

## TC ABSTRACT

### I. Basic project data

▪ Country/Region:	Regional (beneficiary countries: Mexico and at least one more Latin American country)
▪ TC Name:	Decision Theater for an Effective Water Resources Management in Latin America
▪ TC Number:	RG-T2390
▪ Team Leader/Members:	María Eugenia de la Peña (WSA/CME), Team Leader; Fernando Miralles (INE/WSA), Alternate Team Leader; Irene Cartin (INE/WSA); and Juan Carlos Pérez-Segnini (LEG/SGO)
▪ Indicate if: Operational Support, Client Support, or Research & Dissemination.	Research and Dissemination
▪ Reference to Request <sup>1</sup> : (IDB docs #)	38013622, 38013633, 38013635
▪ Date of TC Abstract:	September 2013
▪ Beneficiary	Regional
▪ Executing Agency and contact name	Instituto Tecnológico de Monterrey
▪ IDB Funding Requested:	US\$1,500,000
▪ Local counterpart funding, if any:	FEMSA: US\$758,242 ITESM: US\$759,432 TOTAL: US\$1,517,674
▪ Disbursement period:	42 months
▪ Required start date:	November 2013
▪ Types of consultants:	Academic Institution
▪ Prepared by Unit:	WSA/CME
▪ Unit of Disbursement Responsibility:	WSA/CME
▪ Included in Country Strategy (y/n);	N/A
▪ TC included in CPD (y/n):	
▪ GCI-9 Sector Priority:	Environmental Sustainability

### II. Objective and Justification

2.1 Meeting water needs in a sustainable manner has been widely recognized as a key area of need by the IDB and other organizations. Due the complexity of water issues, it has become increasingly clear that they require an interdisciplinary management approach called “Integrated Water Resources Management” (IWRM) (Rodriguez Iturbide, 2012). An integrated approach incorporates interests like environment, safety, health, nature development and management, liveability and cultural/historical heritage, economic interests, and social interests. Its aim is to provide insight into all aspects of the problem, in order to reach a balanced and sustainable decision (Kolkman et al., 2005). Effective environmental policy and decision-making requires linking knowledge and action through coordination and communication between individual and institutional actors spanning scientific and political spheres (White et al., 2010).

2.2 In November 2008, the Water Center for Latin America and the Caribbean ([www.watercenter.org](http://www.watercenter.org)) emerged as a joint initiative of the IDB, the Tecnológico de Monterrey and FEMSA Foundation,

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<sup>1</sup> A copy of the Letter of Request, Programming/Portfolio Review Mission Aide Memoire or Report requesting the TC should be submitted with the Abstract.

focused on developing capacities, generate and disseminate knowledge on integrated water management in Latin America and the Caribbean through research, education and dissemination programs.

2.3 Based on the above, the objective of the TC is to support the establishment of a decision theater and the development of accompanying tools and practices for water resources management in pilot studies as a collaborative approach with actors, contributing to bridge the identified gaps of decision making processes in the Latin American water sector in order to: i) increase the understanding of Latin America's decision style and processes in water projects; ii) foster capabilities of knowledge-based decision making in decentralized, consensus-driven water management projects of Latin America's water authorities; iii) create technical expertise in Latin America on developing user-friendly decision-making tools and practices; iv) disseminate the findings of the decision-making experience with interested institutions; and v) develop a business based on the experience with the aid of successful showcases.

2.4 This project is aligned with the lending target of "climate change, sustainable energy and environmental sustainability" of the GCI-9 Bank's policy document.

### III. Description of activities and outputs

The proposed TC entails the following activities, outputs and results:

3.1 **Market analysis with identification of potential users and opportunities for collaboration.** The market analysis will be a tool to assist the decision making process, considering the needs of the water sector in the region with regard to integrated water resources management, analyzing the potential client/users as well as possible competitors and collaborators, and identifying the barriers and the opportunities on how to penetrate the sector. The information derived from this analysis should be sufficient to design an approach strategy by the potentiation of the strengths of the decision theater. It will be used as a base for the development of a business model which can create, deliver, and capture the value for the decision theater.

3.2 **Establishment of a Decision Theater at the Water Center of Latin America and the Caribbean.** This activity consists on the conceptualization of the decision theater, the implementation of the physical infrastructure at the Instituto Tecnológico de Monterrey (ITESM) financed through counterpart funds, the conformation of the core executive unit, hiring human resources and the acquisition of hardware and software for the visualization system and modeling activities.

