



Report on Regional Training Workshop

Challenges and Approaches in Delta Planning and Management

Sharing experiences from SE Asian Deltas and the Rhine-Meuse Delta

21-25 October 2013

Myanmar Maritime University (MMU), Thanlyin (close to Yangon), Myanmar

Organised by UNESCO-IHE, Wageningen UR, Ministry of Transport (the focal Ministry of the National Water Resources Committee in Myanmar), Myanmar Maritime University and ICEWE-WRTC group

In collaboration with Partner institutes, Delta Alliance and Asian-Dutch delta projects.

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Institute for Water Education





Regional Training Workshop Delta Planning and Management - Yangon 21~25 October 2013

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1. Background

River delta's, like the Mekong Delta (Vietnam), Ganges-Brahmaputra Delta (Bangladesh), Ayeyarwady Delta (Myanmar), Nile (Egypt) and Ciliwung Delta (Indonesia) are developing rapidly and are characterised by large-scale urbanisation and industrialization processes. They are facing serious planning challenges related to issues like economic development, population growth, vulnerability to flooding, and food security. These challenges occur in a context of regional and global changes including upstream developments and climate change. The Mekong Delta, Ganges-Brahmaputra Delta and the Ciliwung Delta are for instance the largest areas to suffer the severe impacts of climate change due to their low elevation, high population density and high dependency of local settlers on agriculture and aquaculture.

There is much to learn from people in these deltas who always have lived with floods, droughts, typhoons, and who have developed many adaptation strategies to deal with such risks over the centuries. But, addressing and resolving these complex planning issues require planning approaches and methods which are process oriented, oversee the problems, create solutions from an integral perspective, and involve stakeholders to make use of current practices and experiences. An 'integral perspective' is required to address multi-level interests (local, delta, (inter-)national) as well as interests of different sectors in which key stakeholders are being part of the delta system. Such a planning approach is often seen as preferred, but in many countries it is challenging as the planning history is often sectoral orientated with limited stakeholder participation, information and tools are often fragmented with limited sharing, and capacities to undertake and absorb such a planning process is often not well developed yet.

There is an emerging need to exchange experiences between professionals involved in various aspects of delta planning and to discuss different planning approaches and methods and their feasibility in specific local contexts. This was also clearly demonstrated and articulated in the Delta planning Training Workshop 2012 in HCMC (Box 1).

The Mekong Delta, Ganges-Meghna-Brahmaputra Delta and Ciliwung Delta are focus areas of Water Mondiaal, the international chapter of the Netherlands Water Policy. The Water Mondiaal cooperation aims at the establishment or broadening of sustainable relations between organizations including companies in the Netherlands water sector and those in the delta countries.

2. Objectives of the training workshop

The aim of the training workshop was to bring together professionals from river deltas like the Mekong Delta, Ganges-Brahmaputra Delta, Ayeyarwady Delta, Nile Delta and Ciliwung Delta who play / or will play key roles in delta planning and make them aware of different types of planning approaches, identify feasible approaches and methods given the local contexts and share experiences including those from the Netherlands.

More specifically during the training workshop the 27 participants were focusing on the following activities:

- To expose participants to the latest thinking of delta planning with specific focus on environmental and social aspects and placed in a development context;
- To familiarise participants with the multi-level and multi-sectoral dimension of the topic - also by sharing the experiences of the participants from different backgrounds - with specific focus on rural/coastal and urban case studies.
- To familiarise participants with approaches how to address these multiple dimensions - also considering uncertainty - and (institutional) conditions for implementing such approaches.
- To present, practice and discuss examples of approaches and methods of delta planning by means of European and Asian case studies; and
- To provide a Forum / Community of Practice for knowledge networking between participants, and between participants and resources persons of the institutes involved.

