

Summary of the mission report:

During the period of March 18-24 a mission of the DRR (Dutch Risk Reduction Team) was carried out to Mexico to identify projects and programs in which Dutch government, knowledge institutions and private sector can cooperate with Mexican authorities at Federal and State level to improve planning on Integrated water Resource Management (IWRM) and Flood Risk Management (FRM). On 18 and 19 March working sessions were carried out with Conagua in Mexico DF, while from 20-24 March a series of workshops were convened to identify with different stakeholders what the challenges are for the State of Tabasco, the city of Villahermosa and the community of Nacajuca. In the State of Tabasco serious inundations took place in recent years (2007 and 2010) caused by flooding of the river system while the city of Villahermosa was inundated as a result of high precipitation intensity during the month of December 2013. The mission was carried out by ARCADIS, Deltares, Boskalis and the Ministry of Infrastructure & Environment. Crucial support was received by the Royal Netherlands Embassy.

At Federal level three priorities were identified for further cooperation. These include:

1. Coastal zone management: the innovative concept of building with nature was discussed and the application of the Sand Engine could be an interesting technique to combat coastal erosion at the Gulf of Mexico.
2. Integrated development plan for Acapulco: this plan for the city and the upstream catchment of the Rio de la Sabána will help to mitigate effects caused by extreme weather events like the simultaneous occurrence of the storms Manuel and Ingrid. Combining spatial planning and water management in a urban development plan will offer opportunities to decrease probability of flooding and mitigate effects during such events.
3. Effective policy development, planning and implementation: the National Water Plan (2013-2018) has been presented recently. Next is to use this framework for defining more concrete initiatives and a methodology to monitor process. Experience from the Netherlands can be of added value to reach these objectives.

At state level existing problems and future challenges were discussed for Tabasco. In November 2007, and September 2010 storms and heavy rainfall combined to deliver heavy and prolonged flooding to the state of Tabasco, south-east Mexico. Flooding resulted in large scale displacement of people and damage to housing. In December last year (2013) torrential rains caused widespread flooding across Tabasco and again the state of emergency was declared. In 2013 Villahermosa was partly inundated, not as a result from flooding of the rivers but as a result of insufficient drainage capacity of the city.

Additionally to all measures that have been carried out in 2007 – 20013 by the branch office of Conagua in the State of Tabasco, in the framework of the Plan Hídrico Integral de Tabasco (PHI), further structural and non-structural measures are needed to improve FRM and IWRM. These measures will be part of the basic requirements to facilitate economic development that is expected in the years to come. This enhancement of economic development is expected as a result of the Mexican Energy Reform that will allow more foreign investment in the Oil & Gas business in Mexico.

During the mission a series of workshops were held with different groups of actors to identify what still needs to be done to improve the adoption and implementation of integrated water resources management, and to reduce the risks of flooding. These actor groups included the municipalities, regional authorities, non-governmental organizations, the media, universities and the regional Branches of Conagua.

The following priorities were identified during the working sessions:

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Elaboration of an integrated vision: this requires setting up the process architecture and institutional setting and a technical evaluation of the residual flood risks after all the measures taken as part of the PHI carried out by Conagua. Additional measures should take into consideration the objectives of involved and affected actors, given the expected economic social and ecological development.

Capacity building: to facilitate economic development and sustainable use of the water resources it is crucial to increase knowledge of as well as awareness towards the water system and water technology at academic and administrative level. Cooperation between regional and national universities should be improved and the exchange between Mexican and Dutch universities should be intensified through shared training programmes and facilitation of scholarships.

Transboundary river management: to improve management of the Usumacinta river it is necessary to facilitate the cooperation and coordination between Guatemala, Chiapas, Campeche and Tabasco. A short (2-weeks) training course on transboundary river management with the Rhine as case study will challenge participants to identify opportunities for the Usumacinta river.

Erosion and sedimentation in the water system: over the last decade many measures have been implemented to increase the safety level of areas adjacent to the river. These measures have changed the morphological dynamics of the river resulting in sedimentation and erosion processes. Additionally deforestation and the eruption of a volcano in the upstream area have caused an increase in sediment input into the river system. These processes have to be studied to know the effect on the river system and to propose adequate measures.

Water plan for Villahermosa; the water safety in Villahermosa has been increased with the construction of a ring dike and by decreasing the discharge through the river passing the city. Water problems caused by intensive local precipitation is still an issue. During December 2013 the drainage system was not able to discharge the rainwater mainly due to malfunctioning of pumps. A water plan is required to plan urban development in conjunction with water management and a the operational management of the water system has to be evaluated and improved.

Nacajuca; The production of oil has caused social and economic pressure on the development of the region. Special emphasis is required for these regions to assure that they can keep up with the economic, social and ecological development in other parts of the state. In the Nacajuca region several initiatives take place to improve water management and to profit from the economic, social and ecological value that water has. As part of an integrated water management plan for the Tabasco state, the following initiatives were prioritized:

- Facilitate the development of the 12 km stretch of the Nacajuca river as touristic attraction by restoration of the water flow (the river stretch is now frequently stagnant)
- Investigate the possibility of a trade-off between the restoration of the Nacajuca river and the participation of the Nacajuca municipality in the reallocation of the 26 communities that are located in the floodplains of the Samaria river.

Concluding remarks

The above mentioned initiatives are identified to support sustainable management of the water system in function of the economic, social and ecological development that's is foreseen for the years to come. The balance between these three aspects will provide the level of sustainability required. It takes into account the different layers related to land and land use. Furthermore, initiatives are proposed taking into consideration the different levels of water governance (technical content, institutional setting and relational aspects).

Proposed initiatives should be detailed during a follow up mission. During this mission these proposals can be elaborated including a financial paragraph. This follow up mission should also focus on framing the initiatives related to IWRM and FRM in such a way that funding will become available through programmes carried out as a result of the developments induced by the reform of the Mexican Energy Sector.

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