



# Report on Training Workshop

## Challenges and Approaches in River Delta Planning

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

22-26 October 2012

The Centre of Water Management and Climate Change (WACC) at Vietnam National University, Ho Chi Minh City, Vietnam

Organized by UNESCO-IHE, Wageningen UR, Deltares and Vietnam National University.

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## 1. Background

River delta's, like the Mekong Delta (Vietnam), Ganges-Brahmaputra Delta (Bangladesh), Irrawady (Myanmar) and Ciliwung Delta (Indonesia) are developing rapidly and characterized by large-scale urbanization 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, Irrawady (Myanmar) 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 have developed many adaptation strategies to deal with such risks over the centuries. Addressing and resolving the complex planning issues require planning approaches and methods which are process oriented, oversee the problems and solutions from an integral perspective, and involve stakeholders to make use of current practice and experience. An 'integral perspective' is required to address multi-level interests (local, delta, (inter-)national) and interests of different sectors and key stakeholders being part of the delta system. Such a planning approach is often seen as preferred, but in many countries challenging as the planning history is often sectoral orientated with limited stakeholder participation, information is often fragmented, and capacities to undertake and absorb such a planning process often not well developed yet. There is an emerging need to exchange experiences between professionals involved in various aspects of delta planning and discuss different planning approaches and methods and their feasibility in different contexts.

## 2. Objectives of the training workshop

The aim of the training workshop was to bring together professionals from the Mekong Delta, Ganges-Brahmaputra Delta, Irrawady Delta and Ciliwung Delta who play / or will play key roles in delta planning and familiarize them with 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 37 participants were:

- Exposed to the latest thinking of delta planning, its multiple dimensions, placed in a development context.
- Familiarized with approaches how to address these dimensions – also considering uncertainty – and (institutional) conditions for implementation.
- Learning from examples and experiences of approaches of delta planning from the deltas represented.
- Provided with a forum for knowledge networking between participants, and between participants and resource persons of the institutes involved.

### 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. 18 out of the 37 participants were UNESCO-IHE / WUR alumni. Female participants were strongly encouraged to apply; in total 11 out of the 37 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	2	2	1	3	1	6
Indonesia	7	3	3	1	2	1	6
Myanmar	1	0	1	0	0	0	0
Vietnam	22	6	2	0	20	0	6
Total	37	11	8	2	25	2	18

#### 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

Lecturing, guidance, facilitation:

- 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. Dr. Fulco Ludwig (Alterra - Wageningen UR), expert in the Climate Change Adaptation
- Dr. Assela Pathirana (UNESCO-IHE) expert in the field of Urban Water Management
- Dr. Marcel Marchand (Deltares) expert in the field of Coastal Zone Management

The workshop was opened by Prof. Le Quang Minh, Vice President of VNU and mr. Martien Beek first secretary of the Royal Netherlands Embassy in Hanoi. Mr. Martijn van de Groep Chief Technical Advisor of the Dutch consortium of the Mekong Delta Plan gave a guest lecture.

## 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, issues and challenges
2. Delta planning approaches
3. Field trip to Vietnam Mekong delta
4. Delta themes: coastal delta, urban delta and upstream delta
5. Synergizing and conclusions

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, issues and challenges' (Day 1; Monday 22 October)

The workshop was opened by Prof. Le Quang Minh, vice president of Vietnam National University followed by a welcome address behalf of the Dutch government of mr. Martien Beek first secretary of the Royal Netherlands Embassy in Hanoi. Martien Beek also showed an interesting video about Vietnam and the Netherlands: strategic partners in water management (<http://www.youtube.com/watch?v=ITyuGB9zAAo>).

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 two challenging key notes. First, dr. Ho Long Phi, director of VNU's Centre of Water management Climate Change (WACC) talked about the challenges of the Mekong delta development and planning implications. Then, dr. Marcel Marchand gave a presentation about enabling delta life: what makes managing land and water in deltas different.

In the afternoon participants presented their deltas. 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 characterised?
- What are the main strengths of your planning system? what are weaknesses?