Box 1. Concept of the Yearly Regional Delta Planning and Management Training Workshops

In October 2012 the training workshop 'Challenges and Approaches in River Delta Planning: Sharing experiences from SE Asian Deltas and the Rhine-Meuse Delta' was held at the Centre of Water Management and Climate Change (WACC) at Vietnam National University, Ho Chi Minh City, Vietnam. The training workshop was organized by UNESCO-IHE, Wageningen UR and Vietnam National University. In total 37 participants, many of them alumni from UNESCO-IHE and Wageningen UR were refreshed and shared experiences in different key areas of delta planning and management. According to the participants, the training workshop did live up to their expectations, in particular the south-south learning aspect was much appreciated. The participants strongly expressed their wish that this training workshop was to be repeated in the future in a different host country with different key delta issues. In a similar way we also received very positive responses from the Royal Netherlands Embassy in Hanoi, the Dutch experts involved in the Mekong Delta Plan and the Dutch business community. Based on these responses the idea came up to organise a yearly training workshop on 'delta planning and management', each year addressing different subjects.

The programme committee of the yearly delta planning and management training workshops:

- Ho Long Phi - Center for Water Management and Climate Change of Vietnam National University, Vietnam
- Malik Fida Abdullah Khan - CEGIS, Bangladesh
- Henk Wösten - Wageningen UR, the Netherlands
- Wim Douven - UNESCO-IHE, the Netherlands



3. Participants

Participants Profile

Participants of the training workshop were mid to high level professionals from the Mekong Delta (Vietnam), Ganges-Brahmaputra Delta (Bangladesh), Irrawady Delta (Myanmar) and the Ciliwung Delta (Indonesia) who play / or will play key roles in delta planning. Participants had backgrounds from civil engineering, water and land management, rural planning, urban and regional planning to water governance. In particular alumni of UNESCO-IHE and Wageningen UR who are currently working in the field of the training workshop subject were encouraged to apply for this training workshop. 15 out of the 27 participants were UNESCO-IHE / WUR alumni. Female participants were strongly encouraged to apply; in total 5 out of the 27 participants were female. More information about the participants is presented in Annex 2.

Table 1. Distribution participants by country, gender, organisation and Dutch alumni.

Country	Participants	Female	Government	Private	Research/ Education	Other	Alumni
Bangladesh	7	0	3	2	1	1	6
Indonesia	1	0	1				1
Myanmar	7	3	4	1	2		2
Vietnam	6	1	2		4		3
India	1	0		1			0
The Netherlands	5	1	1	0	4	0	0
Total	27	5	11	4	11	1	12

Facilitators

Overall facilitation of the training workshop:

- Dr. Wim Douven (UNESCO-IHE) expert in the field of Integrated River Basin Management
- Dr. Henk Wösten (Alterra – Wageningen UR) expert in the field of Soil and Water
- Dr. Ho Long Phi Director of the Center of Water Management and Climate Change (WACC), Viet Nam National University HCMC (VNU-HCM), and chair/member HCMC Steering Centre of Flood Control.
- Malik Fida Abdullah Khan, Director of the Climate Change Study Division of CEGIS (Dhaka, Bangladesh)

Resource persons (guidance, facilitation):

- Prof. Dr. Ni Ni Thein (a.o. director ICEWE- WRTC group, Myanmar)
- Ir. Catharina Terwisscha van Scheltinga Director Wageningen Project Office Dhaka, expert in the Climate Change Adaptation, (Dhaka, Bangladesh)
- Engr. Md. Waji Ullah, Executive Director of CEGIS (Dhaka, Bangladesh)
- Dr. Leon Hermans, Assistant Professor, Technical University Delft, (Delft, the Netherlands)

4. Programme and outcomes of discussions

The training workshop offered a balanced combination of interactive lectures, case studies, field visit, group assignments and discussions. The exchange of experiences between delta's was facilitated through case study presentations and participant's discussions. A fieldtrip was introduced to expose participants to practice on the ground and was an integral part of the training workshop. The training workshop was roughly divided into five inter-related parts:

1. Introduction training workshop and deltas represented (Day 1)
2. Delta planning approaches (Day 2)
3. Solution strategies, actor analysis (Day 3)
4. Solution strategies, field trip (Day 4)
5. Delta integration and learning (Day 5)

The five parts will be further outlined below. The schedule of the training workshop is presented in Annex 1 and 3. The training material is presented in Annex 4, and working session outcomes in Annex 5. The daily recapitulations are presented in Annex 6.

