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# Annex 1. Workshop programme

## AFRICA.



**EU Research Project Twin2Go Regional Best Practice and Tools (BPT) Workshop:  
Johannesburg, South Africa, 31 January – 2 February 2011**

<b>Day 1</b>	
<b>Morning session</b>	
8:30 – 9:00	➤ Registration of participants
9:00 – 9:15	➤ Welcome and introduction Twin2Go and the WP3 Regional Best Practice and Tools Workshop
9:15 – 9:30	➤ Short introduction of participants
9.30 – 10:30	<ul style="list-style-type: none"> <li>➤ Presentation of Twin2Go WP2 results and methodology</li> <li>➤ Case presentation: Okavango River Basin</li> </ul>
10:30 – 10:45	Coffee break
10:45 – 12:00	<ul style="list-style-type: none"> <li>➤ Introduction to the Twin2Go WP3</li> <li>➤ Presentation of examples of BP&amp;T from Twin2Go developed by Twin2Go team and other Twin2Go workshops</li> <li>➤ Questions from Plenary</li> </ul>
12:00 – 13:00	Workshop Lunch
<b>Afternoon session</b>	
13:00 – 13:30	➤ Presentation of the GWP <i>Toolbox and its best practices</i>
13:30 – 13:45	➤ Introduction to <i>Working Group session 1</i>
13:45 – 15:45	<p style="text-align: center;"><i>Working group session 1(A)</i></p> <ul style="list-style-type: none"> <li>➤ Formation of groups- nominating a chair and rapporteur for session 1</li> <li>➤ The groups are asked to focus on BP&amp;T with focus on either <i>i)</i> Application of national water frameworks in river basins, <i>ii)</i> Engagement and coordination among actors, <i>iii)</i> Enabling learning and building adaptive capacity in water governance</li> </ul>
15:45 – 16:00	Coffee break
16:00 – 17:00	<p style="text-align: center;"><i>Working Group session 1(B) (cont.)</i></p> <ul style="list-style-type: none"> <li>➤ BP&amp;T developed in session 1 A to be filled in BP&amp;T summaries</li> </ul>

	Workshop dinner
<b>Day 2</b>	
<b>Morning session</b>	
09:00 – 10:30	<p><i>Plenary session</i></p> <ul style="list-style-type: none"> <li>➤ Presentation and discussion of BP&amp;T's identified. Discussion of key messages from Working Group 1 sessions.</li> </ul>
10:30 – 10:45	Coffee break
10:45 – 11:00	Introduction to <i>Working Group session 2</i>
11:00 – 12:00	<p><i>Working Group session 2</i></p> <ul style="list-style-type: none"> <li>➤ Nominating a chair and rapporteur for session 2</li> <li>➤ Discussion of application of BP&amp;T's - opportunities and barriers to use the BP&amp;T's at regional level.</li> </ul>
12:00 – 13:00	Workshop Lunch
13:00 – 15:00	<p><i>Working Group session 2 (cont.)</i></p> <ul style="list-style-type: none"> <li>➤ Key opportunities and barriers</li> </ul>
15:00 – 15:30	Coffee break
<b>Afternoon session</b>	
15:30 – 17:30	<p><i>Plenary session</i></p> <ul style="list-style-type: none"> <li>➤ Application of Regional BP&amp;T: What are the key messages from the working groups and from the session 2?</li> </ul>
	Workshop Dinner
<b>Day 3</b>	
<b>Morning session</b>	
9:00 – 12:30	<p><i>Plenary session</i></p> <ul style="list-style-type: none"> <li>➤ Key results of Twin2Go WP3 Regional Best Practice Workshop - Observations, recommendations</li> </ul>
12:30 – 12:45	Conclusions and closure of the workshop
12:45 – 13:30	Workshop Lunch

# RUSSIA



## TWIN2GO REGIONAL WORKSHOP PROGRAMME (RUSSIANIS) ***BEST PRACTICES and TOOLS IN WATER GOVERNANCE***

Berlin, Germany 15-17 January 2011

### DAY 1. 15<sup>th</sup> January

09:45-10:00	<b>Registration</b>	
<b>Plenary Session 1: About Twin2Go</b> <b>Moderator: E. Nikitina</b>		
10:00-10:05	Opening	
10:05-10:15	Presentation of Experts	
10:15-10:35	About Twin2Go and its provisional results	
10:35-10:55	Methods of analysis: – “A-Scores” Method	
10:55-11:05	Discussion	
10:05-11:20	Coffee-break	
<b>Plenary Session 2: Best Practices in water governance</b> <b>Moderator I. Gromova</b>		
11:20-11:40	Approaches to assessment of Best Practices in water governance	
11:40-12:00	Transfer of Best Practices in water governance	
12:00-12:10	Discussion	
12:10-13:10	Lunch	
<b>Plenary Session 3: Experts Dialogue – Challenges for the Working Groups</b> <b>Moderator E. Nikitina</b>		
13:10-13:30	Expected Outcomes: Exchange of lessons, Summary Table, Recommendations for the Region	
13:30-15:30	2 Expert Groups: Discussion of experts’ stories and examples, exchange of lessons and main messages E.Ostrovskaya, E.Nikitina	
15:30-15:45	Coffee-break	
15:45-17:00	2 Expert Groups: Continue	
17:00-17:30	Review of Provisional results and messages	
18:00-19:00	Dinner	

### DAY 2. 16<sup>th</sup> of January

10:00-11:30	2 Expert Groups: Continue	
11:30-11:45	Coffee-break	
11:45-12:15	2 Expert Groups: Continue	

12:15-13:30	Filling-in individual Inventories (Form-1)
13:30-14:30	Lunch
14:30-16:00	2 Expert Groups: Summary Table (Form-2) and Recommendations
16:00-16:15	Coffee-break
16:15-18:00	2 Expert Groups: Summary Table (Form-2) and Recommendations
18:00-19:00	Dinner

**DAY 3. 17<sup>th</sup> of January**

<b>Plenary Session 4: Results of Experts' Dialogue</b>	
<b>Moderator M.Fomenko</b>	
10:00-12:00	1st Expert Group Report 2nd Expert Group Report
12:00-12:15	Coffee-break
12:15-14:00	General Discussion. Strategic Vision and Recommendations for the Region
14:00-15:00	Lunch

## SOUTH EAST ASIA

Day 1 (17 <sup>th</sup> January 2011)				
09:00 – 09:30	<b>Registry of participants</b>			
09:30 – 09:35	Welcome			
09:35 – 09:45	Introduction of workshop participants (by all)			
09:45 – 10:30	<b>Presentation:</b> Overview Twin2Go project objectives and methodology			
10:30 – 10:45	<i>Coffee break</i>			
10:45 – 11:30	<b>Presentation:</b> Twin2Go Synthesis activities and discussion			
11:30 – 12:00	<b>Regional background presentation NE India</b> Water induced hazards, climate change and adaptation in northeast India: Core issues and governance			
12:00 – 13:00	<i>Lunch</i>			
13:00 – 13:40	<b>Regional background presentation Nepal</b> From Policy to Practice: An Experience in Kosi River Basin Management			
13:40 – 14:10	<b>Regional background presentation Thailand</b> Bangpakong and Prachinburi River basin			
14:10 – 14:30	<i>Coffee break</i>			
14:30 – 15:00	<b>Regional background presentation Vietnam</b> River Basin Management in the Red River			
16:00	Outlook and Closure Day 1			
19:00	Workshop Dinner			
Day 2 (18 <sup>th</sup> January 2011)				
09:00	Introduction Day 2			
09:10 – 10:00	<b>Presentation:</b> Lessons from the BRAHMATWINN project. Establishment of an RBIS user group			
10:00 – 10:30	<b>Presentation:</b> Introduction to Best practices & Tools			
10:30 – 10:45	<i>Coffee break</i>			
10:45 – 11:30	<b>Group work 1</b> on best practices applied/ filling in inventory format Section 1			
	<b>Nepal</b>	<b>India</b>	<b>Thailand</b>	<b>Vietnam</b>
11:30 – 12:00	Presentation of best practices selected in groups by one representative person of each group, evaluation of inventory format			

	Discussion			
12:00 – 13:00	Lunch			
13:00 – 13:15	Group Photograph			
13:15 – 14:00	<b>Group work 2</b> on context of best practices applied/ filling in inventory format Section 2			
	<b>Nepal</b>	<b>India</b>	<b>Thailand</b>	<b>Vietnam</b>
14:00 – 14:45	Presentation of context for BP&T implementation by one representative person of each group Discussion			
14:45 – 15:00	Coffee break			
15:00 – 15:45	<b>Group work 3</b> on performance and effectiveness of best practices applied/ filling in inventory format Section 3			
	<b>Nepal</b>	<b>India</b>	<b>Thailand</b>	<b>Vietnam</b>
15:45 – 16:30	Presentation of performance and effectiveness of BP&T by group representative Discussion			
16:30	Outlook and closure Day 2			
<b>Day 3 (19<sup>th</sup> January 2011)</b>				
09:00	Introduction Day 3			
09:15 – 10:00	<b>Group work 4</b> on transferability, focus on export and import of BP&T			
	<b>Nepal</b>	<b>India</b>	<b>Thailand</b>	<b>Vietnam</b>
10:00 – 10:45	Presentation of results and discussion			
10:45 – 11:00	Coffee break			
11:00 – 12:30	<b>Final discussion on major challenges and general recommendations for the region South East Asia</b>			
12:30	Outlook and Closure of WS			
12:45	Lunch			

## LATIN AMERICA

### WORKSHOP PROGRAMME

#### *Day 1*

##### MORNING SESSION

8:30 9:00 *Registry of participants*

9:00 9:15 Welcome and introduction to the 2<sup>nd</sup> Regional Workshop

9:15 9:30 Short introduction of participants

9:30 10:00 Adaptive water governance - context and methodology of Twin2Go activities

10:00 10:30 *Case study presentation: "Adaptive Governance in the Lake Titicaca Basin: progress and challenges for the future"*

10:30 10:45 *Coffee break*

10:45 12:00 Presentation and joint analysis and discussion of examples "Best Practices and Tools" identified by the Twin2Go team (illustration of the identification sheet approach)

12:00 13:00 *Lunch*

##### AFTERNOON SESSION

13:00 15:30 Work session: filling in the identification sheet for the Latin-American Twin2Go case studies

15:30 15:45 *Coffee break*

15:45 17:30 Presentation, per basin, of results from the work session exercise. Analysis and group discussion of the presented cases (first session)

#### *Day 2*

##### MORNING SESSION

9:00 10:30 Presentation of results from the integrated analysis of results from the "Workshop 1 questionnaires" + discussion.

10:30 11:00 *Coffee break*

11:00 12:30 Presentation, per basin, of results from the work session exercise. Special attention to transboundary Basins Analysis and group discussion of the presented cases (second session).

12:30 13:30 *Lunch*



## AFTERNOON SESSION

**13:30 15:30** Work session: focus on Barriers – Constraints – Reasons for Success / Failure

*15:30 16:00 Coffee break*

**16:00 17:00** Presentation and discussion of results – wrap-up.

**17:00 17:30** Plenary Session. Conclusions of the workshop. Observations, recommendations, future work

## Annex 2. Workshop participants

### AFRICA. List of Workshop participants

	Contact (Surname)	Contact (Name)	Organisation / Institution
1.	Diallo	Mori	Wetlands International, Mali Office
2.	Schreiner	Barbara	Pegasys
3.	Chonguica	Eben	OKACOM
4.	Ramaano	Michael	Kalahari Conservation Society
5.	Kinnear	Boniface	Kalahari Conservation Society
6.	Nthathakane	Peter	GWP Lesotho
7.	Thuo	Simon	GWP Eastern Africa
8.	Kitamirike	Jackson	Directorate of Water Resource Management
9.	Kathrin	Knüppe	Osnabrueck University
10.	Takawira	Andrew	GWP South Africa
11.	Interwies	Eduard	InterSus - Sustainability Services
12.	Qwist-Hoffmann	Peter	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
13.	Molefi	Tracy	International Waters Unit, Ministry of Mineral, Energy and Water Resources, Botswana
14.	Lindgaard-Jørgensen	Palle	DHI
15.	Raben	Kim	DHI
16.	Thamae	Lenka	ORASECOM

