

## **Special Regional Session: Achieving water security for Asia and the Pacific through sustainable water management**

**Session report, 15<sup>th</sup> January 2015**

### **Introduction**

The session was convened by ESCAP and UNOSD, and chaired by Jong-Soo Yoon, Director of the United Nations Office for Sustainable Development (UNOSD). He started introducing the role of the UNOSD in supporting sustainable development in developing countries, particularly through knowledge management. He highlighted the importance of the inclusion of a WASH goal within the SDGs proposal for the Post 2015 Agenda for the achievement of global sustainability, particularly for the Asia-Pacific region, which hold 40% of the world's population and is experimenting the fastest economic growth.

The chair introduced Hongpeng Liu, Chief of the Energy Security and Water Resources Section at ESCAP, who made an overview presentation on the current status and major challenges on water in the Asia-Pacific region. Climate change impacts, disaster risks and deficiencies in water and sanitation were identified as the main challenges for the region, as well as drivers of an emerging focus towards water security and Water-Energy-Food nexus approaches. Predictions show that climate change will strongly exacerbate the levels of water stress in the region, driving strong river flow variations, rainfall variability and increased occurrence of flood and drought events, with implications in the infrastructure, agricultural and health and social systems. Meanwhile, exposure of the population to natural hazards is getting higher as a result of more frequent and severe extreme events such as typhoons, which have increased the rate of economic losses up to 16 times since 1970. The rate of access to water supply in the region has successfully reached some 88%, while access to sanitation remains lower, 53%, with the weakest progress made in South West Asia. The focus to address these challenges is being put on the improvement of water management to guarantee water security, as well as on the adoption of a Water-Energy-Food nexus approach, uniting the forces of the three sectors to cope with the future population growth driven increasing demands for food, energy and water and their interconnections. Three examples of tools developed to support the implementation of these approaches were presented. First, the Asia Pacific Water Hotspots, aimed to identifying and mapping especially threatened areas with overlapping challenges. Second, a framework to evaluate national water security through indexes measuring five independent dimensions of water security: household, economic, urban and environmental security and resilience to water-related disasters. Third, the application of an integrated management approach through vertical integration of the various governance levels and horizontal integration across sectors.

Hongpeng Liu finished his intervention with a brief introduction to the cases to be presented by the panel, which was composed by the following distinguished participants:

- Janya Trairat, Director of Technology and Standard Division, Department of Water Resources, MONRE, Thailand
- Rodora Gamboa, Executive Director at the Maynilad Water Academy and Chair of the Philippine Water Partnership Philippines

- Jong-Ho Ahn, Korea Environment Institute (KEI), Korea
- Noppawan Boontham, Maejo University, Thailand

## **Regional cases**

The panellists presented the four cases of the session.

### ***National and local scale experiences in Thailand***

Thailand faces water supply challenges in the five dimensions of water security: drinking water supply for domestic use, especially in rural areas; water for irrigation, with only a 20% coverage; water for urban areas with the rapid urban expansion; water for economic development with rising future demands; and water for ecosystems and pollution control. Within a fragmented water management context, the government started a shift towards integration with the development of an Integrated Strategic Plan based on five pillars: involvement of different agencies, integration of forest, land and water resources, a river basin approach (with consideration of upstream, midstream and downstream users), a balanced budget allocation and participation of stakeholders at all levels through a River Basin Committee and networks. The plan was developed following a structured preparation process including problem detection, strategies and measures designing, grouping tactics and design of strategic short and long term solutions. The plan includes measures in five sections: rehabilitation of upstream areas, addressing of water shortage problems, protection and alleviation of flood disasters, addressing of water quality problems (eg. through treatment plant projects) and increase on the water management efficiency by reinforcing the institutional and legal frameworks (eg. the passing of a water law that has been 15 years waiting for approval).

At local level, awareness about the Bung Khong Long Wetland started under the influence of the Mekong River Commission, and a process of social management based on networking, stakeholder regulation and participation and social sanction mechanisms allowed the environmental restoration and reforestation of the area. There was outstanding recognition of the role of Ms. Kandaporn Chaipakdee, major of one a local municipalities and head of one of the working groups, who was awarded with 2013 Excellence on national environmental conservation MNRE prize.