4.1 'Introduction training workshop and deltas represented' (Day 1; Monday 21 October)

The workshop was opened by Opening Speech by Mr. Htun Lwin Oo, Secretary of the National Water Resources Committee and DG of DWIR, Ministry of Transport. Welcoming remarks were made by Ms. Carola Baller, Head of Myanmar Office, Embassy of the Kingdom of the Netherlands. The keynote on "Issues and challenges of Ayeyawady Delta" was given by Mr. Zaw Win, Former Deputy Director General, Irrigation Department, Ministry of Agriculture and Irrigation.

The opening session was followed by an introduction of the training workshop (Annex 3) plus introduction of participants and trainers. This session was followed by a challenging key note by Engr. Md. Waji Ullah, executive director of CEGIS (Bangladesh) about adaptive approaches for long term Delta Plan 2100 and innovation for addressing water management issues in Bangladesh.



Figure. Opening training workshop by Mr. Htun Lwin Oo, Secretary of the National Water Resources Committee.

In the afternoon issues and challenges were presented by participants on the Mekong, Ciliwung and Rhine-Meuse deltas. Topics addressed were: Success Story of Lowland Management and Climate Change Adaptation in the Mekong delta; National Capital Integrated Coastal Development of Jakarta and Delta planning in the Netherlands.

The purpose of the presentations was to bring the group to a common level of understanding of the main issues and challenges of each of the delta's represented and the planning approaches and methods applied. To serve as a basis for the discussion the next days the presentations were structured along the following questions:

- What are the key characteristics of your delta?
- What are the 3 main issues in your delta?
- How are these issues addressed? What are the main measures?
- How is the planning system addressing these issues characterized?
- What are the main strengths of your planning system? what are weaknesses?



At the end of the day a plenary stock taking and intercomparison of delta issues and challenges took place, thereby setting the scene for the coming days.

A more detailed recapitulation of the first day is presented in Annex 5.

4.2 'Delta planning approaches' (Day 2; Tuesday 22 October)

The second day starts with an introduction on group work by giving an overview of planning approaches and methods based on international experience, including:

- Delta planning challenges and overview of approaches and methods.
- Key elements of planning process: system and problem understanding, vision development, identification of scenarios, identification of strategies, evaluation and implementation, use of tools. Plus examples of Delta scenario developments.
- Climate change adaptation concepts and approaches.
- Institutional and governance dimension including stakeholder participation.

In a first presentation a concept of scenario and strategy development under uncertainty was addressed. The concept was used as a structure throughout the training workshop.

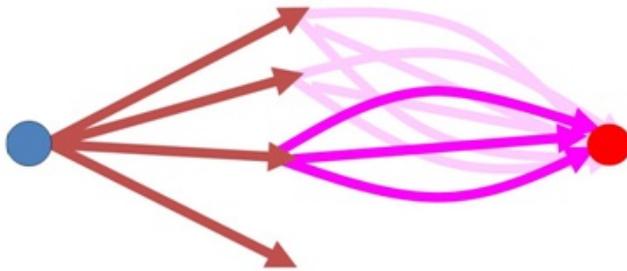


Figure 1. Conceptual framework of how strategies (purple) aim at achieving a vision (red dot) given starting point (blue dot) and different future scenarios.

Next presentations were given on: Salinity management for agriculture in deltas, Lower GBM Delta water Planning, Bangladesh, and Sustainable Development of the Ayeyarwady Delta.

Next the development of Biophysical and Socio-economic Scenarios for long term delta plans was introduced. After lunch participants practiced with the development of climate change and socio-economic scenarios (left part of Figure 1). For each delta scenarios have been developed for four combinations of high and low socio-economic growth and of high and low climate change. The outcome of the scenario discussion sessions by delta are presented in Annex 5.

A more detailed recapitulation of the second day is presented in Annex 6.