## RUSSIA. List of Workshop participants

<b>№</b>	<b>Name</b>	<b>Company</b>	<b>Country</b>
1.	Mrs. COMARDICEA Irina	Adelphi research gemeinnützige GmbH	Germany
2.	Mrs. DORONINA Tatiana	EMERCOM Nizhny Novgorod	Russia
3.	Dr. FEHÉR János	VITUKI Environmental and Water Management Research Institute Non-profit Ltd.	Hungary
4.	Dr. FOMENKO Marina	CADASTER Institute	Russia
5.	Dr. FOMENKO Georgy	Science & Technology Council, RF Ministry for Natural Resources	Russia
6.	Mrs. GROMOVA Irina	PhosAgro AG Cherepovets	Russia
7.	Dr. HIRSCH Darya	UNU Bonn	Germany
8.	Mr. IVANOV Alexander	N.Novgorod State University on Architecture and Civil Engineering	Russia
9.	Mr. KASCHENKO Oleg	UNESCO Chair	Russia
10.	Mrs. KRAMER Annika	Adelphi research gemeinnützige GmbH	Germany
11.	Dr. NIKITINA Elena	EcoPolicy Research and Consulting	Russia
12.	Mrs. OSTROVSKAYA Elena	UNESCO-IHE	The Netherlands
13.	Mr. SENIK Yaroslav	Ammophos	Russia
14.	Mrs. SLADKOVA Ekaterina		Germany
15.	Ms. SMARAGDOVA Olga	EcoPolicy Research and Consulting	Russia
16.	Mrs. SOSIPATROVA Elena	PhosAgro AG	Russia
17.	Mrs. STERNER Elsa	Adelphi research gemeinnützige GmbH	Germany
18.	Mrs. KRANZ Nicole	FU Berlin	Germany

## SOUTH EAST ASIA. List of Workshop participants

No.	Surname	First Names	Country	Organisation
1	Prof. Dr. Flügel	Wolfgang-Albert	Germany	Friedrich-Schiller University (FSU-Jena), Dept. Of Geoinformatics, Hydrology and Modelling (DGHM)
2	Bartosch	Anita		Friedrich-Schiller University (FSU-Jena), Dept. Of Geoinformatics, Hydrology and Modelling (DGHM)
3	Sharma	Nayan	India	Indian Institute of Technology (IIT)
4	Sharma	Pradip		Department of Geography, Cotton College
5	Mitra	Anup		Government of India
6	Goswami	Padma Sharma		Department of Economics, Cotton College Guwahati, Assam
7	Tiwari	Brajesh K.		North-Eastern Hill University Head Dept. of Environmental Studies
8	Khataniar	Rabin Jyoti		B.H.College
9	Das	Partha J.		Water, Climate & Hazard(WATCH) Programme, AARANYAK
10	Rahman	Mahfuza		Geography Department, Cotton College
11	Borah	Jayasree		Geography Department, Cotton College
12	Mipun	B.S.		Department of Geography, North-Eastern-Hill University

13	Sharma	Keshav Prasad	Nepal	Department of Hydrology and Meteorology (DHM), Ministry of Environment
14	Thapa	Iswar Singh		Water and Energy Commission Secretariat (WECS), Government of Nepal
15	Bach Tan	Sinh	Vietnam	National Institute for Science and Technology Policy and Strategic Studies, Ministry of Science and Technology,
16	Tu Dao	Trong		Centre for Sustainable Water Resources Development and Adaptation to Climate Change (CEWAREC) and Member for Vietnam in Global Water Partnership South East Asia Steering Committee (GWP SEA)
17	Quock Hung	Pham		Department of Water Resources and Rural Water Supply Management, Directorate of Water Resources
18	Wandee	Kanapoj	Thailand	Bureau of Water Management, Department of Water Resources
19	Naowvabutra	Thumapong		Bureau of Water Management, Department of Water Resources
20	Purotaganon	Man		Thai Water Partnership

## LATIN AMERICA. List of Workshop participants

1	Oscar	Tosse	Ministry of Environment, Water Resources Group	Colombia
2	Silvana	Alcoz	Ministry of Environment	Uruguay
3	Rafaela	Retamal	PhD Student, EULA, University of Concepción	Chile
4	Fernando	Meirelles	Researcher, IPH – UFRGS	Brazil
6	Francisco	Riestra	Head Compliance Unit, General Water Directorate	Chile
7	Fabian	Espinoza	Regional Director, General Water Directorate	Chile
8	Paul	Herrera	Researcher, ESPOL	Ecuador
9	Luis A.	Sanchez	Binational Authority of the Titicaca Basin	Bolivia
10	Tulio	Santoyo	GTZ / Regional Government of Piura	Peru
11	Bart	Delvaux	Researcher, Twinlatin	Belgium
12	Fernando	Quirola	Regional Water Demarcation	Ecuador
13	Amparo	Duque	Regional Environmental Authority Cauca CVC	Colombia
14	Robinson	Torres	Researcher, University of Concepción	Chile
15	Juan Pablo	Martines	Regional Director, Regional Water Demarcation	Ecuador
16	Gonzalo	Barreiro	Regional Director, Regional Water Demarcation	Ecuador
17	Juan Carlos	Alurralde	NGO Aguas Sustentables, Government Advisor	Bolivia
18	Patrick	Debels	Twin2Go, workshop coordinator/facilitator	Belgium

## Annex 3. BP&T inventories from Four Regions

### AFRICA: BP&T inventories by experts (form 1)

BP&T inventories have been elaborated based on references and documents received during the workshop.

**№ 1**

**Name: Compensation for restoring and maintaining ecosystem services especially in times of food insecurities**

**Focus № 1**

**Basin/Country/Region Inner Niger Delta, Mali<sup>1</sup>**

#### Section I. BP&T APPLIED

**1. What exactly was the best practice or tool?**

A micro-project supported by loan. Community members in villages established grain banks. The loans for the grain banks were obtained through the exchange for work to protect and restore fish ponds by digging canals to connect fishponds to the River Niger. For example a village bought an initial stock of 4 tons during the rainy season, which is when food is scarce. After the rice harvest, the grain bank was refilled. After paying all the costs, the group earned a profit of 305 Euro.

**2. With what purpose and reason of its application?**

The BP&T is part of the Wetlands International's demonstration project that works with local communities and authorities to improve management and restoration of the natural resources of the area. The project works with 'bio-rights approach'; Wetlands International's approach to using microcredit to pay for environmental services. This approach aims to provide poor rural people with access to finance to improve their livelihoods and promote biodiversity conservation.

**3. Who applied it (i.e. authorities, water-users, civil society, international agencies), and what stakeholders were involved?**

The grain bank was initiated by Wetlands International and involved local communities and municipalities. Three national microcredit institutions handled the loan programme.

**4. Were any regulatory enforcement and incentive mechanisms used to support BP&T application?**

The loans for the grain bank.

#### Section II. CONTEXT FOR BP&T IMPLEMENTATION

**5. What were the major socio-economic or political constraints/barriers for BP&T application?**

The major constraint to the BP&T is access to microcredit, but also women's limited access to land and water rights are key barriers.

**6. What were the major constraints/barriers rooted in domestic water governance designs?**

The multiple rights shared by different people to land, water and vegetation.

**7. What were opportunities and drivers for BP&T application?**

Challenges such as increasing demand of water, environmental degradation, climate change and poverty were the main drivers for the BP&T application.

#### Section III. PERFORMANCE and EFFECTIVENESS

**8. What was the degree of success, or failure in BP&T application in the river basin?**

The project catalysed the return of native species in specific area. Food security increased through the establishment of grain banks and reduced overuse of resources during low production seasons. However, a high illiteracy rate resulted in slower uptake of the concept.

**9. Did application of BP&T result in further development of capacity (regulatory, administrative, human, etc.) for adaptive water governance in river basins?**

The project build capacity among local people, local elected officials, local government and service providers and advised the on sustainable approaches to development and conservation.

<sup>1</sup> Wetlands International (2009) and workshop participants

The project changed policy at various levels. At the local level agreements on how to manage ponds were reached. At the national level, the project contributed to implementing Mali's national wetlands policy. At the international level, the project pushed for the Niger Basin Authority to consider the restoration of fishponds in its sustainable development action plan.

**10. Did application of BP&T result in changes towards more adaptive behaviour of stakeholders?**

Yes, it provided local people with sustainable management of natural resources and sensitised them to the linkages between biodiversity and livelihoods.

**11. Did application of BP&T contribute (and to what possible extent) to problem-solving, or its mitigation)?**

**Section IV. EXPORT- IMPORT of BP&T ACROSS COUNTRIES and BASINS**

**12. Examples of BP&T transferred across countries, river basins and stakeholder groups**

**13. Did BP&T transferred required adaptation (and to what extent) to local context and domestic specifics?**

**14. What were the major barriers and opportunities for transfer and adaptation of BP&T?**

Barriers: Has mostly been applied successfully at rural local hot spots (the poorest of the poor living in sensitive environments); potential high transaction costs.

Opportunities: "Hot spot" approach in sensitive environments under pressure from development and climate change effects. Could have a role in increasing resilience and food security as well as in restoration and maintenance of particularly sensitive ecosystems.

Potentially up-scaling and broadening is possible. However, it needs strong monitoring and feed-back mechanisms to the actual implementation. Further it needs political support and strong national and local management frameworks.

**15. What was the 'external' influence in your BP&T implementation?**

**Section V. RECOMMENDATIONS about MAJOR CHALLENGES for the REGION**

The major challenge is how to sustain funding so it can continue and be extended, i.e. through national microcredit programmes. This is an approach which was applied 40-50 years ago and forgotten, but which in view of climate change, population growth and water stress and food insecurity could be revived. It's a challenging tool to apply. It needs a strong political support and strong local leadership and management. Piloting the BP&T systematically in a number of hot spots to learn and improve the applicability of the tool is highly advisable.

**№ 2**

**Name: Leveraging national water priorities to support transboundary cooperation (Kenya)**

**Focus № 1**

**Basin/Country/Region Lake Victoria Basin, Kenya**

**Section I. BP&T APPLIED**

**1. What exactly was the best practice or tool?**

To break the IWRM plan into specific catchment plans and subsequently bring transboundary issues on board.

**2. With what purpose and reason of its application?**

The major purpose of the BP&T was the development of catchments management plans in order to address floods, droughts and food security. Increased water availability without compromising the net basin supply was another major objective.

**3. Who applied it (i.e. authorities, water-users, civil society, international agencies), and what stakeholders were involved?**

Actors involved in the implementation of the BP&T included ministries for water, ministries for economic planning, regional development authorities, Lake Victoria Basin Commission, WMO- (integrated flood mgmt.) and GWP (as facilitators).

**4. Were any regulatory enforcement and incentive mechanisms used to support BP&T application?**

**Section II. CONTEXT FOR BP&T IMPLEMENTATION**

**5. What were the major socio-economic or political constraints/barriers for BP&T application?**

**6. What were the major constraints/barriers rooted in domestic water governance designs?**

**7. What were opportunities and drivers for BP&T application?**



### Section III. PERFORMANCE and EFFECTIVENESS

#### 8. What was the degree of success, or failure in BP&T application in the river basin?

The BP&T helped increase the visibility of the Lake Victoria Basin Commission as an important regional mediator agency in the basin. Programmes were revived and performance improved. This facilitated an increasing food production and improved livelihood in local communities. The riparian countries created a data sharing protocol.

Lack of capacity in terms of human resources at the catchments' management agency as well as competition from other government departments were considered as constraints for the implementation of the BP&T.

#### 9. Did application of BP&T result in further development of capacity (regulatory, administrative, human, etc.) for adaptive water governance in river basins?

#### 10. Did application of BP&T result in changes towards more adaptive behaviour of stakeholders?

#### 11. Did application of BP&T contribute (and to what possible extent) to problem-solving, or its mitigation)?

### Section IV. EXPORT- IMPORT of BP&T ACROSS COUNTRIES and BASINS

#### 12. Examples of BP&T transferred across countries, river basins and stakeholder groups

#### 13. Did BP&T transferred required adaptation (and to what extent) to local context and domestic specifics?

#### 14. What were the major barriers and opportunities for transfer and adaptation of BP&T?

#### 15. What was the 'external' influence in your BP&T implementation?

### Section V. RECOMMENDATIONS about MAJOR CHALLENGES for the REGION

Policy recommendation: Open up for community representation in transboundary water management, thus leading to better understanding of the situation and acceptance of development and conservation activities.

#### № 3

#### Name: Bottom-up approach for stakeholder participation in transboundary river basins (Every River Has Its People Project)

#### Focus № 2

#### Basin/Country/Region Okavango River Basin, Angola, Namibia, Botswana<sup>2</sup>

### Section I. BP&T APPLIED

#### 1. What exactly was the best practice or tool?

Establishment of governance structures which enables community participation in basin management, planning and decision making. Chair of the basin wide forum sits in the Okavango River Basin Commission (OKACOM) thus being well-informed and consulted in the decision-making process as opposed to directly having a vote.

#### 2. With what purpose and reason of its application?

The Every River Has Its People Project (ERP) is an initiative on shared river basin management approach implemented in the Okavango River Basin in order to facilitate community participation in the Permanent Okavango Commission (OKACOM) i.e. mobilization of local aspirations into the overall river basin management.

#### 3. Who applied it (i.e. authorities, water-users, civil society, international agencies), and what stakeholders were involved?

The BP&T was applied by the Association for Environmental Conservation and Rural Development (ACADIR), Kalahari Conservation Society (KCS) and Namibia Nature Foundation (NNF). Stakeholders are the community representatives from each country in the basin, NGOs and CBOs.