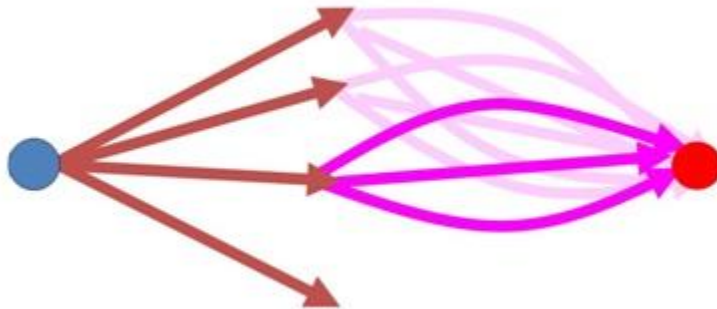
A more detailed recapitulation of the first day is presented in Annex 5.

## 4.2 'Delta planning approaches' (Day 2; Tuesday 23 October)

The second day start with some presentations 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.*

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.

The day ended with a presentation of mr. Martijn van de Groep, Chief Technical Advisor of the Dutch advisory team to the Vietnamese government, about the status and experiences in the Vietnam Mekong Delta Plan currently undertaken.



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

*Box 1. Workshop experience mrs. Naeema Jihan Zini, Bangladesh.*

In my opinion the training workshop on River Delta Planning was an appropriate step taken at the right time. To some extent we all know that the river deltas are suffering severely due to various socio-economic and environmental phenomena. The severity of these sufferings is even more intense at the advent of climate change. However, what I believe was lacking that neither we had specific ideas about these challenges nor we knew what approaches could be undertaken to cope with them. This workshop gave us the opportunity to meet this knowledge gap. The multicultural environment of the workshop and multidisciplinary backgrounds of the participants helped us to get exposed to diversity of ideas regarding deltas. Apart from lecturers we had to do group works which I appreciate the most. The participants were very co-operative and willing to learn from each other. By sharing experiences we have got in depth knowledge about different deltas in the world- their past, present and future, the main challenges and most importantly the management approaches. I am pretty sure that now we are capable enough to contribute to our own delta plans. I would say that I have gained way more than my expectation. Now I have knowledge base on delta planning and also a region wide strong network with the experts. Lastly, I would like to express my heartfelt gratitude and appreciation to the organizers. It was indeed a successful workshop from every aspect. I am expecting that the authorities will consider arranging such activities at regular intervals.

Naeema Jihan Zinia, Bangladesh

*Box 2. Workshop experience mr. Khai Tran, Vietnam.*

The 5-day workshop held in Ho Chi Minh City Vietnam National University in October 2012 gave me a great opportunity to meet and learn from many experts from The Netherlands, Bangladesh, Indonesia, Myanmar, Sri Lanka and Vietnam. As I am a Computer Scientist and want to do PhD research in Hydro-informatics in the near future, the knowledge that I gained from the lecturers and new friends was critically important to my personal career, as well as my potential contribution to my country and the Delta Alliance too. After a week with many interesting presentations, I learned a lot of new terminology in environmental and hydrological fields, which were strange to me before. The most significant thing that I studied was the methodology in planning different deltas from different regions. I knew how to address issues in deltas and what were their priority order, as well as the similar and dissimilar attributes between Mekong Delta (Vietnam) with Ciliwung Delta (Indonesia), Brahmaputra Delta (Bangladesh), Irrawady Delta (Myanmar), or Rhine-Meuse Delta (Netherlands). The 'state-of-the-art' approaches and their difference to the traditional methods were also represented, which helped us to develop separate scenarios and correspondent strategies to overcome the addressed challenges efficiently, to achieve the vision of sustainable development that balances the socio-economic growth with the biodiversity conservation in climate change perspectives.

My most favorite thing in the workshop was the practice stage, when we worked in groups, sometimes with just compatriots, sometimes with different national members to analyze concrete topics to make presentations. The high-experienced people were always kind and pleased to guide youngsters like me to use DPSIR (Driver-Pressure-State-Impact-Response) model to construct four scenarios which base on two dimensions of socio-economic growth and climate change. Then we suggested some groups of strategies, such as hard and soft - adaptive and preventive, for each scenario. We also had a very nice field trip to Mekong Delta to see what is happening in reality, where we took many funny photos. As the time went by, from the start to the end, we did not only study and practice together but also eat together, share our cultures and lives together. After the workshop, we are still keeping contact to maintain our close friendship and relationship for future cooperation in working and researching. We even create a Facebook community to share our photos and feeling about this unforgettable workshop. Additionally, I will create a Facebook page called 'Delta Alliance', where we can post and share relevant information of our researches. And lastly, I also suggest organizing the workshop annually so that all participants can share their research achievements after a year.