Assignment Tuesday: Scenario development

1. Four scenarios
 1. Axis 1 High – low economic growth
 2. Axis 2 Moderate – Fast Climate Change
2. Develop Story lines for each of the four scenarios
3. Describe the most important water related issues for each of the four scenarios

1 group GBM delta, Bangladesh

1 group Indonesian delta – select one delta

1 group Ayeyarwady delta

4.3 'Solution scenarios, strategies and actor analysis ' (Day 3; Wednesday 23 October)

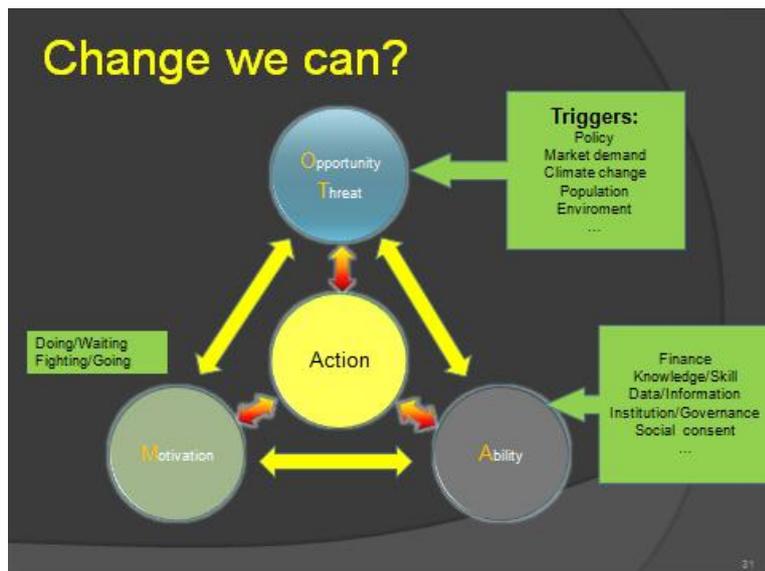


During the third day a presentation was given on: Transboundary rivers problems and prospects in Bangladesh, highlighting the dependency of developments in the GBM delta on activities going on in the surrounding India territory.

In group work sessions different future scenarios (left side of Figure 1) for delta planning are developed, presented and discussed. Deltas addressed are the Ayeyarwady Delta, The Mekong Delta, the Ciliwung delta and the Ganges-Brahmaputra-Meghna delta. For each delta a key topic was identified for which a scenario was developed.

Participants enjoyed the group work as it allowed active participation. Presentations were of good quality and discussions were lively.

Next the MOTA approach was introduced and applied which takes a stakeholder perspective on delta development. It was illustrative to see that different stakeholders such as farmers, scientists, citizens and policy makers due to their different interests, have quite different preferences for different scenarios. MOTA proved to be a useful tool to illustrate these preferences.



4.4 'Solution strategies and field trip' (Day 4; Thursday 24 October)

The Thursday was devoted to the identification of strategies to address current issues and future issues (right side of Figure 1). To focus the discussion a distinction was made between upstream delta, urban delta and coastal delta - for example see Figure 2 -, as each of these regions faces specific issues and requires tailored solutions. Participants by country were asked to assign country members for each group. Starting points for the group discussions were the scenarios developed earlier in the workshop. Each of the strategies was developed consisting of both hard and soft measures. At the end of the day the strategies were evaluated based on their effectiveness, economic costs, side-effects, flexibility and acceptance. Outcomes of the working groups were presented on Friday morning.