#### 4. Were any regulatory enforcement and incentive mechanisms used to support BP&T application?

### Section II. CONTEXT FOR BP&T IMPLEMENTATION

#### 5. What were the major socio-economic or political constraints/barriers for BP&T application?

Among the barriers are the political instability in the basin, low capacity of communities to deal with issues at hand, the question of sustainability of the forum after project termination.

#### 6. What were the major constraints/barriers rooted in domestic water governance designs?

#### 7. What were opportunities and drivers for BP&T application?

<sup>2</sup> Kalahari Conservation Society (2011) and workshop participants.

Threats to people's livelihoods, degradations of ecosystems and the potential for development led to mobilization of communities and NGOs. Governments and international donors supported the needs for changes and provided the financial support. Another driver was the opportunity to establish business ventures encouraging entrepreneurs to engage.

### Section III. PERFORMANCE and EFFECTIVENESS

**8. What was the degree of success, or failure in BP&T application in the river basin?**

The project has been a success. Communities have been capacitated to manage their resources sustainably as well as to take part effectively in decision making on matters related to the development of the Okavango River Basin needs. Cross-border visits among communities have taken place. A platform for better interaction between communities and business sectors e.g. tourism has been established. Indigenous knowledge has been brought into the management scheme.

**9. Did application of BP&T result in further development of capacity (regulatory, administrative, human, etc.) for adaptive water governance in river basins?**

The BP&T resulted in a range of education material, tools and programs and created mechanisms for community participation and community led action in natural resource decision-making and management. It also strengthened the institutional structure of the river basin commission.

**10. Did application of BP&T result in changes towards more adaptive behaviour of stakeholders?**

It improved the participation of communities in the Okavango Basin Management and increased stakeholder understanding of the river basin.

**11. Did application of BP&T contribute (and to what possible extent) to problem-solving, or its mitigation)?**

The open-ended and flexible approach is suitable for accommodating communities in the basin. Feelings of mistrust arising from misinformation and outright ignorance can be dispelled.

### Section IV. EXPORT- IMPORT of BP&T ACROSS COUNTRIES and BASINS

**12. Examples of BP&T transferred across countries, river basins and stakeholder groups**

Other basins have shown interest in replicating the project into the management of their basins.

**13. Did BP&T transferred required adaptation (and to what extent) to local context and domestic specifics?**

**14. What were the major barriers and opportunities for transfer and adaptation of BP&T?**

Opportunities: Has a potential to be used in smaller (number of countries and number of communities) transboundary basins to include the very local voice at the transboundary level for e.g. large scheme developments. Existing community organizations or platforms like resource user groups can also be used to establish platforms for transboundary water governance.

Barriers: Basins with a large number of riparian states may have difficulties in applying the BP&T, due to the potential number of communities to be involved and the diversity of local dependencies of water. Applying it in larger basins would be possible.

**15. What was the 'external' influence in your BP&T implementation?**

### Section V. RECOMMENDATIONS about MAJOR CHALLENGES for the REGION

The recommendation is to open up for community representation in transboundary water management, thus leading to better understanding of the situation and acceptance of development and conservation activities.

**№ 4**

**Name: Early stakeholder mapping for improved operationalization of the Limpopo Agreement**

**Focus № 2**

**Basin/Country/Region Limpopo river basin, South Africa, Botswana, Zimbabwe, Mozambique<sup>3</sup>**

### Section I. BP&T APPLIED

**1. What exactly was the best practice or tool?**

First step of a rapid assessment of stakeholder mapping within the four riparian countries as basis to further develop the stakeholder integration strategy. Outcomes of the rapid mapping process were presented to the Limpopo Watercourse Commission (LIMCOM) which, in line with the SADC Water Sector, is committed to the principles of Integrated Water Resources Management.

**2. With what purpose and reason of its application?**

<sup>3</sup> Limpopo Basin Permanent Technical Committee (2010) and workshop participants.

The BP&T is a part of the process to promote stakeholder participation in the management of water resources in the transboundary Limpopo River basin. This is done through an early identification of major stakeholder's characteristics for an improved engagement strategy to better implement the Limpopo agreement.

**3. Who applied it (i.e. authorities, water-users, civil society, international agencies), and what stakeholders were involved?**

Limpopo Basin Permanent Technical Committee and the water sector in all four riparian countries applied the BP&T. Stakeholders involved were River Basin Organisations, National Government, Local Governments, NGOs and CBOs.

**4. Were any regulatory enforcement and incentive mechanisms used to support BP&T application?**

Early stakeholder mapping was taking place within an already well-developed SADC regional legal, policy and institutional framework, including regional guidelines for stakeholder participation in transboundary river basin. It was also important to comply with both the legal and policy commitments made by the basins states at regional level.

**Section II. CONTEXT FOR BP&T IMPLEMENTATION**

**5. What were the major socio-economic or political constraints/barriers for BP&T application?**

An early and broad stakeholder involvement is time-consuming.

The BP&T might experience limitations in the ability to bring representatives of different stakeholders.

Funding availability can also be a barrier.

**6. What were the major constraints/barriers rooted in domestic water governance designs?**

- Botswana: A need for decentralization of decision-making in order to improve direct stakeholder participation.
- Mozambique: Limited experience in participation of beneficiaries in water resources management.
- Zimbabwe: New Water Act created stakeholder platforms where all identified stakeholders could participate in the management. However, these new institutions faced numerous challenges.
- South Africa: National-level legal and institutional frameworks, structures and procedures for stakeholder participation are in place. There remain challenges to effective implementation and many existing stakeholder structures are not operational.

**7. What were opportunities and drivers for BP&T application?**

Improved implementation of the terms of the agreement through the identification of stakeholders at an earlier stage. Involvement of relevant stakeholders within the basin.

Challenges such as increasing demand of water, environmental degradation and climate change were also drivers for the BP&T application.

**Section III. PERFORMANCE and EFFECTIVENESS**

**8. What was the degree of success, or failure in BP&T application in the river basin?**

As a result of the early stakeholder mapping platforms for development for countries have been established. The Commission was satisfied with the mapping outcomes and has an appreciation of stakeholder dynamics within each of the riparian States. No problems encountered so far. Identified stakeholder groups could have been more profound involved and consulted.

**9. Did application of BP&T result in further development of capacity (regulatory, administrative, human, etc.) for adaptive water governance in river basins?**

**10. Did application of BP&T result in changes towards more adaptive behaviour of stakeholders?**

**11. Did application of BP&T contribute (and to what possible extent) to problem-solving, or its mitigation)?**

**Section IV. EXPORT- IMPORT of BP&T ACROSS COUNTRIES and BASINS**

**12. Examples of BP&T transferred across countries, river basins and stakeholder groups**

**13. Did BP&T transferred required adaptation (and to what extent) to local context and domestic specifics?**

**14. What were the major barriers and opportunities for transfer and adaptation of BP&T?**

Barriers: Basins with a large number of riparian states might have difficulties in applying the BP&T, due to the number of communities involved and the diversity of local dependencies of water.

There is a need for good cooperation structures and information transfer from local level to national level and vice versa.

Weak capacity development with grass roots organizations (e.g. no access to information and knowledge)

Opportunities: To get all key stakeholders including the very local voices (least powerful) heard at the transboundary level for e.g. large scheme developments, to increase effectiveness of proposed development.

**15. What was the 'external' influence in your BP&T implementation?**

## Section V. RECOMMENDATIONS about MAJOR CHALLENGES for the REGION

To use, capacitate and empower existing community organizations or social structures like resource user groups to ensure more sustainable and efficient (inclusiveness) management for holistic water resources management. Understanding and engaging the stakeholders earlier after agreeing on cooperation frameworks helps shape the governance framework and supports its acceptance and implementation. Design and manage relevant stakeholder engagement to ensure an efficient governance framework.

### № 5

**Name: Creating an enabling environment through inclusive and equitable knowledge and capacity building**

**Focus № 3**

**Basin/Country/Region Orange-Senqu river basin, Botswana, Lesotho, Namibia and South Africa<sup>4</sup>**

## Section I. BP&T APPLIED

### 1. What exactly was the best practice or tool?

To create an enabling environment through the establishment of decision support systems for the river basin; and to carry out joint basin surveys on water quality and quantity. Finally, to facilitate the availability and accessibility of the information.

### 2. With what purpose and reason of its application?

The purpose of the BP&T was to promote trust among stakeholders, increase transparency and establish a common understanding of the river basin as a unit.

### 3. Who applied it (i.e. authorities, water-users, civil society, international agencies), and what stakeholders were involved?

Government officials applied the BP&T.

### 4. Were any regulatory enforcement and incentive mechanisms used to support BP&T application?

## Section II. CONTEXT FOR BP&T IMPLEMENTATION

### 5. What were the major socio-economic or political constraints/barriers for BP&T application?

### 6. What were the major constraints/barriers rooted in domestic water governance designs?

### 7. What were opportunities and drivers for BP&T application?

## Section III. PERFORMANCE and EFFECTIVENESS

### 8. What was the degree of success, or failure in BP&T application in the river basin?

The BP&T manifested in accessible information through websites. The challenge is to ensure the continuity and engagement of the authorities and stakeholders in keeping an enabling environment with knowledge sharing and capacity.

### 9. Did application of BP&T result in further development of capacity (regulatory, administrative, human, etc.) for adaptive water governance in river basins?

### 10. Did application of BP&T result in changes towards more adaptive behaviour of stakeholders?

### 11. Did application of BP&T contribute (and to what possible extent) to problem-solving, or its mitigation)?

## Section IV. EXPORT- IMPORT of BP&T ACROSS COUNTRIES and BASINS

### 12. Examples of BP&T transferred across countries, river basins and stakeholder groups

### 13. Did BP&T transferred required adaptation (and to what extent) to local context and domestic specifics?

### 14. What were the major barriers and opportunities for transfer and adaptation of BP&T?

### 15. What was the 'external' influence in your BP&T implementation?

## Section V. RECOMMENDATIONS about MAJOR CHALLENGES for the REGION

Recommendations: Using this BT&T builds a basis for levelling the platform decision making and can support the necessary trust and transparency needed for transboundary cooperation. In cases where the basin-wide information base is already there but capacity is lacking behind in some countries, capacity building could efficiently be focused on these countries.

<sup>4</sup> ORASECOM (2011)

№ 6

**Name: Establish initially a research based basin-wide knowledge system to focus the work of the basin commission on real issues and provide a learning process based on the use of the research base and platform established**

**Focus № 3**

**Basin/Country/Region Okavango river basin, Angola, Botswana and Namibia**

**Section I. BP&T APPLIED**

**1. What exactly was the best practice or tool?**

To establish a research based basin wide knowledge system in order to focus the work of OKACOM.

**2. With what purpose and reason of its application?**

OKACOM designed the Environmental Protection and Sustainable Management of the Okavango River Basin (EPSMO) Project to evaluate the condition of the river basin, to identify possible threats posed by increasing demands on the benefits of the river system and to develop a program of policy, legal and institutional reforms – a Strategic Action Plan (SAP) to meet and manage these demands.

The major BP&T goals were to create a base of reliable information to be used in the Commission’s decision making. The goal of the SAP was to establish a common understanding of the river basin as a unit through the establishment of a formalized network of basin researchers. The SAP was informed by a Transboundary Diagnostic Analysis (TDA), a scientific and technical fact-finding analysis in order to identify the causal chains and root causes of problems affecting the Okavango River Basin.

**3. Who applied it (i.e. authorities, water-users, civil society, international agencies), and what stakeholders were involved?**

The actors involved were three riparian states, OKACOM, research institution, regional, and local authorities, NGO’s. Linkages were established with research institutions outside the basin but within southern Africa.

**4. Were any regulatory enforcement and incentive mechanisms used to support BP&T application?**

**Section II. CONTEXT FOR BP&T IMPLEMENTATION**

**5. What were the major socio-economic or political constraints/barriers for BP&T application?**

The project experienced limited data availability in the Angolan upper catchment as well as a limited accessibility of ground terrain in Angola due to landmines and infrastructure.

**6. What were the major constraints/barriers rooted in domestic water governance designs?**

The constraints were difficulties in agreeing on development scenarios among the countries and the harmonization of different economic development priorities among these.

**7. What were opportunities and drivers for BP&T application?**

Opportunities to build on were among others the existence of already established research institutions within the basin and riparian states including the existence of the transboundary river basin organisation. The SADC Protocol on shared water courses supported the implementation as a regulatory incentive.

**Section III. PERFORMANCE and EFFECTIVENESS**

**8. What was the degree of success, or failure in BP&T application in the river basin?**

The project created a trans-country and interdisciplinary research network and strengthened the existing basin research institutions. To support the integration and strengthen the research network a science-policy learning cycle to improve each party’s feedback on knowledge and policy needs was established.