3.3 **Development of case studies in two Latin American Countries.** This activity includes the selection of two pilot cases based on the results of the market analysis, considering the thematic of the project, the interest of the local government and local research institutions. For each case the following activities will be developed: i) an institutional framework analysis and decision mapping; ii) gathering and generation of information with the establishment of a data base; iii) modeling of components according to the needs of each case considering: surface water (climate scenarios, surface balance, surface quality), groundwater (groundwater balance, groundwater quality), water management (water demand), water economics (socio-economy, agronomy), ecology (terrestrial, aquatic), and land resources (land use, crop productivity); iv) integrated modeling with dynamic simulations, visualization routines and analysis, and evaluation modules that will give the objective support to each of the proposed and tested scenarios. The outcomes will provide the information necessary for the decision-making process through workshops mediated by a professional.

3.4 **Network of best practices.** For this activity, the existing LatinAqua network will be used. It is an academic network aimed at collaboration in training and research and created to share the best experiences in the water sector. Information provided by members of the network will be analyzed with the aim of building relevant indicators and index costs that will serve as an input for the impact evaluation and the results generation during the simulation of scenarios in the decision theater. This may lead to the implementation of decision theaters in other countries of the region or to establish the mechanism of collaboration between the different institutions in this type of projects.

3.5 **Outreach for disseminations and capacity building workshops.** This activity consists on the translation of the findings into practice-based guidance for the provision and use of decision tools in the two case studies. The project will be complemented with a dissemination plan, including appropriate manuals; online web contents describing the processes and outcomes, their strengths and limitations; capacity building workshops to take place within the study areas and other locations in Latin America interested in implementing knowledge-based decision making in water management; and the link to the IDB countries in order to use the tool in its different operations. This will help to reduce the communication gap that exists between different authorities, users and experts.

3.6 The expected outputs and results are presented below:

<b>Outcomes</b>			
	<b>Indicator</b>	<b>Base Line</b>	<b>Meta</b>
Number of times the pilot project has been scaled-up or replicated in other interventions	Number of times	0	5
Number of times knowledge produced has been used as input for programming and strategy documents	Number of times	0	5
<b>Outputs</b>			
	<b>Indicator</b>	<b>Base Line</b>	<b>Meta</b>
Market diagnosis and business strategy implemented	Diagnosis	0	1
Diagnosis of the development and strategy for physical installation of the DT implemented	Diagnosis	0	1
Pilot projects implemented	Project	0	2
Diagnosis on institutional framework and decision mapping completed	Diagnosis	0	1
New database with information of the pilot cases generated	Database	0	1
Technical note on best practices for the provision and use of decision tools in the two pilot cases completed	Note	0	1
Manual of the Decision Theater completed	Manual	0	1
Workshops on IWRM and Decision Making delivered	Workshop	0	5
International conferences organized	Conference	0	3
Scientific publications elaborated	Publication	0	5

#### IV. Budget

4.1 The total cost of this TC is US \$3,039,922. The budget by activity is presented below:

**Indicative Budget (US\$)**

Activity/Component	IDB	Counterpart Funding		Total Funding
		Fundación FEMSA	ITESM	
1. Identification of potential users and opportunities	-	30,000	30,000	60,000
2. Establishment of Decision Theater	447,912	404,000	270,000	1,121,912
3. Development cases in 2 Latin American countries	807,264	-	406,800	1,214,064
4. Network of Best Practices	229,824	-	-	229,824
5. Outreach for dissemination and capacity building workshops	-	222,242	28,152	250,394
Administration	-	102,000	24,480	126,480
Evaluations and Audits	15,000	-	-	15,000
<b>Total</b>	<b>1,500,000</b>	<b>758,242</b>	<b>759,432</b>	<b>3,017,674</b>

#### V. Executing agency and execution structure

5.1 The TC will be executed by the Instituto Tecnológico de Monterrey. The execution of this TC will provide a learning, knowledge transfer and data gathering opportunity for the staff of the Water Center of Latin America and the Caribbean and the Water and Sanitation Division of the Bank, which is a relatively new area of work that both institutions have engaged in recently.

#### VI. Project Risks and issues

6.1 The primary risk for implementation of this TC is the lack of commitment over time of the institutions and stakeholders involved in implementing the decision-based policies. To mitigate this risk, it is proposed that the first case study should be developed in Mexico; after that, conversations with water resources management agencies/authorities in the selected case studies could initiate. In addition, a first recognition mission is proposed to be carried out jointly with the Bank, with the objective of engaging local key stakeholders by discussing the objective of the studies and services to be developed.

6.2 An additional risk is the lack of experience with participative decision making using decision theaters throughout the region. To mitigate this risk, it is proposed to consider the collaboration of an experienced institution in developing the case studies. Arizona State University and Stockholm Environmental Institute have offered their technical assistance.

#### VII. Environmental and Social Classification

7.2 According to the Environment and Safeguards Compliance Policy, it has been determined that this project will not cause negative environmental or social impacts, so it is classified as Category C.