### ***Sustainable Approaches for Drinking Water in Rural Area, Mea Moh District, Lampang Province, Thailand***

The Electricity Generating Authority of Thailand (EGAT) was established over 30 years ago. The establishment of a mine and 13 stream power plants using lignite as fuel for electricity generation have caused air and water pollution and adverse effects on the health of nearby populations. In this context a project called 'System And Mechanism Development By Participation Of Community Near-By Mae Moh Plant In Water Supply Provision For Agriculture And Consumption' aimed at providing safe quality drinking water access to rural areas was developed in the upper zone of Ban Dong Sub-District within the Mea Moh District in the Lampang Province, Northern Thailand. The main objectives were: to co-investigate the current situation of water problems for consumers in terms of quality and quantity; to develop mechanisms to supply drinking water through community participation and to design an appropriate model for sustainable water management. It made a focus on four main aspects: At present villagers face not only water shortages but also water quality-related problems. The project was launched to initiate locally led working groups and had a focus on capacity building by promoting education of adults and youth, improving public policies and hearing

capacity and encourage public participation. The main result was the provision of local capacities and knowledge transfer among villages to solve local problems through creative and cost efficient solutions, including the use of a slow sand filtering system for drinking water, rain water harvesting systems to address water shortage and maintenance of the village water supply system.

### ***Capacity Development for Sustainable Development: Philippines Experience***

The Sagana at Ligtas na Tubig sa Lahat (SALINTUBIG) (Abundant and Safe Water for All) program was aimed to ensure safe water supply for the 1,491 municipalities that integrate the Philippines. This program was framed under the influence of the 7<sup>th</sup> MDG, which spurred the government to develop a Philippine Development Plan (2011-2016) and a Philippine Water Sector Roadmap aimed at providing access to water supply to at least 50% of the population by 2016 and 100% of the population by 2025 respectively. The program set its main targets in 455 water less municipalities and 226 non-waterless municipalities based on three priority criteria: 1) low access to water, 2) high water-borne diseases and 3) high poverty incidence. Action was structured into two components: a capacity development phase, which has already been accomplished, and an infrastructure investment phase that is now being started. The program was supported by the implementation of a series of tools including a Ring-fence LGU Water Utility Accounts, which includes water provision within the local governments budgets; the creation of a LGU Economic Enterprise to engage the private sector; the formulation of local ordinances and policies on water governance; the setting of a water tariff to included cost recovery; the preparation of operation and maintenance training workshops and plans and the elaboration of the Water Safety Plan. The main upcoming challenges were related to the limited availability of resources and technical capabilities within rural regions and the lack of willingness of contractors to undertake projects in remote areas. Parallel to the government work, Local Water Districts implemented some of the water projects with engagement of all the local stakeholders. The focus for the future is being put in the creation of National Capacity the Development Program that includes innovative learning models, encourages participation and increases the allocation of funds for capacity development.

### ***Improvement of Services in the Republic of Korea***

With the rapid economic growth that began in the early 1960s, Korea has made great strides in improving and constructing the infrastructure and service enhancement of waterworks and sanitation. Waterworks service is now provided to almost all regions in the country except for some vulnerable rural areas. Meanwhile, more than 90% of sewage generated is collected and treated properly. The key factors for a successful water service system included the government-initiated financial investment, executed in a timely manner to deal with the steeply acceleration on water demands, and the adequate preparation of a water resource management system for various fields of waterworks and sewage services. At present, the maintenance of existing facilities and improvement of service quality are the biggest challenge, rather than the quantitative expansion of infrastructure. Some of the major outstanding issues include the low operation efficiency of existing facilities; challenges in consolidated operation management, as the quantity and quality of water are managed separately by different departments; structural financial problems; and additional fund requirements to address climate change challenges. To address these issues, the government is trying to shift the presently local based water management system to a waterworks/sewage total operation system and encourage the participation of private companies in water service provision. However, as of now some additional pending challenges remain, including the reformation of laws and a sustainable financial operation system, before the goal of establishing a total water management system that ensures better access to high quality water for leisure, tourism and exercise is achieved.

## **Open discussion**

### ***Stepping from a national water security approach to a regional water security approach***

Water security is a transboundary issue that has implications beyond the national levels. To date there is not a transboundary framework in the Asia Pacific region, and states are trying to deal with water security issues individually at the national scale, despite many of them recognizing the need for and potential benefits of the development of upper scale initiatives and agreements under a frame of cooperation. Knowledge transfer on examples of cooperation initiatives and conventions how they have been conducted in other regions such as Europe could be very useful to bring awareness on the importance of transboundary cooperation among the Asian states, as well as to provide guidance on how to replicate these initiatives in the region. Meanwhile, the support of United Nations and other regions with further experience in dealing with water and energy security issues can be very valuable to guide on the elaboration and implementation of water integrated resources management frameworks.

