



Council for Security Cooperation in the Asia-Pacific

1st Meeting of the CSCAP Study Group on Water Resources Security Hanoi, March 22-23, 2011

The 1st meeting of the CSCAP Study Group on Water Resources Security convened March 22-23, 2011, in Hanoi, Vietnam. The meeting was co-chaired by CSCAP Cambodia, CSCAP Japan, CSCAP Thailand and CSCAP Vietnam and joined by 56 participants from 10 CSCAP member committees and other institutions.

The meeting was opened by *Nguyen Hung Son* on behalf of CSCAP Vietnam, who was of the view that water security is increasingly becoming a global concern, not an issue of any particular region. Water scarcity as a result of climate change, or mis-use, or mis-management of water resources is predicted to be a potential source of conflict and instability in many regions. Already, many countries in this region are witnessing more frequent and more prolonged episodes of drought, with severe consequences to many millions of people. CSCAP Vietnam believed that only through open and enhanced dialogue, with mutual respect to each other's legitimate rights, concerns and interests, will countries in the region find satisfactory solutions, thus consolidating mutual confidence and trust, boosting bilateral and regional cooperation, and facilitate the performance of regional mechanisms and regimes designed to promote cooperation for the sustainable development of water resources in the region.

Vannarith Chheang (Co-chair, CSCAP Cambodia) emphasized the seriousness of fresh-water scarcity. He quoted UN Secretary General Ban Ki Moon's statement that every 20 seconds, a child died from diseases caused by fresh water scarcity. According to UN water forecast, by 2015, 1.8 billion people will be living in countries or regions with absolute water scarcity. This is the issue facing every regions with no exception. Together with other three CSCAP Study Group meetings on water security, of which the second one will be held in Cambodia in July this year, this first meeting is expected to produce good and relevant policy recommendations to the regional leaders, especially for the Asean Regional Forum. Both *Mikiyasu Nakayama* (Co-chair, CSCAP Japan) and *Suchit Bunbongkarn* (Co-chair

CSCAP Thailand) revealed that their countries have recently recognized the importance of water security. They noted that water scarcity had become obvious and causing tension and distrust among some countries. Therefore, they recommended that ASEAN should strongly promote its roles in pushing up cooperation among countries in the region in using and managing water resources.

The first two sessions of the meeting focused on **assessing the current state of water resources usage and management in Southeast Asia**. Speakers analyzed both natural and unnatural factors affecting the quality and volume of water resources in the region, including climate change, industrialization, hydro power construction, migration, transportation etc.

The first presenter, *Koos Neefjes (UNDP Hanoi)*, pointed out that climate change caused by greenhouse gas emission adversely affected all Mekong countries. He said the consequences of climate change including drought, flood, typhoon, sea level rise etc. would threaten the quality and quantity of water, food, and energy, and also economic growth and poverty reduction. He recommended that the impacts of climate change should be minimized in order to improve the safety of the region from natural disasters.

Neefjes also added that the worsening current state of water in the Mekong originated from unsustainable usage and management. Firstly, the coordination among the Mekong countries to address integrated water management remains insufficient and is not mainstreamed in relevant policies, including fiscal policies such as water pricing, nor in the integrated spatial plans covering wider geographic areas and all water users. Secondly, storage and water safety has received inadequate attention by the relevant countries. Thirdly, the construction of dams for different economic interests of countries in the region contributed to water resources degradation.

Sharing with Neefjes's idea on the poor management of water resources in the Mekong region, *Maria Larsson (CSCAP Cambodia)* confirmed that while water scarcity is not an urgent issue facing the region in the short term, the current unsustainable management could quickly change the situation, especially in the lower area. The alarming issues rest on the differences over annual freshwater withdrawal and allocation among the countries for the needs of domestic demand, industrialization, and agriculture. While Vietnam and China mostly use water of the Mekong River for domestic demand and industry, Myanmar, Laos and Cambodia use it for forest areas and agriculture. According to Maria, wood industry in Cambodia is causing the most pollution to the water.

