(a) Development of climate resilient flood and flash flood management practices to protect vulnerable communities of Georgia;

(b) Enhanced preparedness of Georgia against extreme weather events;

(c) National Policy Dialogue on IWRM.

10. **Actions by Germany**:

(a) Training and Competence Centre Karlovac;

(b) Climate change adaptation strategy for the Danube River Basin;

(c) Regional dialogue on transboundary water resources management in South-Eastern Europe.

11. **Actions by Hungary**:

(a) National Remediation Programme for Contaminated Sites;

(b) National Programme for the Protection of Drinking Water Sources;

(c) Introduction of non-structural and more sustainable measures in Hungarian flood risk management;

(d) Management and utilization plan supporting ecological baseline studies along the River Danube in the Gemenc and Béda-Karapancsa Region (2006–2011);

(e) Upgrading bilateral transboundary water agreements;

(f) Monitoring of wetland habitats and their communities.

12. **Actions by Italy**:

(a) Upgrade existing nationwide water monitoring networks in Italy;

(b) Define and monitor environmental flow in the Po River Basin district and the Arno River Basin;

(c) Improve utilization of water resources in the agricultural sector in the Po River Basin district.

13. **Actions by Montenegro**: Drin Basin/Drin Dialogue: Montenegrin National Consultation Meeting for the management of the Drin Basin.

14. **Actions by Portugal**:

(a) Project on environmental quality of international water courses natural reserves;

(b) Common integrated water resources management document between Portugal and Spain;

(c) Drought warning and management system.

15. **Actions by the Republic of Moldova**:

(a) Improvement of the role of landscapes in the formation of the water regime: protection of the Lower Dniester and Lower Prut wetland ecosystems by creation of the

Lower Dniester National Park and the Lower Prut Biosphere Reserve and initiation of the creation of the Lower Dniester transboundary protected area with Ukraine;

(b) Elaboration of the IWRM river basin plan;

(c) Ensuring implementation and maintenance of strict targets for the reduction of pollution from municipal industrial sources and discharge permits;

(d) Improvement of action plans for emergencies caused by industrial accidents;

(e) National Policy Dialogues on water;

(f) Implementation of the Protocol on Water and Health;

(g) Continuation of the implementation of pilot projects on adaptation to climate change in transboundary basins and use of the platform provided for the exchange of experience between projects within the framework of the ECE Water Convention;

(h) Ratification of the new bilateral Treaty on Cooperation on the Conservation and Sustainable Development of the Dniester River Basin with Ukraine.

16. **Actions by Romania**:

(a) Improvement of water resources quality by reducing nutrient discharges into water bodies;

(b) Implementation of the provisions of the bilateral transboundary waters agreement.

17. **Actions by Serbia**:

(a) Negotiations on transboundary water management agreements with neighbouring countries;

(b) Preparation and implementation of the national Danube River Basin Management Plan;

(c) Preparation and implementation of the Sava River Basin Management Plan.

18. **Actions by Switzerland**:

(a) Promoting the concept of IWRM;

(b) Water quality: mitigating micropollutants from point and diffuse sources;

(c) Remediation of hydromorphological alterations: strategic planning by the cantons;

(d) Climate change adaptation: adaptation strategy for water management;

(e) Integrated flood prevention.

19. **Actions by the United States of America**:

(a) Assistance provided for the carrying out of an analysis of the economic ramifications of optimized water-energy resource utilization in the Syr Darya and Amu Darya River Basins;

(b) Assistance provided for carrying out an analysis of the impact of global climate change on regional hydrology in the Aral Sea Basin.

20. **Actions by Ukraine**:

(a) Implementation of the Protocol on Water and Health in Ukraine;

(b) Development of curricula for water professionals.

21. **Actions by Uzbekistan**:

(a) Establishment of the new Ramsar site, Kuyumazar reservoir, on the territory of Uzbekistan;

(b) Establishment of the new Ramsar site, Tudakul reservoir, on the territory of Uzbekistan.

22. **Actions by the EAP Task Force**:

(a) Strengthening the economic and financial dimensions of water management, including adaptation to climate change;

(b) Strengthening institutions for water supply and sanitation;

(c) Assessing the water policies and institutions in Eastern Europe, the Caucasus and Central Asia.

23. **Actions by Eco-TIRAS**:

(a) Development of IWRM plans for the Dniester River Basin with an associated action programme;

(b) Promotion of regular biomonitoring of natural waters, based on macroinvertebrates/algae, for rapid, cost-effective assessment of the quality of water bodies;

(c) Application of the principle of environmental flow in rivers, ensuring the needs of the ecosystem needs/human health. Development of the use of payments for ecosystem services;

(d) Implementation of Dniester River transboundary cooperation.

24. **Actions by INBO**:

(a) Preparation of the *Handbook for Integrated Water Resources Management in Transboundary Basins of Rivers, Lakes and Aquifers*;[6]

(b) Preparation of a Pact concerning the water management at basin level and the commitment to implement basin management by basin organizations

25. **Actions by ECE**:

(a) Promoting cross-sectoral cooperation with the health, environment, agriculture, forestry, energy, industry and housing sectors;

(b) Development of transboundary water cooperation in the Dniester, Drin and Kura Basins and in Central Asian transboundary waters;

(c) Promoting transboundary cooperation in adaptation to climate change;

(d) Promoting the achievement of water-related Millennium Development Goals through the reform of the water sector and the development of concrete targets and target dates;

(e) Promoting the role of the ECE Water Convention beyond the ECE region at the global level.

[6] E-publication with the Global Water Partnership (March 2012). Available from http://www.inbo-news.org/ and http://www.gwp.org/.

Annex II

Template for reporting on the implementation of commitments made under the Astana Water Action*

The present template is aimed to harmonize the responses by the participating countries and organizations on progress made in implementing the committed actions under the framework of AWA.

This template should be filled in and submitted to the UNECE secretariat (efe@unece.org) as soon as possible and not later than Tuesday, 15 September 2015.

Information should be provided separately on each action included in the country commitments (please refer to the annex of the present document). Information should be provided through filling the template below for each of your committed actions:

1. Country/Organization:

2. Title of the action committed to in 2011 (see the annex)

3. Overview of progress made

   (a) Has the action been implemented?

   ☐ Yes / ☐ In progress / ☐ No

Please elaborate (up to 250 words):
.

   (b) What challenges were encountered during the implementation of the action? What lessons were learned?

Please elaborate (up to 250 words):

* This template was originally issued as an informal document, without formal editing. It has been reproduced here as received.

(c) What future steps, if any, are planned in relation to the action implementation*/follow up?*

Please elaborate (up to 250 words):

4. Usefulness of the Astana Water Action

Please indicate how strongly you agree or disagree with the following statements and provide an explanation, as appropriate.

(a) The Astana Water Action was useful to strengthen political support related to sustainable water management issues:

☐ Strongly agree / ☐ Somewhat agree / ☐ Somewhat disagree / ☐ Strongly disagree

Please elaborate (up to 250 words):

(b) The Astana Water Action has helped my country to comply with its international obligations:

☐ Strongly agree / ☐ Somewhat agree / ☐ Somewhat disagree / ☐ Strongly disagree

Please elaborate (up to 250 words):

5. Any final comment (if applicable)