**9. Did application of BP&T result in further development of capacity (regulatory, administrative, human, etc.) for adaptive water governance in river basins?**

The BP&T created in-house capacity and knowledge, it strengthened the existing basins research institutions and their trans-country and interdisciplinary research network.

**10. Did application of BP&T result in changes towards more adaptive behaviour of stakeholders?**

**11. Did application of BP&T contribute (and to what possible extent) to problem-solving, or its mitigation)?**

**Section IV. EXPORT- IMPORT of BP&T ACROSS COUNTRIES and BASINS**

**12. Examples of BP&T transferred across countries, river basins and stakeholder groups**

**13. Did BP&T transferred required adaptation (and to what extent) to local context and domestic specifics?**

**14. What were the major barriers and opportunities for transfer and adaptation of BP&T?**

Opportunities: Existence of already established research institutions within the basin and riparian states to build on. The BP&T requires a basin management that is informed by sound knowledge and information, and the existence of an established commission. The BP&T can foster economic development and regional integration.

Challenges: Engaging researchers and coordination with research agendas; acceptance at political level of data sharing; governments need to have a cooperation and coordination framework with different ministries and researchers (cross-sectoral and trans-disciplinary research and integration)

**15. What was the 'external' influence in your BP&T implementation?**

<b>Section V. RECOMMENDATIONS about MAJOR CHALLENGES for the REGION</b>
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Recommendations: Structured and intensified engagement of water sector with Education and Research Ministries. Promote this through regional and continental platforms (e.g. AMCOST) and promote action research for concrete problem solving.

## AFRICA: BP&T Summary Table (form 2)

BP&T Examples	BP&T Applied				Context		Performance	
	Major purpose	What is done	Actors involved	Incentive/enforcement	Barriers/constraints	Opportunities/drivers	Success stories	Problems encountered
<b>Foci 1: Application of national water frameworks in river basins</b>								
<p><b>BP&amp;T 1</b></p> <p><b>Compensation for restoring and maintaining ecosystem services especially in times of food insecurities</b></p> <p><a href="http://www.wetlands.org/LinkClick.aspx?fileticket=9UjRTWaCmol%3d&amp;tabid=56">http://www.wetlands.org/LinkClick.aspx?fileticket=9UjRTWaCmol%3d&amp;tabid=56</a></p>	Improved/sustainable wetlands management/governance structure at local levels to improve livelihoods and reduce pressure on wetlands with particular focus on the dry periods also in view of climate change	Provision of food stock in the form of a food bank exchange for work to protect and restore fish ponds. Agreements with communities to sustain the food bank in the long run.	Local communities/municipalities as the main actor NGO to kick off and guide the process Technical Government on the ground to support and provide advice.	-Degradation of wetland systems - Food security	Poor water management upstream wetland not considering environmental flow in the wetland. Management especially in dry seasons Sustainability of project in the long term	-Better understanding the balance between resource exploitation and ecosystem degradation - Community user groups with a potential to drive the process forward and secure its sustainability	-Return of native species in specific areas -Increased food security (establishment of cereal banks to reduce resource overuse during low production seasons)	-High illiteracy rates resulting in slower uptake of concept -Conflicting central government and local/common law -Lack of synergy among organizations operating in the same areas
<p><b>BP&amp;T 2</b></p> <p><b>Kenya - Leveraging national water priorities to support transboundary cooperation</b> <b>(Ref: Water Resources Management Authority; Lake Victoria Basin Commission; Kenya Meteorological Department; Ministry of Water and Irrigation-Kenya)</b></p>	Development of catchments management plans to address floods, droughts and food security as well as increased water availability without compromising the net basin supply	IWRM strategy was broken to specific catchments plans subsequently trans-boundary issues were brought on board	Ministry for water Ministry for economic planning Regional development authorities Lake Victoria Basin Commission WMO - (integrated flood mgmt.) GWP (as facilitators)	To reduce the impacts of floods and droughts Conflict prevention between competing users; Optimize the use of basin potential	Lack of capacity in terms of human resources at catchments mgmt. agency Competition from other government departments	Flood management; Agricultural development Hydropower generation Vibrant regional administration	Stalled irrigation programmes revived and performance improved - increased food productivity; stable annual production; increased community cohesion Increased visibility of Lake Victoria Basin Commission as an important regional mediator agency in the basin Data sharing protocol amongst riparian countries	Results are still not fully achieved Changes in land use pattern from flood prone areas still a problem

Foci 2: Engagement and coordination among actors, forms of interaction/partnerships								
<b>BP&amp;T 3</b>  <b>Bottom-up approach for stakeholder participation in trans-boundary river basins (Ref: Every river has its people project: Okavango)</b>	-Mobilization of local aspirations into the overall river basin management -Awareness raising	Establishment of governance structures which enables community participation in basin management, planning and decision making. Chair of the basin wide forum sits in the OKACOM thus being well informed and consulted in the decision making process as opposed to directly having a vote	- Community reps from each country in the basin -NGO and CBO facilitation -OKACOM	Threats on livelihoods and ecosystems through potential development let to mobilization of communities and NGO's leading to acceptance/support by governments and international donors providing financial support	- Politically instability in the basin -Capacity of communities to deal with issues at hand -Sustainability of forum after project ended due to insufficient funding	- Better understanding of local livelihood concerns among countries -Establishment of business ventures encouraging entrepreneurship	- Cross border visits for better understanding among communities -Establishment of platform for better interaction between communities and business sectors e.g. tourism -Preservation of community culture (arts and crafts) -Indigenous knowledge brought into the management scheme	- Doubts and trust issues among communities especially in the early stages of the project -High illiteracy rates -Uneven levels of progress among the countries
<b>BP&amp;T 4</b>  <b>Early stakeholder mapping for improved operationalization of the Limpopo Agreement</b>  (Ref: <a href="http://www.limcom.org">www.limcom.org</a> )	Early identification of major stakeholders characteristics for an improved engagement strategy to better implement the agreement	First step of a rapid assessment of stakeholder mapping within the four riparian countries as basis to further develop the stakeholder integration strategy. Outcomes of the rapid mapping process was presented to the Commission	Limpopo basin permanent technical committee Water sector in all four riparian countries Basin stakeholders	Empowerment Strengthening regional cooperation Need to balance the needs of existing strong interest groups Balancing upstream-downstream needs including estuarine flow requirements Need to have stakeholders as part of the process at early stages	Time Funding availability Limitations in the ability to bring representatives of different interest groups	Improved implementation of the terms of the agreement through the identification of stakeholders at earlier stage Involvement of relevant stakeholders within the basin	Development of platform for countries to learn from each other Commission was satisfied with the mapping outcomes and have an appreciation of stakeholder dynamics within each of the riparian States	Non so far Identified stakeholder groups were not adequately consulted
Foci 3: Enabling learning and building adaptive capacity in water governance								
<b>BP&amp;T 5</b>  <b>Creating an enabling environment through inclusive and equitable knowledge and capacity building. (ORASECOM-web-page capacity)</b>	-Promoting trust -Increasing transparency -Establishing common understanding of the river basin as a unit	- Establish decision support systems for the river basin - Carrying out joint basin surveys (water quality, quantity) -Facilitating information availability	Government officials	SADC protocol on shared water -severe water scarcity -over exploitation of resources	- Potential inefficient use of resources (as compared to targeted knowledge and capacity building efforts)	- Creation of trust -Transparency -creation of improved knowledge and decision making	- Accessible information (functional websites) (to be expanded)	- Availability and continuity for participation in river basin management (authorities and stakeholders)



building assessment and programme).		and accessibility						
<p><b>BP&amp;T 6</b></p> <p><b>Establish initially a research based basin-wide knowledge system, to focus the work of the basin commission on real issues and provide a learning process based on the use of the research base and platform established.</b> (Ref: <a href="http://www.okacom.org">www.okacom.org</a> - EPSMO Project)</p>	Improved joint understand and creation of knowledge base of basin conditions, issues and trends (TDA) Guide mutually acceptable development pathways in the Okavango basin (SAP)	Established formalized network of basin researchers through MoUs Undertaking of the TDA and SAP	Three riparian states The Commission (OKACOM) Research institutions Regional and local authorities NGO's Linkages with research institutions outside the basin but within southern Africa	GEF funding availability Need to operationalize the terms of the treaty Peace dividend in Angola Need to secure ecosystem integrity of basin wetlands Provision of knowledge and scientific information to the Commission	Limited data availability in the Angolan upper catchment's Limited accessibility of ground terrain in Angola due to landmines and infrastructure	Existence of already established research institutions within the basin and riparian States Need for economic development Existence of an established commission Need for a basin management that is informed by sound knowledge and information SADC Protocol on shared water courses - regional integration	In-house capacity and knowledge built Strengthening of existing basin research institutions Established trans-country and inter-disciplinary research network Joint fact finding and understanding of the basin system - trust building Established science-policy learning cycle by improving each parties feedback on knowledge and policy needs	Harmonization of different economic development priorities between riparian States Difficulties in agreeing on development scenarios among the countries
<b>MAJOR OPPORTUNITIES AND CHALLENGES FOR APPLYING BP&amp;T's IN OTHER BASINS AND REGION-WIDE</b>								
<b>Best Practice &amp; Tool example</b>	<b>Opportunities</b>			<b>Challenges</b>				
<p><b>BP&amp;T 1</b> Compensation for restoring and maintaining ecosystem services especially in times of food insecurities</p>	<p>"Hot spot" approach in sensitive environments under pressure from development and climate change effects. Could have a role in increasing resilience and food security and in restoration and maintenance of particularly sensitive ecosystems.</p>			<p>Has mostly been applied successfully at rural local hot spots (the poorest of the poor living in sensitive environments); potential high transaction costs; needs stable communities to be successful. Potentially up-scaling and broadening is possible. However it needs strong monitoring and feed-back mechanisms to the actual implementation. Further it needs political support and strong national and local management frameworks;</p>				
<p><b>BP&amp;T 2</b> Kenya - Leveraging national water priorities to support transboundary cooperation</p>	<p>Transboundary cooperation helps alleviate issues which are difficult to solve at national level, by increasing exploration of basin available resources and benefits from mutual utilization of such resources; it also increases efficient utilization of basin resources</p>			<p>The major challenge rests in harmonizing different national interests in the transboundary context (e.g. upstream irrigation versus downstream wetlands conservation); difficulties in developing a joint investment strategy across the basin to generate the best return on investment with an acceptable benefit sharing model. National interests need to see the interest in support transboundary cooperation, national policies and programs to address transboundary waters</p>				
<p><b>BP&amp;T 3</b> Bottom-up approach for stakeholder participation in trans-boundary river basins</p>	<p>Has a potential to be used in smaller (number of countries and number of communities) transboundary basins to get the very local voices heard at the transboundary level for e.g. large scheme developments. Existing community organizations or platforms like resource user groups can also be used to establish platforms for transboundary water governance.</p>			<p>Basins with a larger number of riparian states might have difficulties in applying the BP&amp;T, due to the number of communities involved and the diversity of local dependencies of water. Applying it in larger basins would be possible</p>				
<p><b>BP&amp;T 4</b> Early stakeholder mapping for improved</p>	<p>To get all key stakeholders including the very local voices (least powerful) heard at the transboundary level for e.g. large scheme developments, to increase</p>			<p>Basins with a larger number of riparian states might have difficulties in applying the BP&amp;T, due to the number of communities involved and the diversity of local dependencies of</p>				

operationalization of the Limpopo Agreement	effectiveness of proposed development	water. There is a need for good cooperation structures and information transfer from local level to national level and vice versa. Weak capacity development of grass roots organizations (e.g. no access to information and knowledge)
<b>BP&amp;T 5</b> Creating an enabling environment through inclusive and equitable knowledge and capacity building programs	Besides increasing capacity and knowledge for transboundary water management it can lead to increasing trust between involved countries, and a transparent basis for decision making.	Time consuming and expensive; respecting partners in cooperation based on an understanding of culture and history, differences of capacity among the countries (asymmetry) which are sharing the basin needs to be well understood through targeted capacity assessments.
<b>BP&amp;T 6</b> Establish initially a research based basin-wide knowledge system, to focus the work of the basin commission on real issues and provide a learning process based on the use of the research base and platform established.	Existence of already established research institutions within the basin and riparian States Need for a basin management that is informed by sound knowledge and information Economic development Existence of an established commission SADC Protocol on shared water courses - regional integration	Engaging researchers and coordination with research agendas; acceptance at political level on data sharing; governments need to have a cooperation and coordination framework with different ministries and researchers (cross-sectoral and trans-disciplinary research and integration)
<b>POLICY RECOMMENDATIONS FROM EXPERTS ON REQUIREMENTS FOR TO ADRESS CHALLENGES</b>		
<b>BP&amp;T 1</b>	This is an approach which was applied 40-50 years ago and forgotten, but which in view of climate change and population growth and water stress and food insecurity could be revived. It's a challenging tool to apply. It needs strong political support and strong local leadership and management. Piloting the BP&T systematically in a number of hot spots to learn and improve the applicability of the tool is highly advisable.	
<b>BP&amp;T 2</b>	<ul style="list-style-type: none"> <li>• RBO need to understand the role of water in economic development in a national, transboundary and regional context.</li> <li>• Taking ahead the national interests through transboundary water cooperation.</li> <li>• Establishing regional cooperation frameworks for transboundary water cooperation (SADC)</li> <li>• RBO need a platform learning, exchange of ideas and advocacy (e.g. AMCOW; GWP and RECs)</li> </ul>	
<b>BP&amp;T 3</b>	Open up for community representation in transboundary water management, thus leading to better understanding of the situation and acceptance of development and conservation activities.	
<b>BP&amp;T 4</b>	To use, capacitate and empower existing community organizations or social structures like resource user groups to ensure more sustainable and efficient (inclusiveness) management for holistic water resources management Understanding and engaging the stakeholders early on after agreeing on cooperation frameworks helps shape the governance framework and supports its acceptance and implementation. Design and manage relevant stakeholder engagement to ensure an efficient governance framework.	
<b>BP&amp;T 5</b>	Using this BT&T both builds a basis for levelling the playing the platform decision making and can support the necessary trust and transparency needed for transboundary cooperation. In cases where the basin-wide information base is already there and capacity is lacking behind in some countries- capacity building could efficiently be focused on these countries.	
<b>BP&amp;T 6</b>	Structured and intensified engagement of water sector with Education and Research Ministries. Promote this through regional and continental platforms. (AMCOST). Promotion of action research for concrete problem solving	