Dao Trong Tu (CSCAP Vietnam) emphasized the importance of food security and ecological environment in correlation with the sustainable

management of water resources. He argued that the Mekong River was the living place of over 2 billion people, a rice granary of the whole region. Therefore, it is certain that declining water quality and quantity would challenge the efforts by regional countries to reduce and alleviate poverty. From the aspect of ecological environment, he added that biodiversity and ecological system are not only natural resources but also the heritage and cultural environment of each country in the region. The maintenance of biodiversity and ecological balance should be in main strategies of sustainable management of water resources.

Zhou Shichun (CSCAP China) and Janya Trairat (CSCAP Thailand) introduced current situations of water resources management in China and Thailand, and shared their experiences on this issue. According to Shichun, China is one of the countries with many rivers in the world, having large volume of water resources. Its average total volume of water resources reaches $2.8124 \times 10^{12} \text{m}^3/\text{yr}$, ranking after Brazil, Russia, Canada, USA and Indonesia. However, China faces uneven water distribution with the lay-out of regional production. Precipitation and runoff vary annually, seasonally and regionally. The situation in the North is more serious than that in the South.

Zhou Shichun reported that the Chinese Government has issued the Law on Water in 2002, accompanied by a series of other management regulations on water resources. Those regulations aimed at meeting basic needs, securing food supply, protecting ecosystems, sharing water resources, managing risks, valuing water and governing water wisely. Most notably is the regulation on water pricing. According to the regulation, those who use more water are required to pay more and vice versa. Recently, China made a decision to accelerate reform and development of water resources, known as No.1 Document in 2011. The Document sets 5-year plan (2011-2015) targets of improving China's relatively backward water conservancy situation over the next five to ten years, requiring farms to use more advanced and high efficiency techniques of irrigation to reduce 30% of water usage. China would cooperate and join international efforts to deal with water resources security, especially with downstream countries.

According to Trairat, locating in the downstream of the Mekong River, Thailand is suffering from most of the negative impacts caused by poor water resources management in Thailand itself as well as in other countries. At present, Thailand still lacks a holistic policy, appropriate coordination and active participation in using and managing water resources sustainably and effectively. However, Janya believed that her country's current situation could be improved by national strategies. Thailand upgrades the water drainage and supply system to control flooding and drought; strictly

monitors and supervises water usage; enhances capacity-building in water management; issues law on water resources; gives first priority of water location for domestic use, then industrial and agricultural sectors. She disclosed Thailand's strategies towards closely coordinating with other countries in the region to better manage the Mekong River basin.

In the discussion following the presentations, most participants agreed with the seriousness of the current management and usage of water resources in the Mekong River basin, and shared the view that while water shortage will soon affect the region, the more immediate threat comes from water pollution and changing pattern of water flow. They also expressed their concerns about the balance between water usage for different imperative purposes and its consequences. So far, there is insufficient investment in researching on the controlling factors like population growth, climate change, food and energy demands. In addition, governments have not reached a consensus on the definition, cooperation and coordination of water resources management at the regional level.

The third session addressed **“Water resources usage and management: Human and economic security aspects”**, examining the economic and human security aspects of water resources usage and management, answering the question “What are the threats to the people's lives and their economic activities?” This session also assessed the consequences of poor usage and management of water resources to the people, the environment and regional economies (changing conditions and patterns of economic activities, changing agricultural conditions, food and energy security issues...).

Mark Brindal (Aus-CSCAP) delivered the first presentation, emphasizing the importance of water resources and the aspects of water resources that affect prosperity and human security. According to him, water resources are becoming more and more important natural resources for human beings, and are “important enough to fight over”. Brindal pointed out three aspects of the nature of water that affect economic prosperity and human security: quantity, quality and timing. By compromising the quantity, quality and timing of water, an individual nation can exert a form of sovereign claim over the ownership of the resource, generally at some consequences to its neighbors. Brindal recalled several historical and current examples of how upper stream countries can exert geopolitical influence on lower stream ones to illustrate his point. Brindal also suggested that countries in the Mekong basin and Australia should gather to solve their same problems.