To enclose this report, I want to send my gratitude to the organizers who did many things to bring us together, bring the new and helpful knowledge to me. Thank you very much!!!



*Box 3. Workshop experience mrs. Mayang Meilantina, Indonesia.*

Workshop "Challenges and Approaches in River Delta Planning" is very interesting and memorable events for me. It was organized by UNESCO-IHE, WUR, and Vietnam National University in Ho Chi Minh city between 22<sup>th</sup>-26<sup>th</sup> October 2012. I met mentors and participants who were coming from The Netherlands, Vietnam, Bangladesh, Myanmar, and Indonesia that brings together experts, practitioners, academia, researchers, and government officers who work directly or related closely to this issue.

I have neither background nor experiences in River Delta planning and development project. Nevertheless, I was involved quite deeply in a participatory planning process that bridging community and government services in upper Kahayan river of Central Kalimantan-Indonesia. In joining this workshop, I have two expectations which are to enrich knowledge both in theoretical & practical practices of the planning process, especially in the context of regional planning,- and to learn various adaptations strategies for rural people while deals with climate change issues.

It is a five days workshop that combined mix method of lecturers, field visit, and focus group discussions to enrich understanding and sharing opinions among the participants. The first two days workshop has provided participants with common understanding of river delta situations in the 5 countries and adaptive planning to address the issues. It has successfully facilitated participants to the same ground of understanding about river delta issues, at least for me who had never work on this agenda. On the third day, we have very nice field trip to Mekong River in Ben Tre Province. It has exposed me with real situations of the coastal river in Vietnam, local people, environment and culture. It successfully made participants closer to each other since we have chance to talk more relaxed and freely. Then, the last two days was designed to bring participants from various backgrounds and different countries to develop scenario regarding the climate change and socio-economic development in 3 situations of upper, urban, and coastal river delta. It was very nice excersices that made me understand the various reasons, pressures, states, impacts and responses in the three situations in making development planning of the river delta. Working together with experts and collagues from different countries has also stimulated and up date each other to the most current situations of specific river delta issues.

During the workshop, I got exposed to various problems in upper, urban and coastal river delta that I was not aware and do not recognized it before. It is interesting to learn various challenges in The Netherlands, Vietnam, Bangladesh, Myanmar, and Indonesia where water management and transboundary are important and critical issues both for upper and the downstreams of the region in the countries and cities. The management of the rivers can not be focused only in one city or country administrative, but it has to follow geograhal conditions of the river. Therefore, an adaptive planning and management shall be promoted to get higher benefits for all stakeholders. Mr. Long Hoang Phi emphasized how 'The game theory' appllied in this situation whereas win-win solutions shall be promoted instead of zero-sum solution. My learning from The Netherlands is that the promotion of adaptable solutions with natures will have better long-term impact, rather than permanent or concrete solutions such a full-closed dam. I believe that the more sharing meetings and discussions with experts and practioners will enhance collaborative management in river delta planning. Therefore, it would be useful to have similar meeting in other regions as a follow up action of this workshop. A group mailing list between participants should be developed to strengthen networking and sharing information among participants.

This workshop also bring mix-feeling to me; I met several collagues that studied in The Netherlands and develop new friendship. However, very unfortunate that about 10 days after the workshop, one of my Indonesian participant Mr. Thursina Cahya was passed away. It is very sad and shocking news for me. I spent some happy time with him hunting photo, looking souvenirs, waiting the flight, etc. Therefore, I felt deeply sorry for him. This workshop has allowed me met many collagues from many countries and a nice guys, Mr. TC. I am keeping those happy and stimulating days of the workshop in my heart.

I do hope to meet some of the participants again !!

### 4.3 'Field trip to Vietnam Mekong delta' (Day 3; Wednesday 24 October)

The site visit to Mekong Delta has provided a good overview of the field condition of one of the major river deltas in the world. The Mekong Delta located in south-western Vietnam where the Mekong River approaches and flows into the sea through a network of river tributaries. It encompasses an area of 39,000 square kilometres comprised of 13 provinces and the size of the area covered by water depends on the season. The region has approximately 17.4 million inhabitants.