# RUSSIA/NIS: BP&T inventories by experts (form 1)

№ 1

**NAME: Re-profiling of city's riverside territories from industrial to business-administrative sites**

**FOCI: № 1**

**BASIN/PROVINCE/COUNTRY: Volga/Nizhegorodskaya Oblast/Russia**

## Section I. BP&T APPLIED

### 1. What exactly was the best practice or tool?

Re-profiling of urban riverside areas from industrial to business-administrative sites (N.Novgorod)

### 2. With what purpose and reason of its application?

Sustainable development of urban areas based on effective planning and management of land-use. Implementation of RF Water Code and RF Urban-Planning Code aimed at increasing life quality standards in urban areas.

### 3. Who applied it (i.e. authorities, water-users, civil society, international agencies), and what stakeholders were involved?

Re-profiling practice is applied by municipal authorities and business community, i.e. owners of land sites under industrial enterprises and investors

### 4. Were any regulatory enforcement and incentive mechanisms used to support BP&T application?

Development of the General Plan and construction regulatory norms. Control over compliance of environmental norms and over water-use and conservation standards is often used as an instrument for pushing industrial enterprises out from the riverside sites.

## Section II. CONTEXT FOR BP&T IMPLEMENTATION

### 5. What were the major socio-economic or political constraints/barriers for BP&T application?

Reduction of jobs in industrial sector as a result of this practice application, social tensions, changes in the land market with increase of prices for riverside sites

### 6. What were the major constraints/barriers rooted in domestic water governance designs?

No, on the contrary. RF Water Code promotes application of this practice.

### 7. What were opportunities and drivers for BP&T application?

Driver: increase of land prices in urban areas. Advantages for municipal budgets – higher land taxes, and for land owners – higher incomes. Environment – reduction of polluted water and air discharges. Improvements in life quality. Support by society. Increase in prices for apartments.

## Section III. PERFORMANCE and EFFECTIVENESS

### 8. What was the degree of success, or failure in BP&T application in the river basin?

This BP is successfully applied in large cities in Russia – N.Novgorod, Khabarovsk, Kazan. It results in formalization of interactions between authorities and new land owners in the riverside areas. However, its application is slow due to shortages in investments. For small towns – for example Balakhna, where interactions are based more on informal practices, the failures and problems in application of this practice are registered. The land price is lower there, and this the application is characterized by distortions.

### 9. Did application of BP&T result in further development of capacity (regulatory, administrative, human, etc.) for adaptive water governance in river basins?

Removal of environmentally harmful industrial enterprises results in amelioration of water quality and environmental situation, and in more environmentally responsible behavior. Riverside landscapes amelioration.

### 10. Did application of BP&T result in changes towards more adaptive behavior of stakeholders?

Ecological improvements in urban areas in general, and water pollution reductions, in particular. Usually, industrial enterprises install new equipment and ecologically benign facilities at the new sites. Increase in investments result in growth of taxes and revenues of municipalities, as well as in creation of new jobs.

### 11. Did application of BP&T contribute (and to what possible extent) to problem-solving, or its mitigation)?

This best practice application has not lead so far to problem solving. The process is developing slowly, mainly due to economic crisis.

## Section IV. EXPORT- IMPORT of BP&T ACROSS COUNTRIES and BASINS

### 12. Examples of BP&T transferred across countries, river basins and stakeholder groups

This BP is borrowed mainly from the practices applied in the West (legal zoning).

**13. Did BP&T transferred required adaptation (and to what extent) to local context and domestic specifics?**

Adaptive management mechanisms are based on legal regulations, on provisions and norms of the RF Water Code and the RF Urban Planning Code.

**14. What were the major barriers and opportunities for transfer and adaptation of BP&T?**

Industrial enterprises with urban-formation functions are usually difficult to be transferred. Many enterprises are located on the banks along the rivers. Long time is required for their transfer. Among other barriers are the differences in interests among land owners and among stakeholders, as well as the lack of experience in application of this BP.

**15. What was the 'external' influence in your BP&T implementation?**

Foreign assistance was provided during training of the Russian specialists involved in development and realization of re-profiling programmes; many of them got training abroad.

**Section V. RECOMMENDATIONS about MAJOR CHALLENGES for the REGION**

- Enhance information dissemination among stakeholders about application of this practice
- Additional training of management stuff and decision-makers
- Provision of transparent, fare and equal conditions for investors

**№ 2**

**NAME: Relaxation of procedures and removal of administrative barriers in issuing permits for water use**

**FOCI: № 1**

**BASIN/PROVINCE/COUNTRY: Russia/multiscale application in river basins**

**Section I. BP&T APPLIED**

**1. What exactly was the best practice or tool?**

Increase in effectiveness of water use and in water governance through reforms and changes in administration of water-use permits

**2. With what purpose and reason of its application?**

Removal of administrative barriers, corruption mitigation, simplification of bureaucratic procedures, improvements in normative basis in water sector, and removal of water-use licenses

**3. Who applied it (i.e. authorities, water-users, civil society, international agencies), and what stakeholders were involved?**

*Water Agencies* of the RF Ministry for Natural Resources – are the key players in application of this practice. *Water Basin Administrations* conclude agreements with *water-users*. *Vodocanal* (now JSC, is responsible for a set of environmental problems, including water quality, discharges, water services provision, land re-cultivation)

**4. Were any regulatory enforcement and incentive mechanisms used to support BP&T application?**

Legislation is the major regulatory mechanism. Control methods are applied. Water Basin Administrations develop the limits for water use for each of particular water-user and by territories within their competence. Regional authorities pressure for reduction of water-use limits for motivation of new projects realization. As a result of this PB application the number of administrative procedures has been reduced. Equal requirements are now established towards private and municipal enterprises. Real responsibilities for environmental security of municipalities and municipal enterprises are established.

**Section II. CONTEXT FOR BP&T IMPLEMENTATION**

**5. What were the major socio-economic or political constraints/barriers for BP&T application?**

Administrative barriers

**6. What were the major constraints/barriers rooted in domestic water governance designs?**

Constraints associated with national barriers, i.e. corruption. Poor coordination of actions between various government levels. For example, at initial stage the 'recipient level' of payments for water pollution has not been clearly identified.

**7. What were opportunities and drivers for BP&T application?**

The major driver is in relaxation of procedures, increased transparency, effectiveness and logic in administration of payments for water-use. Federation subjects are not responsible any longer for management of federal water resources.

**Section III. PERFORMANCE and EFFECTIVENESS**

**8. What was the degree of success, or failure in BP&T application in the river basin?**

This practice can be regarded as a success story in general. However, additional assessment is required in terms of its impact on SMEs, and if it sets the frameworks for their survival.

**9. Did application of BP&T result in further development of capacity (regulatory, administrative, human, etc.) for adaptive water governance in river basins?**

Water management systems are improved and turn to be more effective. Bureaucratic barriers are removed, and the role of secondary government organs in decision-making declines.

**10. Did application of BP&T result in changes towards more adaptive behavior of stakeholders?**

The behavior of water users becomes more responsible in terms of water savings and conservation. Special effects are tracked in terms of water pollution reduction. Especially improved environmentally benign behavior relates to municipal enterprises which used to be serious water pollution sources, and their environmental responsibilities were not ensured by law.

**11. Did application of BP&T contribute (and to what possible extent) to problem-solving, or its mitigation)?**

Promotes improved water governance and increase in its effectiveness.

**Section IV. EXPORT- IMPORT of BP&T ACROSS COUNTRIES and BASINS**

**12. Examples of BP&T transferred across countries, river basins and stakeholder groups**

Borrowed both from international and domestic Russian practices.

**13. Did BP&T transferred required adaptation (and to what extent) to local context and domestic specifics?**

This BP was adapted both to national water code and existing institutional water practices.

**14. What were the major barriers and opportunities for transfer and adaptation of BP&T?**

Barriers for BP transfer and adaptation are absent – when this practice begins to be applied in a full-scale after certain transition period. Additional norms are being elaborated currently relating to procedures for issuing permits for water use, including the verification of the list for required documentation and paper-work.

**15. What was the ‘external’ influence in your BP&T implementation?**

Need in external assistance is absent.

**Section V. RECOMMENDATIONS about MAJOR CHALLENGES for the REGION**

- Unify the rules for issuing permits for water use across all federation subjects and water-users
- Certain methodological upgrades of procedures for this BP application and its further testing in the regions is necessary, along with removal of uncertainties and clarification of some procedures which are tracked so far in the current version of regulations

**№ 3**

**NAME: Introduction of integrated river basin management within AmuDarya hydrographic boundaries, Uzbekistan**

**FOCI: № 1**

**BASIN/PROVINCE/COUNTRY: Amu-Darya, Uzbekistan**

**Section I. BP&T APPLIED**

**1. What exactly was the best practice or tool?**

Since 2003, in order to improve the organization of water resources management in the Republic of Uzbekistan and to provide a transition from administrative-territorial to basin principle of irrigation systems management, 10 Basin Irrigation system Management Organizations (BUIS) and 56 Sub-Basin Irrigation System Management Organizations (UIS) have been established. The realized reforms decreased the amount of the units occupied by water distribution that existed between water users and irrigation source significantly. The water management organizations were reduced from 237 to 73 organizations and agencies. Such changes have been conducted in order to separate water management from administrative command governance of land and water resources.

**2. With what purpose and reason of its application?**

The introduction of the IWRM in Uzbekistan in 2003 was recognized as a major political event within the water management. The facilitators of the wide spreading of IWRM principles in Uzbekistan were international projects as well as government of the Republic of Uzbekistan. In some regions of the Republic of Uzbekistan international donors such as IWMI, ADB, USAID, and WB expanded their activities in the irrigation sector in the form of pilot projects. These pilot studies, which showed positive feedback from the participants, and other international and Central Asian experience, have contributed a lot to the introduction of IWRM and establishment of WUAs in the Republic of Uzbekistan.

The Ministry of Agriculture and Water Resources (MAWR) organized some excursions to Italy and Turkey in order to collect international experience in water management issues.

Kyrgyz experience with its extraordinary reforming steps (land privatization, market economy, and introduction of WUAs etc.) is reputed in the Republic of Uzbekistan. The experiences of Mexico and Indonesia were pointed out by experts who are working in joint project with IWMI. The experiences from China and Japan came up through the number of donors from and cooperation with these countries. The donor activities are formed by educational programs and trainings abroad.

The joint project with IWMI suggested their IWRM strategy to the government of Uzbekistan. As result, in March 2003 a new wave of the reforms in agrarian sector of Uzbekistan started, based on the adopted and supplemented IWRM strategy. The beginning of the reforms was initiated by the presidential decree from 24.03.03 № УП-3226 “On the most important extension directions of reforms in agriculture”. In pursuance of presidential decree № УП-3226 and in an effort to radically improve the management of systems of agricultural production in accordance with market economy requirements, the organizational structure of MAWR was revised based on a Cabinet of Ministers’ regulation. In the new structure BUIS, management boards of main canals as well as UIS were presented for the first time.

These organizations are a potentially powerful step in the right direction. They not only make more sense technically, as authorities can now make decisions on water distribution and use based on sound engineering and hydrological principles, but the new River Basin Management Authorities de-centralize water and irrigation decision-making, and have the potential of lessening the power of the regional governors, who interfere a lot the water allocation issues. This is a structural change with potentially far-reaching implications, if the new River Basin Authorities are provided with sufficient and proper resources to manage.