Presenting after Brindal was *Tarek Ketelsen (International Center for Environmental Management)*, who introduced the MRC Strategic

Environment Assessment (SEA) for hydropower in the mainstream. Ketelsen pointed out that mainstream hydropower has been one of the strategic decisions for the Mekong Basin since the 1960s, and remains so because of (i) the large wealth of natural resources, (ii) the health and connectivity of natural systems, (iii) the high dependency on natural resources for livelihoods and (iv) the increasing demand for economic and energy growth. Some of the major conclusions of the SEA are (i) one dam across the Lower Mekong mainstream commits the river to irrevocable change; (ii) the proposed developments when under construction and operating have the potential to create tensions with the Lower Mekong Basin; (iii) many of the risks associated with the proposed mainstream developments cannot be mitigated at this time – they would represent a permanent and irreversible loss of environmental, social and economic assets; (iv) there are so many remaining uncertainties and serious risks associated with the developments that more studies are needed to better inform responsible decisions making.

During the discussion, many participants agreed that regional countries should consider harmonizing and balancing national, regional, as well as international interests via cooperation. Also, in terms of cost and benefits analysis, regional countries should count some factors into this analysis: the livelihood, the human displacement or national trade – off. It was argued that the impacts hydropower dams depend on many elements such as the river’s system or the institutional capacity. Suitable mechanisms are necessary in this region in order to strengthen water usage and management and set the guidelines for the projects’ operation. There were some extra concerns about poverty which was considered as one of the greatest challenges in this region.

Session four addressed the topic “**Water resources usage and management: Regional security aspect**”, assessing the regional impacts of poor usage and management of water resources, and identified regional security risks stemming from water issues namely water resources disputes, cross-border migration, widening social and political unrest, spiraling disputes, impeded regional integration and cooperation, foreign interference, etc.

Seungho Lee (CSCAP Korea) paid attention to the definition and determinants of water security, the role of upstream powers and the cooperation among countries in the Mekong River basin. According to Lee, there were three determinants of water security, namely hydrological environment, socio – economic environment and climate change. He gave an overview of the Mekong River basin and the geopolitics of countries along the river. Then he stressed the challenges in this region, including: (i)

the fragile coalition in the MRC, (ii) the negative impacts of hydropower development on the environment, and (iii) climate change. From his viewpoint, the fragile coalition in MRC was due to the incomprehensive cooperation among its members and the absence of China and Myanmar. Therefore, looking for more suitable and practical principles is necessary to enhance the role of the MRC.

Nguyen Nam Duong (CSCAP Vietnam) emphasized the regional security aspects of water resources usage and management and argued that the poor usage and mismanagement of water resources can lead to wider regional security implications and affect the stability of the whole region. Nguyen pointed out that the fast-rising demand for energy and the desire for rapid economic growth in the developing countries are the sources of water-related regional disputes. He argued that the construction of hydropower dams would seriously affect the river flow and its sediments. Furthermore, the distrust and suspicion among countries in this region frustrated regional cooperation and worsen the past and existing conflicts. He suggested that the discussion of water security issues should be put under the framework of sustainable development and sustainable peace in Southeast Asia.

During the discussion, one Laotian participant clarified about their dams, with an emphasis on the Xayaburi and its role in Laos' economic development. After that, one Thai participant gave some suggestions to deal with water security issues in this region, namely establishing a dispute settlement mechanism, and promoting studies to preserve the health of the Mekong River as well as the quality and quantity of water, paying attention to the principles of negotiation and establishing institutions. The participants agreed that navigation has a role in connecting regional communities through increasing their trade relationship, especially in the fishery sector. The sharing of navigation information is essential for potential economic connectivity. Some participants were of the view that ASEAN and its people oriented Charter must play a role in preserving the water security, such as in the Mekong region, and that water security should be highly considered on ASEAN's agenda.