Mekong Delta is the most productive agricultural region of Vietnam and also one of the most highly productive agricultural lands in the world. It is the richest and most fertile area but also one of the most densely populated areas in the country, both resulted in a threat for the agricultural land use change and eventually the risk for food security. Half of the rice produced in this country comes from the Mekong Delta. Fish cultures are also well developed in the area as the region is home to a large aquaculture industry of fish and shrimp, much of which is exported. So, the area plays a

significant economic role for the country, nearly 30 percent of the country's gross domestic product. However, in the lower delta growth options were severely constrained by sea-water intrusion into agricultural areas, reducing of the availability of freshwater in the dry season, and by annual inundation and flooding due to poor drainage

Being a low-lying coastal region, the Mekong Delta is susceptible to floods resulting from rises in sea level due to climate change. The extreme climate change impact prediction stated that besides suffering from drought brought on by seasonal decrease in rainfall; many provinces in the Mekong Delta will be flooded by the year 2030. Freshwater supply for the community outside the city is mostly come from rainwater harvesting from the 6 months of rainy season. Drinking water supplies were often severely affected by salinity and acidity, so the cost of freshwater supply would be significant.

The tourism activities of the Delta have made the site visit more interesting. The bus trip went to My Tho City for a boat trip around the delta. The group visited coconut production center in Ben Tre Island, followed by horse cart riding, Vietnamese singer performance, and rowing boat tour. The fish lunch in Con Qui Island was the perfect end of the trip.



#### 4.4 Delta themes: coastal delta, urban delta, upstream delta' (Day 4; Thursday 25 October)

The Thursday was devoted to the identification of strategies to address 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 two days before. 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.

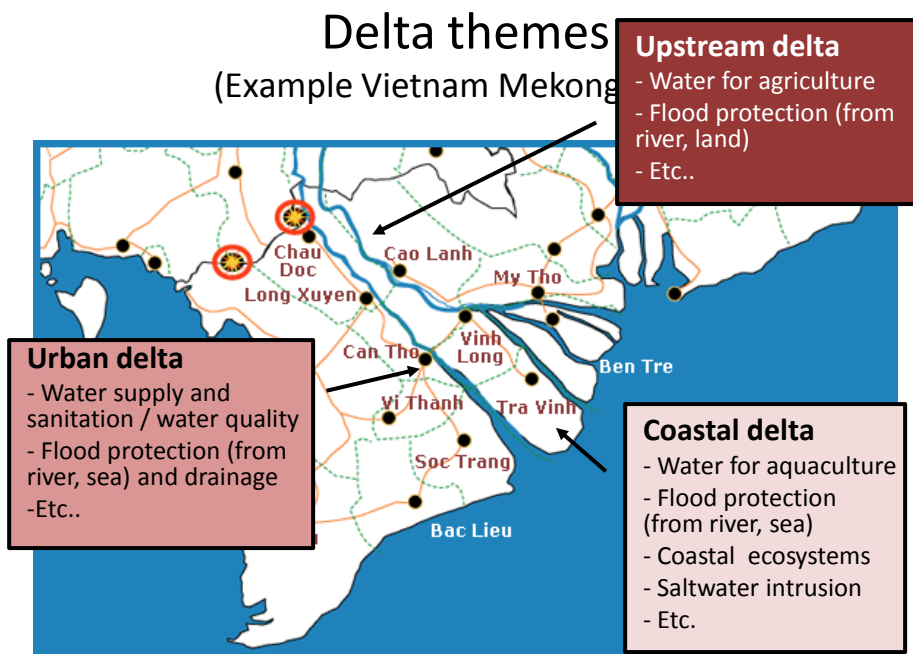
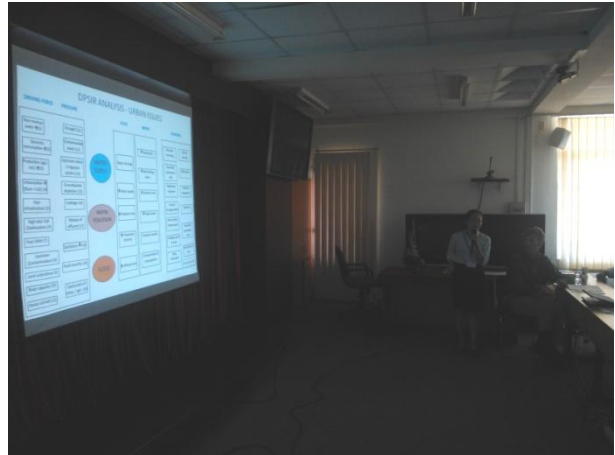


Figure 2. Upstream delta, Urban delta and coastal delta: example from the Vietnam Mekong delta.