The main aim of the Government’s policy in the water sector was to promote the rational use of water and to protect water resources. It also aims to improve the efficiency and reliability of the country’s water sector management, ensuring guaranteed water delivery and providing essential services both to society and natural ecosystems for the reconstruction, operation and maintenance of the existing infrastructure. The main priorities of activities in the water sector are as follows:

1. Water saving in all types water consumption and improving water quality;
2. Development of systems for supplying the population with good quality drinking water;
3. Restoration of soil fertility and maintenance of a favorable water-salt balance in the rooting zone of soil;
4. Prevention of water and wind erosion of soil, and rational use and protection of the vegetation cover in the piedmont-highland and desert pasture zones;
5. Mitigation of the negative impacts of the ecological and economic crisis in the Aral Sea littoral zone through an integrated approach to decision-making on interrelated regional and national issues.

The creation of the two-level system of national water resources management through the establishment of the Basin Irrigation system Management Organizations and WUAs has become the most important component of the on-going reforms.

### **3. Who applied it (i.e. authorities, water-users, civil society, international agencies), and what stakeholders were involved?**

MAWR and its provincial departments, BUISes, UISes, management boards of main canals, Water User Associations

### **4. Were any regulatory enforcement and incentive mechanisms used to support BP&T application?**

Presidential decree from 24.03.03 № УП-3226 “On the most important extension directions of reforms in agriculture” as well as Cabinet of the Ministers decree № 290 from 28.06.03 “Concerning perfection of an organization of MAWR’ activity”, № 320 from 21.07.03 “Concerning the improvement of water management organizations” and №476 from 30.10.03 “Concerning arrangements on achievement of development conception of farms for 2004-2006”.

## **Section II. CONTEXT FOR BP&T IMPLEMENTATION**

### **5. What were the major socio-economic, or political constraints for BP&T application?**

1) State-centric, top-down governance approach with little public participation; accountability and transparency upwards; 2) The government’s ruinous and exploitive social and economic policies have brought about other structural constraints such as poverty, skilled workforce drain, severe infrastructural deficiencies; 3) There are weak traditions of civil society. Since 2003, civil society has been subjected to considerable pressure from the authorities, who regard NGOs as “subversive organizations” and an instrument used by the West to encourage “color” revolution; 4) budget constraints; 5) low public awareness; 6) no long-term planning;

### **6. What barriers did BP&T face? Who opposed BP&T use?**

1) Still old administrative style, based on territorial principles; 2) Lack of experience in the Basin Irrigation system Management Organizations; 3) Lack of legislation on water resources management; 4) Lack of attention in the selection of personnel; 5) Weak work of the Water Board or Commission; 6) Lack and fluctuation of skilled personnel; 7) Lack of integration of water management; 8) Lack of capital investment in the reclamation; 9) Lack

of reconstruction of the large canals and reservoirs. 10) High salinity of water and soil salinity, 11) Operation of interfarm irrigation and drainage system.

No direct opposition is identified; however reform process in the water sector has not changed the participation of other actors in water management despite the introduction of new water management organizations based on the basin principle. This is to some extent the result of remaining old power structures and the constraining macro-scale institutional settings, such as the state order system and the weak decision-making authority and power of the Basin Irrigation system Management Organizations and their branches as well as the water user associations who formally are the main actors from the lower sub-basin level.

#### **7. How were barriers overcome?**

1) Strengthening capacity, training and support for the development of basin principles of water management on all levels (Basin Irrigation system Management Organizations, Water User Associations) with public participation; 2) Restoration and improvement of infrastructure and control systems and service; 3) Increase efficiency of water use and interfarm management of water by water conservation, pure technologies and biological methods; 4) Improved basin-wide approaches for water resource management;

#### **What opportunities and drivers for BP&T application existed?**

1) exclusion of intermediates as well as the interference of others, unresponsive in the water, organizations and individuals in water resource management; 2) Cut of unnecessary staff positions and savings of means; 3) Provided a rational, proportional to the water source of each water user, regardless of its location on the irrigation system; 4) Increased responsibility for water supply to the contractual relationship between the management of irrigation systems (UIS) and water users (water user associations (WUAs) and farmers.

#### **Who supported the use of BP&T? Did they take advantage of them?**

The governmental water management sector, basin and sub-basin authorities, Water User Associations, local municipalities. Decision-making process become more simpler, more operational. Importantly, this facilitated the work and local authorities, which had always had to deal with water matters. Hydrographisation is not a main goal of better water governance. It should facilitate the process of monitoring and evaluation of water distribution, which in turn should facilitate decision making processes and supervise implementation of decisions. Recognizing the importance of the transition to a hydrographic principle, it should be noted that the mere passage of hydrographic principle does not make decisions of water managements fairer and more efficient. It only creates opportunities or basis for more equitable and efficient solutions. Whether water managers will seize or take advantage of these opportunities for improving the quality of water management depends on a number of subjective and objective factors, essential is the degree of involvement of water users in decision solutions.

### **Section III. PERFORMANCE and EFFECTIVENESS**

#### **8. What was the degree of success, or failure in BP&T application in the river basin?**

Through process of the transition to the hydrographic principle in Uzbekistan an important step towards enhancement of water governance was done.

However, there are still challenges for the basin management within hydrographic boundaries such as 1) Lack of sectoral integration-principle of ecosystem goods and services approach; 2) Institutionalised Soviet and

pre-Soviet patterns of behavior still shape actors' responses to new challenges such as strong administrative

command at weak financial support and low public awareness and participation; 3) Obsolete equipment, low water accounting, free irrigation water; 4) Neglecting of ecosystem needs. 5) Problems of institutional spatial misfit and vertical interplay;

#### **What were the major reasons for success, or failure?**

The major reasons for success of transition to the hydrographic principle of water management in Uzbekistan were due to contribution of international donors. So, for example, a project "Integrated Water Resources Management in Ferghana Valley (IWRM-Ferghana)" (financed by Swiss Agency for International Development and Cooperation) develop IWRM conceptual basis, taking into account hydrographic boundaries, participation of all the concerned parties and democratic management principles. As a result of broad propagation of IWRM ideology by the project, the Uzbek Government decided to transform water resources management by hydrographic principle — decision of the Cabinet of the Republic of Uzbekistan "On improving management in water sector", No. 320 dated July 21, 2003. Also earlier experiences in IWRM application at the river basin level played a role.

The reasons for failure are as follows: 1) The water allocation under the state quota system still makes the process very hierarchical and bureaucratic (also involvement of decision makers- hakimyat—provincial and

district government officials); 2) direct participation of the stakeholders other than water professionals and administrative managers (hakimyat in local) in the process of the water allocation is limited; 3) lack of qualified and skilled personal in newly created BUISES, UISES

**9. Did application of BP&T result in further development of capacity (regulatory, administrative, human, etc.) for adaptive water governance in river basins?**

The team of NeWater organized series of stakeholder meetings. Stakeholder and research activities that addressed issues such as (1) development of approaches for local water and soil quality management; (2) methods for adaptation to high variability in river flow and to extreme events; (3) implications of the social dimension of water management: poverty, gender, and health; and (4) improving the provision of wetland ecosystem services by incorporating ecological water requirements of the Amudarya River delta into water management within the framework of adaptive management were conducted by several teams of European and Uzbek scientists who used participatory and standard scientific approaches. The participatory research process took place from 2005 to 2008. It consisted of eight main workshops that focused on adaptive management in the Amudarya River basin and which were attended by 30–40 stakeholders each, and 10 smaller workshops that focused on selected topics. The main workshops brought together people from different management levels, interest groups, sectors, and backgrounds.

**10. Did application of BP&T result in changes towards more adaptive behavior of stakeholders?**

Difficult to measure due to short-time experiences of BUISES and UISES in Uzbekistan. The effects from NeWater were not followed up and an impact assessment would be needed.

**11. Did application of BP&T contribute (and to what possible extent) to problem-solving, or its mitigation)?**

Yes. After the creation of BUISES, UISES, the land reclamation become in importance. The reclamation problems should be solved along with the improvement of water distribution and irrigation in specific systems. Irrigated Lands Reclamation Improvement Fund was established under the Ministry of Finance, and efficiently operates (with unitary enterprises in the regions of Uzbekistan) on the basis of secured financing of activities for irrigated land reclamation. A special leasing company was established to purchase reclamation machinery (excavators etc.). To provide timely and qualitative reclamation works, local specialized contract organizations were involved.

**Foci 2: Engagement and coordination among actors, forms of interaction/partnerships**

**№ 4**

**NAME: Vetluga river basin: Coordination practices in implementation of basin agreements at the local level (N.Novgorod, Kostroma oblasts, and Mary-El republic)**

**FOCI: № 2**

**BASIN/PROVINCE/COUNTRY: Vetluga/Nizhegorodskaya and Kostromskaya Oblasts, Mary-El Republic/Russia**

**Section I. BP&T APPLIED**

**1. What exactly was the best practice or tool?**

Basin agreement “Povetluzhye” within the Vetluga river basin to promote environmental protection, cultural and economic coordination and interactions at the local level. It is concluded between the regions of the Nizhegorodskaya and Kostromskaya oblasts, Mary-El republic in the north of the European Russia.

**2. With what purpose and reason of its application?**

1) enhance life quality at the local level 2) increase effectiveness of water governance

**3. Who applied it (i.e. authorities, water-users, civil society, international agencies), and what stakeholders were involved?**

Self-governance organs – the key players in this agreement

**4. Were any regulatory enforcement and incentive mechanisms used to support BP&T application?**

Yes: certain authorities of the local governance organs

**Section II. CONTEXT FOR BP&T IMPLEMENTATION**

**5. What were the major socio-economic or political constraints/barriers for BP&T application?**

Inadequate horizontal coordination mechanisms

**6. What were the major constraints/barriers rooted in domestic water governance designs?**

Yes: existing RF Water Code does not create adequate motivation and incentives for conclusion of river basin agreements at the municipal level

**7. What were opportunities and drivers for BP&T application?**



The framework for horizontal coordination might allow to operationally solve the local problems with minimum costs

### Section III. PERFORMANCE and EFFECTIVENESS

**8. What was the degree of success, or failure in BP&T application in the river basin?**

The “Povetluzhye” agreement has been in force during 15 years. Annual festivals, public dialogues and joint campaigns are held. The literature on local history and traditions is published.

**9. Did application of BP&T result in further development of capacity (regulatory, administrative, human, etc.) for adaptive water governance in river basins?**

Yes, undoubtedly. Stakeholder coordination and joint actions promote for easier exchange of practical experiences and lessons, and to solve environmental problems.

**10. Did application of BP&T result in changes towards more adaptive behavior of stakeholders?**

Yes: the environmental efforts of municipalities are being coordinated. The national park “Povetluzhye” is established in the basin in 2008.

**11. Did application of BP&T contribute (and to what possible extent) to problem-solving, or its mitigation)?**

Environmental situation tends to ameliorate.

### Section IV. EXPORT- IMPORT of BP&T ACROSS COUNTRIES and BASINS

**12. Examples of BP&T transferred across countries, river basins and stakeholder groups**

Exchange of experiences and lessons between the regions about application of good practices is underway. The level of international cooperation and exchange is not sufficient.

**13. Did BP&T transferred required adaptation (and to what extent) to local context and domestic specifics?**

International projects/programs in the basin were not realized.

**14. What were the major barriers and opportunities for transfer and adaptation of BP&T?**

Insufficient attention of international environmental organisations to the local level in Russia.

**15. What was the ‘external’ influence in your BP&T implementation?**

“Povetluzhye” basin agreement – is a local incentive. Foreign assistance as not granted.