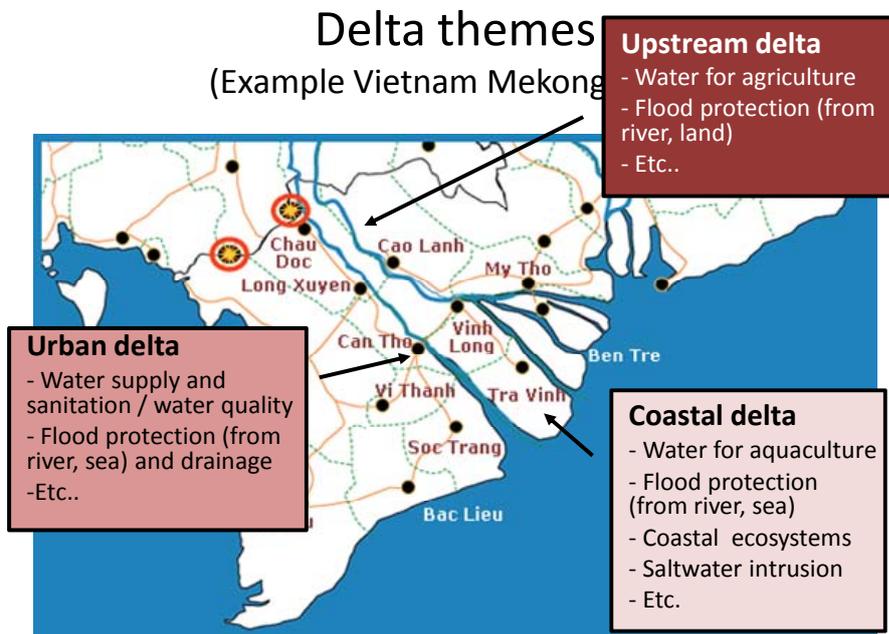


Figure 2. Upstream delta, Urban delta and coastal delta: example from the Vietnam Mekong delta.

Assignment Thursday

1. Develop a roadmap for the implementation of your preferred strategy (e.g. what measures within 10 YR, 50 YR, beyond 50YR)
2. Who should be involved in developing this roadmap? And how?
3. (How to monitor the roadmap? What could be tipping points, how would you know?)

Input: presentations, MOTA session, discussions, ..

Before lunch a presentation session was held to introduce and illustrate some new concepts and approaches in water planning, sedimentation and coastal management and multi-purpose agriculture in coastal zones. Presentations were entitled: Water defense in Vietnam - Current

strategy, Mekong river delta: resilient livelihoods, dikes or floods, and Tidal River Management Concepts and its practical experiences in Bangladesh.

After lunch a visit was made to Myanmar International Terminals Thilawa. The visit illustrated the rapid developments going on in Myanmar as well as the importance of delta accessibility by larger ships to stimulate the economic development of the country. Participants appreciated the explanation on these aspects of delta management.



4.5 'Delta integration and learning' (Day 5; Friday 24 October)

The last day of the training workshop started with the presentation of the outcomes of the working groups sessions on Thursday. Four groups representing four deltas presented their findings (Annex 5) followed by lively and interesting discussions. The main points discussed were related to:

- Solution strategies
 - What are differences / similarities between delta's?
 - What method of strategy development works best?
- Solution strategies at delta scale
 - What are possible issues between strategies?
 - What are opportunities for cooperation (e.g. benefit sharing)?
- Conditions for implementation
 - How to create cooperation?
 - What are the main bottlenecks in enabling conditions?

After lunch we discussed the needs to provide a Forum / Community of Practice for knowledge networking between participants, and between participants, regional and international partners were explored and ways of organizing such a Forum / Community of Practice. In general the training workshop was much appreciated and most felt the need to continue this type of activities.

This was followed by the closing of the training workshop and handing over of the certificates.

5. Logistics

The workshop was held at Myanmar Maritime University (MMU), Thanlyin (close to Yangon).

6. Summary training workshop outcomes

The training workshop consisted of a balanced mix of lectures on specific delta topics, work on group assignments, group and plenary discussions, and group presentations. Due to high professional level of the participants the discussions often reached the level of a policy dialogue among equals rather than a learning exercise for interested outsiders. Besides technical aspects such as for instance salt intrusion and sea level rise, ample emphasis was also on institutional arrangements and political will as a prerequisite for successful delta planning. A characteristic of this workshop was the direct South – South exchange on objectives and challenges in delta planning taking into account similarities and differences among deltas in SE Asia.

Different scenarios have been developed for the four combinations of high and low socio-economic growth and of high and low climate change. This was done for the four deltas separately as well as for the upland, rural and coastal areas of the combined deltas. A new technique was used to evaluate the developed strategies in terms of their effectiveness, economic

costs, side-effects, flexibility and acceptance. Participants appreciated the training workshop which they attributed to the attractive format of the workshop, the high professional level of the participants, the excellent quality of the facilitators and the friendly atmosphere created by the Myanmar host. The participants expressed their wish that this training workshop which was now held for the second consecutive year will be repeated in the future in a different host country with different key delta issues. Outcomes include:

- 27 mid-level professionals including UNESCO-IHE and WUR alumni trained in area of Delta Planning;
- 27 mid-level professionals working in / related to / interested in Delta Planning shared experiences and established an initial network with ideas for future cooperation, like next training, etc..;
- High level of exchange of ideas and possibilities of delta planning among South – South participants;
- 1 week curriculum on Delta Planning developed, tested and shared with participants.