Before lunch a presentation session was held to introduce and illustrate some new concepts and approaches in urban water planning, sedimentation and coastal management and multi-purpose agriculture in coastal zones.

## 4.5 'Synergizing and conclusions' (Day 5; Friday 25 October)

The last day of the training workshop started with the presentation of the outcomes of the working groups sessions on Thursday. Three groups - upstream delta, urban delta and coastal delta - presented their findings (Annex 5) followed by an interesting discussion. The main points discussed were related to:



- Solution strategies
  - What are differences / similarities between themes?
  - 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?



So apart from discussing implications within one group, also the interactions between groups became evident. E.g. strategies in upstream delta impacting on urban or coastal delta, and the other way around.

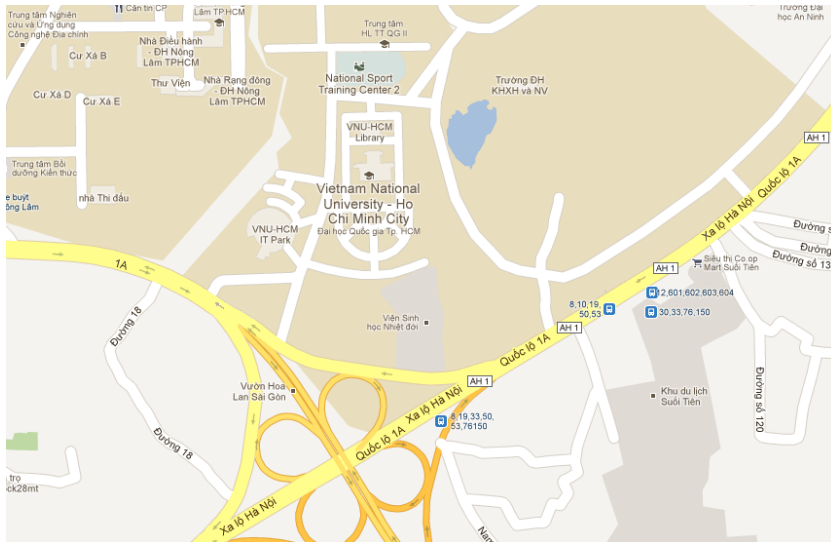
After lunch we discussed the needs to provide a Forum / Community of Practice for knowledge networking between participants, and between participants, regional and international partners were explored and ways of organising such a Forum / Community of Practice. In general the training workshop was much 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 will be held at Room 617, Operational Building of The Vietnam National University – Ho Chi Minh City, Quarter 6, Linh Trung, Thu Duc, Ho Chi Minh City. The workshop venue is about 25km from from City center.



## 6. Summary training workshop outcomes

During the training workshop 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 three deltas separately as well as for the upland, rural and coastal areas of the three deltas combined. For each scenario a strategy was developed consisting of both hard and soft measures. The strategies were evaluated based on their effectiveness, economic costs, side-effects, flexibility and acceptance. The training workshop offered a balanced combination of interactive lectures, case studies, field visit, and group assignments and discussions.

According to the participants, the training workshop did live up to their expectations. This success can be 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 Vietnamese host. The participants expressed their wish that this training workshop is to be repeated in the future in a different host country with different key delta issues.

Outcomes include:

- 37 mid-level professionals including UNESCO-IHE and WUR alumni trained in area of Delta Planning;
- 37 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.; and
- 1 week curriculum on Delta Planning developed, tested and shared with participants.

The participants evaluation of the training workshop is presented in Annex 7.

## 7. Donors

Main donors of the training workshop were:

- Dutch Ministry of Infrastructure and the Environment (I&M),
- Dutch Ministry of Economic Affairs, Agriculture and Innovation (EL&I),
- UNESCO-IHE DGIS Programmatic Cooperation (DUPC),
- Vietnam National University.

Few participants were funded by NICHE VNM 104, NICHE VNM 105, and NICHE VNM 106.

## 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](http://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](http://www.delta-alliance.org)