Session five addressed **international legal foundations of water resources management**. Specifically, it was aimed to assess regional and international agreements on water resources management in order to explore which international norms and practices in water resources management can be applied to Southeast Asia. The role of NGOs, civil society and other stakeholders in addressing these issues were also investigated.

As the first presenter in this session, *George Radosevich (International Association for Water Law)* argued that water security is a fuzzy concept

which finally refers to the reality of water scarcity and water availability. The real concern is riparian states' views on water uses and needs. Then, he proceeded with the origin of international water law and its four general principles, namely sovereignty equality, freedom of navigation, equitable apportionment or sharing, and freedom from harm. Recently, more principles are added, such as prior notification, exchange of information, and compensation for damages are coming of age. The application of these principles underpins four doctrines: absolute territorial sovereignty, absolute territorial integrity, limited territorial sovereignty, and community of interests.

Accordingly, the 1995 Agreement on the cooperation for sustainable development of the Mekong River basin fits into doctrine number four (i.e. community of interests). Radosevich argued that for a transnational body like the Mekong, if one country puts a structure across the concurrent post of the river, it has to take into account the rights, interests and responsibilities of the neighbors on the left bank and the right bank, the upstream and the downstream. He provided a brief history of cooperation in Mekong River basin and the negotiations of the 1995 Mekong Agreement. After putting the Agreement in detailed analysis, he concluded that water is a fugitive natural resource and water security is state of mind. Rules for shared usage of water will improve the chance of gaining mutual benefits, given the fact that international customary and treaty water law is not universally respected by all co-riparians all the time.

Uttam Kumar Sinha (CSCAP India) argued that we need to look at water issues with a new perspective and in a critical way. He stresses the need to admit that the stability of many regions greatly relies upon the stable flows of water. He analyzed the five principles of water management in the light of interstate politics. It is true that the transnational nature of river necessitates greater information sharing, and greater cooperative actions from riparian states. He then argued that in our connected and globalized world, the doctrine of absolute sovereignty no longer holds these days. Therefore, reasonably speaking, territorial sovereignty is limited. Although the principle of equitable and reasonable utilization is contestable and debatable, it is important to deal with the issue of sharing water resources. In terms of the principle of freedom from significant harm, it has been interpreted differently. The gray areas may be to which extent it is considered significant and what could constitute harm. The last principle of prior notification, exchange of information would be a key to shape relations among riparian states. There are lots of activities around the rivers these days. Therefore, sharing information, data and consultation helped reduce misperception, mistrust and renegotiate old agreements. Given lots

of legal developments on the water front, he pointed out that state politics still dictates, as water is very precious commodity that can lead to attempts to control water. That geopolitical dynamics still dominate South Asia and Southeast Asia. One way forward is the principle of “global commons” which could be applied in interstate and inner-state relations.

Ellen Levin (US CSCAP) shared some US’s experiences on managing and sharing water resources on the Tuolumne River in San Francisco. According to Levin, San Francisco’s water system is operated, maintained and developed in a manner that meets water demands in a sustainable manner. She pointed out that while San Francisco is not a sovereign by definition, in California and the United States in general water districts most often act and function as sovereigns. According to Ellen, there is constant defense of rights to water in the US. That gives rise to the compromise among multiple interests in a watershed instead of bringing the case to the court. By presenting a specific case of watershed where San Francisco and two downstream irrigation districts operate their systems in a collaborative, collective manner, Levin argued that the legal foundations are not necessary first choice but solutions may exist at the operating level.

Nguyen Truong Giang (CSCAP Vietnam) reiterated that there are four norms or principles of international resources that can be applied to the region, namely: (i) the principle of equitable and reasonable utilization of international water resources; (ii) the duty not to cause harm to the international water resources; (iii) the obligation to protect and conserve the international water resources and (iv) finally the obligation to cooperate. These principles became the most important customary principles of international water law and therefore they are applicable to all states that share the international water resources. Those principles and norms are absolutely applicable to the region.