The participants evaluation of the training workshop is presented in Table 2; details in Annex 7.

Box 1. Workshop experience mr. Saiful Alam, Bangladesh.

The five day workshop has been quite a success as far as concerning sharing, comparing the knowledge on planning issues, challenges, strategies of the four Asian deltas and one European delta. We do have similarities and dissimilarities in issues and challenges we are facing but we do have an impression that we can all develop and agree on certain concepts and approaches of planning that would probably could lead us for future planning in these five deltas. I loved the discussion and debate on different strategies proposed by the participants in the respective deltas which would help us in further discussion coming up in Dhaka on Delta plan preparation. I liked the recommendations discussed in the last workshop day on further strengthening the courses. I felt that a better mix of participants from different disciplines and backgrounds may be included (some non-alumni could also be included), and more local visits (like port site visit made in Myanmar) could be arranged. The participant presentations could be organized better if prior invitations are made for posters and oral presentations. I do agree that the organizing members agencies made their utmost effort in making the workshop a success. The resource persons from the Netherlands, Bangladesh, Vietnam and Myanmar interacted very cordial and excellent with the participants. Stay at the Orchid hotel was also excellent. As an IHE-UNESCO Alumni, I took the workshop as an opportunity to understand the planning that is going on in deltas, the concepts to deal with uncertainties etc, so that Water Resources Planning Organization (WARPO), Bangladesh can contribute in the upcoming preparation and formulation of the Bangladesh Delta Plan.

Box 2. Workshop experience mr. Nguyen Van Kien, Vietnam.

I would like to say that the workshop was great. It was a great chance for scholars from different deltas to discuss and share challenges, ideas, concern, opportunities in order to solve the same problems. I think the organizer took very good care of us and I enjoyed being isolated in the Myanmar Maritime University for the workshop and to meet friendly people. I missed the final day. I think we will miss each other and by the way, we will collaborate for our future. I think this workshop was very important for us as we learned a lot from other delta. I propose that the workshop will be repeated each year. The next year should include one former participant from each delta to share their on-going work with the new participants. I enjoyed the workshop.

Box 3. Workshop experience Dr. Toe Toe Aung, Myanmar.

It is my great pleasure to have a chance to express my feelings about the workshop. I was so excited to join because the workshop addressed Delta's issues. A focus point is the Ayeyarwady Delta and that is my research area. Therefore I participated in the workshop highly motivated. On the first day of the workshop, I was pleased to see and to get to know participants coming from a couple of well-known Delta regions including the Mekong, the Sundarbans, and so on, and the Dutch Delta as well. During the workshop we discussed about planning and management of deltas and we shared our knowledge and experiences. It was very helpful to my existing limited knowledge about delta management. The participants were presenting their observation on the ground, and some were doing their best by comparing issues and challenges of most of the Deltas worldwide. As a Myanmar participant, this was a rare opportunity to learn lessons from a couple of other Deltas. Myanmar is a country that just started promoting political and ecological reform processes. She was a lonely planet apart from other parts of the world for a long time. Thus, we as Myanmar participants were very happy by having this great opportunity. Especially, the planning and management in the Asia Region helps us to consider better strategies for the big Ayeyarwady Delta. This Ayeyarwady Delta and its Ayeyarwady River is a backbone of the country. It is urgently needed to maintain this Delta on a sustainable basis by considering social, economic and ecological approaches. One of the interesting topics in the Workshop is stakeholder analysis. In the reform processes, Myanmar has a series of workshops, seminars, meetings and conferences. However, it seems that most are not able to complete the decision-making processes. Similar to SWAT analyses, this stakeholder analysis we learnt at the workshop is expected to address the unsolved decision making issue. Finally, I do hope that as a water-resource rich country there will be more opportunities to participate in planning and management exercises of water resources and delta regions. As a result, the degrading and depleting delta environments could be managed effectively and efficiently. I am very grateful to resource persons, participants, organizers and all assistants working together in this wonderful workshop.

Table 2. Summary of the participants evaluation.