### Section V. RECOMMENDATIONS about MAJOR CHALLENGES for the REGION

- Promote the development of legislation for horizontal coordination for integrated river basin management at the local level
- Enhance the role of self-governance organs in decision-making and implementation of environmental policy
- Establish international partnerships with the similar river basins coordination initiatives of the locales in the EU

**№ 5**

**NAME: Implementation of Environmental Development Strategy by Cherepovets Chemical Group FosAgro (Ammofos, Cherepovets Azot, Agro-Cherepovets)**

**FOCI: № 2**

**BASIN/PROVINCE/COUNTRY: Volga Basin/Vologda Oblast/Russia**

### Section I. BP&T APPLIED

**1. What exactly was the best practice or tool?**

1.1 Technical modernization of industrial facilities of the company with taking into account of environmental components; Since recently environmental measures are considered as integral part of corporate development strategy; sustainable development priorities are identified; and environmental strategy is elaborated with the major elements as:

- water recycling
- use of internal energy sources, shift to independent self-supply of electricity
- utilization of emitted gases and climate change mitigation - CO2 processing into carbamide

1.2 Improvements in water management are regarded as integral part of sustainable development strategy of the company

1.3 Regular collaboration and partnerships with scientists and environmental consultants (“household doctor”)

1.4 Introduction of international system of standards ISO 9000, ISO 14000, OHSAS 18000

1.5 Introduction of modern information technologies – operational in-situ assessment and forecasting of pollutants discharges and possible accidents

**2. With what purpose and reason of its application?**

2.1 reduce negative environmental impacts and risks

2.2 regular operational control, monitoring and forecasting

2.3 regular updates and tracking changes in environmental legislation, development of compliance procedures and adaptation strategies, technical consultations

2.4 human capacity raising through constant training of internal staff, development the system of internal audits, adoption of strategies with accent on preventive measures

**3. Who applied it (i.e. authorities, water-users, civil society, international agencies), and what stakeholders were involved?**

Business: FosAgro company and the group of its enterprises of the Cherepovets industrial site

**4. Were any regulatory enforcement and incentive mechanisms used to support BP&T application?**

Domestic (national and regional) environmental legislation and norms

**Section II. CONTEXT FOR BP&T IMPLEMENTATION**

**5. What were the major socio-economic or political constraints/barriers for BP&T application?**

5.1 Bureaucratic barriers

5.2 Corruption

5.3 Gaps between duties and rights of an enterprise

5.4 Internal highly integrated vertical structure which hinders operational decision-making at local facilities

**6. What were the major constraints/barriers rooted in domestic water governance designs?**

6.1 Very stringent ecological norms that are unrealistic to comply with

6.2 Inadequate incentives and stimulus presupposed by domestic legislation

**7. What were opportunities and drivers for BP&T application?**

Factors rooted in:

- need of the company to have wider access to credit lines in the West (aim to allocate IPOs)

- maintenance of business reputation and competitiveness of the company

**Section III. PERFORMANCE and EFFECTIVENESS**

**8. What was the degree of success, or failure in BP&T application in the river basin?**

As a result of introduction of ISO management systems the effectiveness of environmental quality management at the enterprise and at its facilities is gradually increasing

**9. Did application of BP&T result in further development of capacity (regulatory, administrative, human, etc.) for adaptive water governance in river basins?**

Technical measures applied by the enterprise resulted in reduction of harmful water pollutants discharges (As, Pb, and others) by 1,5-2 fold during recent decade

**10. Did application of BP&T result in changes towards more adaptive behavior of stakeholders?**

Yes. Introduction of ISO -14000 allowed to solve the problem of wastes management (non-technological processes)

**11. Did application of BP&T contribute (and to what possible extent) to problem-solving, or its mitigation)?**

Yes. Contribution to improvement of ecological situation at the industrial site and in the region

**Section IV. EXPORT- IMPORT of BP&T ACROSS COUNTRIES and BASINS**

**12. Examples of BP&T transferred across countries, river basins and stakeholder groups**

Application of international environmental quality management practices utilized by similar industrial facilities worldwide

**13. Did BP&T transferred required adaptation (and to what extent) to local context and domestic specifics?**

Adjustments and adaptation of internal practices of an enterprise

**14. What were the major barriers and opportunities for transfer and adaptation of BP&T?**

Barriers: loopholes in domestic legislation, although it was sufficiently upgraded during recent years

Opportunities: economic reforms in Russia, new investment opportunities

**15. What was the 'external' influence in your BP&T implementation?**

Indirect influence through market mechanisms

**Section V. RECOMMENDATIONS about MAJOR CHALLENGES for the REGION**

- Reduce administrative barriers and corruption

- Promote modernization and innovation in water sector through incentives
- Consolidate links between science and decision-making by various stakeholders
- Increase transparency of water management and ensure dissemination of information to all stakeholders

#### № 6

**NAME: Introduction of international environmental management system ISO 14000 by industrial enterprises**

**FOCI: № 2**

**BASIN/PROVINCE/COUNTRY: Vologda Oblast/Russia**

### Section I. BP&T APPLIED

**1. What exactly was the best practice or tool?**

Since 2006, development and introduction of international environmental management system at enterprises of FosAgro group in the Vologda oblast

**2. With what purpose and reason of its application?**

Environmentally sustainable development and increased ecological responsibility of industries, emission reduction and environmental amelioration

**3. Who applied it (i.e. authorities, water-users, civil society, international agencies), and what stakeholders were involved?**

Business and international certifying organizations

**4. Were any regulatory enforcement and incentive mechanisms used to support BP&T application?**

Voluntary BP application by businesses. Regulator: system of international standards ISO 14000. Economic interest of industrial enterprise in increasing its competitiveness, in opening and ensuring access to international markets. Socio-moral incentives – promote social and ecological responsibility.

### Section II. CONTEXT FOR BP&T IMPLEMENTATION

**5. What were the major socio-economic or political constraints/barriers for BP&T application?**

Social and political barriers: additional financial costs and training of staff for development of the management system and its enforcement afterwards. Low incentives at domestic markets for introduction of this environmental quality management standard.

**6. What were the major constraints/barriers rooted in domestic water governance designs?**

National barriers: too high and stringent standards for water quality. An enterprise has to discharge water after use with a quality higher than it originally consumes from the river.

**7. What were opportunities and drivers for BP&T application?**

1) Expansion of markets and demand for the products of FosAgro, especially growth of demand from international markets. 2) Development and amelioration of the 'green image'. 3) Environmental risks reduction. 4) Increased motivation, institutional formalization. And transparency. 5) Stable links with environmental management and control organs in a long-term [perspective. 6) Russian business is developing, and it prefers to be law abiding, transparent, accountable, responsible and compliant with domestic rules. 7) Promotes institutional uncertainties reduction.

### Section III. PERFORMANCE and EFFECTIVENESS

**8. What was the degree of success, or failure in BP&T application in the river basin?**

The major result is linked with reduced negative impact on water resources. It is attributed to introduction of new technologies, and development of partnerships with civil society. The social image of a company is improving, and positive attitude of the local public is registered.

**9. Did application of BP&T result in further development of capacity (regulatory, administrative, human, etc.) for adaptive water governance in river basins?**

The potential of the enterprise in river basin management has been consolidated due to enhanced human potential. Ecological awareness both of its staff and of the local public is much higher today.

**10. Did application of BP&T result in changes towards more adaptive behavior of stakeholders?**

Ecological responsibility of each industrial plant and of their staff had increased.

**11. Did application of BP&T contribute (and to what possible extent) to problem-solving, or its mitigation)?**

Additional funding is granted for reconstruction of purification facilities. The problem of water pollution of the river is being solved currently.

### Section IV. EXPORT- IMPORT of BP&T ACROSS COUNTRIES and BASINS

**12. Examples of BP&T transferred across countries, river basins and stakeholder groups**

Transfer and application of international ISO 14000 standard

**13. Did BP&T transferred required adaptation (and to what extent) to local context and domestic specifics?**

In Russia, the national standard ГОСТ Р ИСО 14000 is introduced. It incorporates the international standard into the system of national standards.

**14. What were the major barriers and opportunities for transfer and adaptation of BP&T?**

The major barrier for adaptation – is of ethical nature, as there are those that are willing to buy a certificate instead of undertaking real compliance actions.

**15. What was the ‘external’ influence in your BP&T implementation?**

International assistance is in support of undertaking certification process. International influence – integration of the system of standards into the market requirements.

**Section V. RECOMMENDATIONS about MAJOR CHALLENGES for the REGION**

- Establish sustainable regional management system based on certification with participation of major large industrial enterprises
- Disseminate knowledge and information among high level decision-makers, owners and specialists about practical realization of BP and its impacts

*Foci 3: Enabling learning and building adaptive capacity in water governance*

№ 7

NAME: Flood monitoring and forecasting in Nizhegorodskaya oblast, Russia

FOCI: № 3

BASIN/PROVINCE/COUNTRY: Volga/Nizhegorodskaya Oblast/Russia

**Section I. BP&T APPLIED**

**1. What exactly was the best practice or tool?**

Monitoring and forecasting of freshet floods in Nizhegorodskaya oblast. It is based on processing of statistical data on all cases of flooding, taking into account information on water level, weather conditions, and possible flooded areas. Modeling takes into account the information on local relief and expected water levels during flooding.

**2. With what purpose and reason of its application?**

Prevention of floods, reduction of risks associated with high freshet floods through the system of counteractive measures. Selection of measures is based on forecast results. Operational response is provided in case of emergencies.

**3. Who applied it (i.e. authorities, water-users, civil society, international agencies), and what stakeholders were involved?**

BP is applied within the Emercom system. Products and results are provided to the government of Nizhegorodskaya oblast and to the heads of the local self-governance organs.

**4. Were any regulatory enforcement and incentive mechanisms used to support BP&T application?**

BP is realized according to the national, oblast and internal ministry regulations.

**Section II. CONTEXT FOR BP&T IMPLEMENTATION**

**5. What were the major socio-economic or political constraints/barriers for BP&T application?**

Major barrier is in unwillingness of the oblast authorities to be involved in problem-solving.

**6. What were the major constraints/barriers rooted in domestic water governance designs?**

No

**7. What were opportunities and drivers for BP&T application?**

The flood forecast results allow developing the set of preventive and mitigation measures.

**Section III. PERFORMANCE and EFFECTIVENESS**

**8. What was the degree of success, or failure in BP&T application in the river basin?**

The success of BP method is measured by the forecast accuracy. The higher is its accuracy the more detailed is the list of measures to be prepared for the freshet flood season, and the lower is the risk for the local population.

**9. Did application of BP&T result in further development of capacity (regulatory, administrative, human, etc.) for adaptive water governance in river basins?**

Yes. It allows to assess water insecurities associated with possible climate change impacts, and to develop adaptation responses.

**10. Did application of BP&T result in changes towards more adaptive behavior of stakeholders?**

Forecast results and compilation of data on regularly flooded areas makes decision-makers in Nizhegorodskaya oblast assess the situation, and define measures to reduce risks of floods, and risks of possible pollutants inflow into water bodies.

**11. Did application of BP&T contribute (and to what possible extent) to problem-solving, or its mitigation)?**

Floods in the Volga basin is the regular phenomenon, and their scales vary. Prevention measures reduce the risk to locales and its population.

#### Section IV. EXPORT- IMPORT of BP&T ACROSS COUNTRIES and BASINS

**12. Examples of BP&T transferred across countries, river basins and stakeholder groups**

This BP methodology is internally developed by Emercom center, and it is applied in Nizhegorodskaya oblast only.

**13. Did BP&T transferred required adaptation (and to what extent) to local context and domestic specifics?**

No

**14. What were the major barriers and opportunities for transfer and adaptation of BP&T?**

No

**15. What was the 'external' influence in your BP&T implementation?**

No

#### Section V. RECOMMENDATIONS about MAJOR CHALLENGES for the REGION

- Consolidate interactions and coordination between all interested organizations
- Ensure allocation of necessary finance for freshet floods counteractive measures
- In order to increase effectiveness of flood mitigation, the government of Nizhegorodskaya oblast has to purchase data, for example hydrological sites' profiles in the Volga basin, and its transfer to all organizations and centers involved in flood mitigation
- Horizontal coordination needs to be ameliorated

№ 8

**NAME: Hydrodynamic GIS modeling of the Volga river (Tver-Cheboksay section)**

**FOCI: № 3**

**BASIN/PROVINCE/COUNTRY: Volga Basin/Russia**

#### Section I. BP&T APPLIED

**1. What exactly was the best practice or tool?**

Hydrodynamic model of the Volga river for its section between Tver and Cheboksary is developed. It is the result of cooperative research programme "Volga-Rhine" between the Karlsruhe University, Germany and N.Novgorod State University for Architecture and Civil Engineering. Its single- and bi-dimensional modifications are adapted also to the Volga tributaries.

Testing of this model is undertaken during preparations for out-letting of high water flows through Gorky-Cheboksary reservoir and during developing the design of the low-pressure dam near the Balakhna city

**2. With what purpose and reason of its application?**

The developed model can be applied with the following purposes:

- 1) management of the Volga cascade of reservoirs during the season of freshet floods flows
- 2) analysis of the processes of re-profiling of the river bed and its banks under projecting of hydrodynamic measures
- 3) forecasting of flooded areas during the flood periods
- 4) forecasting possible impacts of accidents at hydro-technical facilities

**3. Who applied it (i.e. authorities, water-users, civil society, international agencies), and what stakeholders were involved?**

Authorities and water-users

**4. Were any regulatory enforcement and incentive mechanisms used to support BP&T application?**

Decisions and resolutions of responsible organs in particular cases

#### Section II. CONTEXT FOR BP&T IMPLEMENTATION

**5. What were the major socio-economic or political constraints/barriers for BP&T application?**

Lack of system incentive for introduction of such innovative products into the regular practice. The result is the shortages in finance allocations, and hence, it limits the possibilities in improvements of mathematical modeling as a part of GIS

**6. What were the major constraints/barriers rooted in domestic water governance designs?**

Yes. There are internal bureaucratic barriers, associated with application and dissemination of methodological and program products.

**7. What were opportunities and drivers for BP&T application?**

Application and implementation of mathematical modeling mode as an integral GIS component for the river basin. Practical application is linked with provision of safety of exploitation of hydro-technical facilities, as well as ensuring preparedness to extreme changes in river flow.