Experience and learning by doing is essential, especially for the younger generations, who need to be involved in water security and development programs to make them sustainable and continued in the future.

### ***The use of certified data and credentials to feed water security framework assessments***

One of the main challenges for water management in the Asia-Pacific region is that there are no real credential sources to use the data from, neither at national nor at regional level. There is a wish to improve measurements and data availability and quality with the support of member countries. At present most of the data used come from UN statistics or ESCAP data.

### ***The main challenges to achieve the human right for water and sanitation in the Asia Pacific Region***

There are several challenges regarding access to water in general. One is the lack of a water law in some countries like Thailand, causing water allocation problems and upstream-downstream conflicts. A second big challenge is the insufficient availability of freshwater to meet the demands of a rapid urbanization and extension of the agricultural area. A third main challenge is climate change and the related exacerbation of droughts and water scarcity.

The tools that have been implemented in the region to address them include governmental and institutional frameworks and capacity development tools. Particularly Thailand a IWRM approach has been implemented with the creation of a National Committee and a River Basin Committee for the 25 major rivers, although allocation competences have not been included within their mandate thus remaining a problematic aspect. Capacity building and stakeholder integration have been encouraged through a bottom up approach and are expected to be increasingly present in current and future projects.

### ***How can the current institutional frameworks draw the focus away from big urban settlements to smaller communities?***

There is need to first define the concept of rural communities and small communities. There are certain rural areas that are not covered by the water district, and there is need to enhance the coverage of water services to those rural districts. Second, there is need to inventory and map the areas lacking access to water and analyse their situation (proximity of water sources, geographical barriers, etc.), in order to design a complete National Plan for Water for All. This could be lumped into a project where both the government and private sector should contribute. Finally, capacity building is essential and should be localized so tools can be understood and implemented, and monitored to ensure its sustainability.

***How to mobilize the critical amount of funds required to advance in the post-2015 agenda?***

Identifying the connection between infrastructure and economic development is the first critical step. In Korea the public water infrastructure macro-project was only possible thanks to the aid of foreign donors in the first stages of the economic development. In the industrial areas, improvements in the water system required activity and economic investment, which were contributed directly or indirectly by the technological development and job creation. Knowledge on careful investment and efficient operation management of the system, as well as consideration of the scale of the projects, are critical points to come up with sustainable projects in the long term.

***The time and financial challenges in finding skilled contractors: how focus the training of local people?***

The main challenge associated to finding contractors relies on the lack of willingness or demand of higher prices to undertake projects in rural and isolated areas, which are usually located at far distances. There a potential for local governments to tap the skilled resources and capacities they are working with, which are usually government controlled corporations, to help nearby rural communities through encouragement and incentives.

**Final messages and conclusions**

The Asia Pacific Region is developing multiple efforts and strategies to meet the water SDG targets through the application of water security frameworks at national scale. However, there is acknowledgment about the transboundary nature of water issues and the need to address them jointly from an upper scale. In this sense, the Asia Pacific region feels in the need for support and guidance to start building transboundary cooperation initiatives, and the transfer of knowledge and experience from the United Nations and other regions with further cooperation backgrounds could be of great value. Meanwhile, Asian states are adopting integrated and coordinated approaches for natural resources management and to address the water-energy-food nexus and related challenges.

Several examples of participative social governance at local level are providing effective and win-win results, highlighting the potential of building and strengthening local capacities and creating awareness on their own problems to achieve successful horizontal governance formulas. Nevertheless, bringing water access to remote rural areas remains an important challenge.

Finally, important investments in water infrastructures projects will be required to achieve universal access to water and sanitation in the region. The contribution of external funds and international donors to face the initial upfront investments until the project dynamics drives new own financial sources (increased economic activity, technological innovation, job creation and cost recovery), may be a condition to make these projects possible.

**Pictures from the session**



*From left to right: Janya Trairat, Jong-Soo Yoon and Noppawan Boontham.*



*Jong Ho Ahn*



*Rodora Gamboa*



*Hongpeng Liu*