The course in general		5	4	3	2	1	Total number		Average	
		<i>Strongly agree</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>Strongly disagree</i>				
	Q1	Do you think the training workshop enabled you to achieve learning objectives as stated above	12	9	0	0	0	21	4,57	
	Q2	The total available time is reasonable for the amount of material to be studied	2	13	4	2	0	21	3,71	
	Q3	The balance between theory and practice (exercises/assignments) is right	1	13	6	1	0	21	3,67	
	Q4	The training workshop is well supported by teaching tools, facilities & materials, such as lecture notes, handouts, etc.	6	6	5	4	0	21	3,67	
	Q5	The material covered in the training workshop was mostly new for me	6	8	6	1	0	21	3,90	
	Q6	The training workshop provided a useful contribution to the specific requirements of my job	7	10	4	0	0	21	4,14	
	Q7	The training workshop provided a useful contribution to my professional development	10	11	0	0	0	21	4,48	
Working relations			<i>Stimulating</i>	<i>Cooperative</i>	<i>Neutral</i>	<i>Distant</i>	<i>Difficult</i>	Total number		Average
	Q8	The working relations with the trainers has been:	14	7	0	0	0	21	4,67	
	Q9	The working relations between participants has been:	8	13	0	0	0	21	4,38	
Overall assessment			<i>Very good</i>	<i>Good</i>	<i>Neutral</i>	<i>Not good</i>	<i>Very bad</i>	Total number		Average
	Q10	Please mark your overall assessment of the quality of this training	10	11	0	0	0	21	4,48	
Logistics			<i>Excellent</i>	<i>Good</i>	<i>Reasonable</i>	<i>Poor</i>	<i>Bad</i>	Total number		Average
	Q11	The internal organization and logistical support has been:	13	3	5	0	0	21	4,38	
	Q12	The accommodation has been:	10	6	5	0	0	21	4,24	

7. Donors

Main donors of the training workshop were:

- Dutch Ministry of Infrastructure and the Environment (I&M),
- Dutch Ministry of Economic Affairs, (EZ),
- UNESCO-IHE DGIS Programmatic Cooperation (DUPC),
- Myanmar Maritime University (MMU).

Few participants were funded by NICHE VNM 106 (HWRU), and NICHE VNM 155 (BUET, CEGIS, WARPO).

Supporting networks and partnerships

UNESCO-IHE Global Partnership for Water Education and Research

The UNESCO-IHE Global Partnership for Water Education and Research is a global coalition of knowledge centers with the mission to build capacity for the sustainable management of water and environmental resources and delivery of water and sanitation services. The Partnership was founded in November 2002 with the signing of the Partnership Charter. In 2008, the Partnership counts 18 member institutions from 15 countries and over 40 affiliated MOU partners. The Partnership operates in the context of the UNESCO-IHE Institute for Water Education, as an important mechanism for the institute to fulfill its functions. Worldwide, the partners turn out 1,000 post graduate students in 45 master programs, 3,000 participants in short courses and reach over 500 decision makers through seminars and networks. Together the partners have an extensive portfolio of research projects and PhD degrees. The partners are actively involved in water sector related networks and provide professional services.

www.unesco-ihe.org/Networks-Partnerships/UNESCO-IHE-Global-Partnership-for-Water-Education-and-Research



Delta Alliance

Delta Alliance is an international network devoted to finding successful responses to present and future challenges of delta-regions worldwide. Deltas belong to the most valuable but also to the most vulnerable areas in the world. With increasing pressure from population growth, industrialization, and changing climate, it is more important than ever that these regions increase their resilience to changing conditions. Delta Alliance brings people together who live and work in deltas. They can benefit from each other's experience and thereby contribute to an increased resilience of their delta region.

Delta Alliance consists currently of a network of 11 so-called Wings in the following Deltas: Mekong (Vietnam), Ganges-Brahmaputra-Meghna (Bangladesh), Ciliwung and Mahakam (Indonesia), Yangtze (China), Pantanal (Brazil), Zambezi (Mozambique), Parana (Argentina), Rhine-Meuse (Netherlands), Nile (Egypt), San Joaquin and Sacramento (USA-California) and Mississippi (USA-Louisiana). Also other deltas have shown interest to join.

www.delta-alliance.org