The discussion focused on the application of general principles and the prescription on specific conditions of each basin, the necessity of participation and consultation among riparian countries on the usage and management of transnational water, the recognition of different interests, and confidence building which are considered critical for water usage and management. A further look into the concept of “global commons” was also mentioned. Other participants looked for scientific methods of defining the water needs of different countries to proportionately distributing the water resources, alternative water supplies, and best international practices which could be applicable to the region.

The sixth session, “**international institutional foundations of water resources management**”, reviews the operation of existing regional and

international mechanisms related to sustainable usage and management of water resources. *Le Huu Ti (UNESCAP)* began by introducing an overview of water use in Southeast Asia and pointing out that water pollution constitutes an emerging water quality challenge. Drawing on recent developments in water resources security, he introduced ESCAP's new water security concept which moves from resources-services based to outcomes-based approach, from sector or service-level measurements set against a certain standard to index linked to expectations of water users. He moved on to introduce water hotspots framework which identifies ten challenges, namely (i) threat of water stress; (ii) high water utilization, (iii) deteriorating water quality, (iv) poor water quality combined with low water endowment; (v) high flood risk hotspot; (vi) high cyclone risk hotspot, (vii) high drought risk hotspot; (viii) elevated ecosystems / climate change risk; (ix) poor access to drinking water; (x) poor access to sanitation. The third part of his presentation touched upon policy trend in water security. He pointed out two challenges of water resources usage and management in Southeast Asia, namely (i) inequality in access to improved water and inequality in access to improved basic sanitation between urban and rural areas, between the richer and the poorer.

Le Huu Ti put forward two recommendations for the whole Asia-Pacific region: (i) Redefinition of household water security toward demand responsiveness, public participation and recognition of benefits and savings for economy, and (ii) waste water revolution toward recognition of savings and gains, and eco-efficient water infrastructure. For Southeast Asia, he suggested the region should strive to be Water Security Champion by: (i) early achievements of MDG-7, (ii) investments in eco-efficient water infrastructure, (iii) research in water security improvement measures to reduce sub-national disparities; (iv) establishment of National Water Security Policy Research Institutes and ASEAN Water Security Institute; and (v) being a champion at the Second Asia-Pacific Water Summit in Bangkok 2012.

Mikiyasu Nakayama (CSCAP Japan) proposed two ways to enhance water resources security in the region: (i) taking an integrated approach and securing information transparency. With regard to the former, he argued that looking at the water sector alone may not lead to a solution to a problem among riparian states. Therefore, an integrated approach, including trade-offs between "sectors" and more regional integration, may reduce conflict among riparian states. It is of note that the MRC is no longer the only regional framework for collaboration. Instead, it is a minor actor among many frameworks such as GMS, AMBDC, IAI and so on. Therefore, it is necessary to include non-water sectors such as energy, transportation,

telecommunications, trade, investment, agriculture, fishery, environment... to the “balance sheet”. In this way, upstream countries may find compromise with downstream countries in terms of provision of water while downstream countries may provide upstream countries with cheap electricity, free access to sea ports, etc. Mistrusts and conflicts may be caused by shortage of information and miscommunication. The recent disputes between Pakistan and India over Indus River and among China and some ASEAN countries over the Mekong River are cases in point. By citing the successful cooperation model of the Espoo Convention on Environmental Impact Assessment in Trans-boundary Context in Europe, Caspian Sea, Black Sea, Tumen River Basin, he suggested that TbEIA Guidelines for the Mekong should include two components: (i) notification about the project (being considered) and (ii) results of transboundary Environment Impact Assessment. The impasse exists as upstream countries are still somehow reluctant to the latter. Then, the ICJ’s judgment of 20 April 2010 on Pulp Mills on River Uruguay can be a point of reference, which stated the requirement under general international law to undertake an environmental impact assessment where there is a risk that proposed industrial activity may have significant adverse impacts in a transboundary context on a shared resource. Comparing the Mekong River and the Ganges River, he argued that the bigger access to information, data, reports and researches about development and management of the basin, meteorology, and hydrology in the Mekong River has led to higher level of public awareness, scientific understanding, and assistance from donor countries and organizations.

The last presentation in this session was made by *John Brandon (Asia Foundation)*. He made comments about water security from the viewpoint of international politics and United States policy. Firstly, he argued that transparency, accountability and public participation are among the most important factors for good water resources management in the region. Besides, the issues could not be resolved without connection to local livelihoods such as fishery industry and the economic development of the whole region. He argued that women and children have been neglected in the debates and therefore gender component should be added to the agenda. And it is of note that the resolution of transboundary resources problems should involve multiple relevant stakeholders.

Secondly, Brandon sketched out United States policy to Southeast Asia. A good example of a comprehensive US approach is manifested in the Lower Mekong Initiative (LMI), which includes transnational water management, infectious diseases (fever, pandemic influenza, HIV/AIDS), and vulnerabilities to climate change. It seeks to promote common regional

understanding on these issues and effective coordinated response. Confusion may result from the Initiative's focus on the Mekong countries, not on the river. The LMI looks at the Mekong as unifying features and a source of livelihoods for 70 million people. Some projects of the LMI are involved in the development of "Forecast Mekong", a predictive modeling tool to illustrate the impacts of climate change and other challenges to sustainable development of the river basin, helping manage the flow of the water and predict the impacts of hydropower dams. The second area is the sister river agreement between Mekong Commission and Mississippi Commission to pursue a partnership to improve the management of transboundary water resources. The third area the US has been active in is the promotion of sustainable use of forest and water resources to preserve the great bio diversity of the Mekong region and increase access to safe drinking water. The State Department provided grants on a network of regional universities to study the level of pollution as an attempt to enhance research cooperation. Essentially, the US is trying to help institutions to build capacities to promote sustainable development by sharing advanced science and technological capabilities. Brandon ended his presentation with a comment that the connotation of water security implicates protection. From his viewpoint, it is also critical that water as a natural resource should be conserved in a cooperative manner.

The discussion centered on further explaining water security index, the feasibility of the idea of cross-sector trade-offs and sector integration, the enforcement of mechanisms and involvement of third party arbitration related to information transparency. Other issues raised were measures to assure the quality of sewage water treatment, and public-private partnership on profitable sewage water treatment, and the comparative costs and benefits of drinking water and waste water treatments. One participant brought in the question about the roles of other regional mechanisms such as GMS, EWC, AMBDC, ACMECS, and Mekong-Ganga Cooperation, etc. in addressing water security and the elements which make these mechanisms relevant and effective. In that discussion, participants emphasized the importance of mutual respect, mutual trust, common goals and norms which guarantee the effective performance of any mechanism.

In the wrap-up session, the Co-chairs agreed that continued discussions within the CSCAP Study Group on Water Resources Security is essential for confidence building in the region. They concluded that specific recommendations toward sustainable water management for various stakeholders are desirable. The recommendations should also be directed toward empowering regional and international mechanisms such as the MRC, ASEAN, the ARF etc. in dealing with water issues. They noted that

ideas such as enabling CSCAP to become the regional early-warning mechanism on water security issues can be further discussed in subsequent meetings. They stressed that apart from promoting the cooperation among governments, there is also a need to engage the private sectors as well as the civil society in the discussion on water security.

The Co-chairs further emphasized the importance of conducting joint studies on water-related issues such as environmental impacts, climate change, sustainable development... Other possibilities such as site visits in the Mekong area should also be explored in order to see the challenges that regional people are facing.

They looked forward to the 2nd meeting of the CSCAP Study Group in Cambodia in July or August 2011, and expressed the view that the second meeting will focus on making very concrete recommendations for regional cooperation.