**Section III. PERFORMANCE and EFFECTIVENESS**

**8. What was the degree of success, or failure in BP&T application in the river basin?**

Testing of this model in practice indicated at high compatibility of calculation results and in-situ changes.

**9. Did application of BP&T result in further development of capacity (regulatory, administrative, human, etc.) for adaptive water governance in river basins?**

This BP is associated with provision of safety.

**10. Did application of BP&T contribute (and to what possible extent) to problem-solving, or its mitigation)?**

Problem-solving in ensuring safety for local population and hydro-technical facilities is linked to regular practices and realization of a set of integrated measures. This model serves as an instrument for meeting these purposes.

**Section IV. EXPORT- IMPORT of BP&T ACROSS COUNTRIES and BASINS**

**11. Examples of BP&T transferred across countries, river basins and stakeholder groups**

Experience and lessons regarding development and application of similar models in the river basins in the EU were used while developing the model for the Volga.

**12. Did BP&T transferred required adaptation (and to what extent) to local context and domestic specifics?**

Yes. Hydrodynamic peculiarities of the river flow are the key for development of adequate mathematical mechanism modeling the changes in its parameters

**13. What were the major barriers for transfer and adaptation of BP&T?**

Financial; information dissemination

**14. What was the 'external' influence in your BP&T implementation?**

European experience has been the stimulus for development of the final product which can be applied in the Volga basin taking into account its specifics.

**Section V. RECOMMENDATIONS about MAJOR CHALLENGES for the REGION**

- Further development and upgrading of mathematical modeling instruments as an integral part of GIS need to be linked with its application practice
- Provide incentives and remove barriers for BP enforcement in everyday practice

**№ 9**

**NAME: Enhancing dissemination of information on water supply of rural areas to decision-makers**

**FOCI: № 3**

**BASIN/PROVINCE/COUNTRY: Yaroslavskaya Oblast/Russia**

**Section I. BP&T APPLIED**

**1. What exactly was the best practice or tool?**

Enhance information dissemination to decision-makers about the situation with water supply and means for its amelioration. BP was applied in 8 rural settlements in Danilov region, Yaroslavskaya oblast. Similar BP ere tested by G.White in the USA and in Africa

**2. With what purpose and reason of its application?**

Enhancing water supply for rural areas and their population, increase effectiveness of rural water supply, meeting the long-term requirements of rural households under market economy. The major question is to what extent the water management decisions are correct and sound, and if they correspond to local public perceptions in rural areas.

**3. Who applied it (i.e. authorities, water-users, civil society, international agencies), and what stakeholders were involved?**

Nongovernmental non-commercial organizations, local self-governance organs, government authorities, water-users.

**4.Were any regulatory enforcement and incentive mechanisms used to support BP&T application?**

Existing high drinking water quality norms limit diversification the water sources. Local population is unwilling to pay for water, as during the Soviet period they had water supply for free. Reduction of possible conflicts between water-users in households is an incentive for this BP application. (Despite large water resources in the

Yaroslavskaya oblast, the paradox situation is registered in the rural areas – there are shortages in water supply because the old centralized system of water supply is almost completely ruined; after removal of Soviet subsidies – the artesian wells were abandoned)

### Section II. CONTEXT FOR BP&T IMPLEMENTATION

**5. What were the major socio-economic or political constraints/barriers for BP&T application?**

Low professionalism of managers and decision-makers regarding provision of water services to rural areas; non-consideration of traditional knowledge; shortages in bottom-up initiatives (one of the reasons - local people do not consider water as a commodity to be paid for); lack of non-government organizations dealing with this problem.

**6. What were the major constraints/barriers rooted in domestic water governance designs?**

National barrier – too high standard for drinking water quality

**7. What were opportunities and drivers for BP&T application?**

Decline in government financing; no mechanisms for sustainable funding for support of the drinking water supply systems. Local authorities act according to ad-hoc decisions, responding mainly to currently emerging problems, without profound strategic visions and planning.

### Section III. PERFORMANCE and EFFECTIVENESS

**8. What was the degree of success, or failure in BP&T application in the river basin?**

BP is not widely and systematically applied, but some of its elements and measures were implemented by authorities and some of local stakeholders. The problem in particular villages is solved by local authorities – the program assessing the state of natural wells and old artesian sources is performed. However it did not have serious implications for the oblast.

**9. Did application of BP&T result in further development of capacity (regulatory, administrative, human, etc.) for adaptive water governance in river basins?**

Diversification of water supply at the local level reduces the pressure on water resources, reduces water consumption levels, as well as risks of water shortages in water supply systems.

**10. Did application of BP&T result in changes towards more adaptive behavior of stakeholders?**

Expanding dissemination of information to local and oblast authorities, and to local population resulted in formation of better perceptions about new economic market realities in the field. Stakeholder behavior becomes more responsible in economic terms.

**11. Did application of BP&T contribute (and to what possible extent) to problem-solving, or its mitigation)?**

Partial problem-solving is registered

### Section IV. EXPORT- IMPORT of BP&T ACROSS COUNTRIES and BASINS

**12. Examples of BP&T transferred across countries, river basins and stakeholder groups**

This BP is a practical lesson from its application by G.White in the USA and in Africa

**13. Did BP&T transferred required adaptation (and to what extent) to local context and domestic specifics?**

Adaptation to local conditions is required because of the differences in interest and specifics of stakeholders. In this particular case the common scheme for assessment was applied.

**14. What were the major barriers and opportunities for transfer and adaptation of BP&T?**

Major barrier is misperception by decision-makers - water-users are able to solve their water supply problems independently from authorities. Local authorities still have old-style thinking (Soviet) – centralized water-supply in absence of its funding mechanisms. People traditionally perceive water as a common good. There is no effective instrument for dissemination and application of this BP.

**15. What was the 'external' influence in your BP&T implementation?**

External influence is absent.

### Section V. RECOMMENDATIONS about MAJOR CHALLENGES for the REGION

- This BP is recommended for application in rural territories with low population density

## RUSSIA/NIS: BP&T Summary Table (form 2)

Berlin Regional Workshop 15-17 Jan. 2011

BP&T Examples	BP&T Applied				Context		Performance	
	Major purpose	What is done	Actors involved	Incentives/Enforcement	Barriers/Constraints	Opportunities/Drivers	Success Stories	Problems encountered
<b>Foci 1: Application of national water frameworks in river basins</b>								
<b>1.Reprofiling of urban riverside territories from industrial to business-administrative sites</b>	Cities sustainable development based on reconstruction and on higher effectiveness of land use,  Implementation of the RF Water Code and RF Urban Planning Code	Federal norms are adopted,  New rules for urban land use and urban construction are designed and enforced	Regional authorities and municipalities,  Owners of land sites	Market price and value of land as an incentive for changes in urban land use.  Increased opportunities for control over polluted water discharges	Investment risks,  Shortages in financing and investments	Increase in land value,  New investment opportunities,  Increased financial flows from taxes,  Increase in income of land users	Success in application in N.Novgorod, Chabarovsk, Yaroslavl	Failures in application in small town Balahna, where prices for land sites are lower, informal relations are stronger; accompanied by loss of jobs
<b>2. Relaxation of procedures and removal of administrative barriers in issuing permits for water use</b>	Increase in effectiveness of RF Water Code implementation through removal of administrative barriers,  Corruption reduction,  Simplification of administrative procedures	New federal system for issuing water use permits is developed and is being introduced, System of licenses for industrial enterprises is removed (JSC Amophos)	Water agencies within RF Ministry for Natural Resources, Water-Users	Positive innovation – equal requirements towards private and municipal enterprises, Introduction of responsibilities of municipalities and municipal enterprises for ensuring environmental security	Poor coordination between different levels of authorities	Water management system becomes more simple, clear, logical, effective and transparent Federation subjects are 'removed' from water resource management in the regions	Large water users benefit significantly from removal of administrative barriers	Problems for small enterprises which might result in increase of water-use tariffs
<b>3. Introduction of integrated river basin management within Amu-Darya river basin, Uzbekistan (example of the Lower Amu-Darya Basin Administration of Irrigation Systems)</b>	Effective use of water resources  Introduction of market mechanisms in water use  Introduction of	On the basins of former 230 water administrations 10 Basin management organizations for irrigation systems were established, as well as 1	Ministry for Agriculture and Water Resources and its provincial and regional branches  Administration	Government norms and regulations	Old principle of territorial water management is still in force Shortages in legislative basis for water resources management	Transition to integrated water resources management	Reorganisation in water management and reduction the number of water management administrations	Irrigation priority is decoupled from high quality drinking water supply and ensuring regular water supply for industries within



	<p>water saving technologies</p> <p>Policy coordination within river basin</p> <p>Regular water supply to water users</p>	<p>Administration for main canals in the Fergana valley</p>	<p>for main canals</p> <p>Associations of water users</p>		<p>Financial shortages</p> <p>Corruption</p> <p>Shortages in highly qualified hydrotechnicians</p> <p>Outmoded technical irrigation facilities and networks</p> <p>Low level of quality of life</p> <p>Deterioration of soils' quality</p>			<p>basin management strategies</p> <p>Low effectiveness of integrated water management</p> <p>Poor performance of Basin Councils or Basin Commissions</p> <p>Shortages in professional education and training of specialists in water sector management</p> <p>Insufficient practical experiences of Basin management organizations for irrigation systems</p>
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Foci 2: Engagement and coordination among actors, forms of interaction/partnerships								
<p><b>4. Vetluga river basin: Coordination practices in implementation of basin agreements at the local level (N.Novgorod, Kostorma oblasts, and Mary El republic)</b></p>	<p>Enhance quality of life at the local level with major attention to environment and culture</p> <p>Renaissance and preservation of traditional handicrafts</p> <p>Development of eco-tourism</p> <p>Coordination of local stakeholders</p>	<p>Mechanism of local response to global socio-economic challenges is established</p> <p>Annual festivals, Dialogues and</p> <p>Discussions are organized</p> <p>Publication of local history and traditions literature</p> <p>Local Hearings of Vetluga Association are held</p> <p>Information dissemination</p>	<p>Local self-governance organs</p> <p>Local public</p> <p>Business</p>	<p>Basin agreements of local self-governance organs</p> <p>Organisation of the national park at provincial (oblast) level</p> <p>Introduction of modern energy saving technologies in timber wastes processing</p>	<p>Declining economic opportunities and authority in environmental control for local self-governance organs</p>	<p>Expanded support – institutional and financial for local self-governance organs</p>	<p>Stakeholder coordination and participation</p> <p>High public awareness</p>	<p>Marginalisation, depopulation, migration are serious problems in the basin</p>
<p><b>5. Implementation of Environmental Development Strategy by Cherepovets chemical group FosAgro (JSC Ammofos, Cherepovets Azot, Agro-Cherepovets)</b></p>	<p>Reduction of negative environmental impact</p> <p>Implementation of corporate sustainable development strategy with effective water use and</p>	<p>Introduction of integrated management system based on ISO 9000, ISO 14 000, OHSAS 18 000 (enhancing internal</p>	<p>All industrial facilities of the group</p>	<p>Issuing of IPO (Initial Public Offer)</p> <p>Increase in corporate competitiveness</p> <p>Enhancing corporate green image</p>	<p>Institutional instability and uncertainty at the governmental level</p> <p>Too stringent national environmental norms which are difficult to</p>	<p>Improvements in investment climate</p> <p>Revival of domestic agriculture – consumer of company's products</p>	<p>Combination of climate mitigation and adaptation strategies</p> <p>Enhancing corporate social and environmental responsibility</p> <p>Government-business partnerships at the oblast level</p>	<p>Excessive internal vertical integration</p> <p>Bureaucratic procedures in the company</p>

	conservation as its integral part	audit) Modernisation of production based on incorporation of ecological priorities – introduction of closed water cycle, rejection of water use from the river for industrial processes, production of drinking water, energy savings Introduction of MES information systems including regular control, assessment and forecast of ecological parameters, and following preventive and mitigation actions Constant interaction with environmental consultants		Preparation for RF entry into WTO, compliance with REACH and OECD procedures	comply with Corruption and lobbying Internal corporate bureaucratic procedures  Too high internal corporate vertical integration				
<b>6. Introduction of international</b>	Sustainable	International	Water Users	Expanded	Additional	Increased	Enterprises	of	Moral and ethical

<p><b>environmental management system ISO 14000 by industrial enterprises</b></p>	<p>development of industrial enterprise based on enhanced corporate responsibilities and emission reduction</p>	<p>system ISO 14001 is introduced at enterprises</p>	<p>Business Certifying organisations</p>	<p>markets for industrial products Enhanced environmental image Environmental risk reduction Socio-economic risk reduction Increased motivation, Increased transparency in long-term perspective Compliance with the RF Water Code</p>	<p>financial, human costs,  Extremely high water quality norms</p>	<p>competitiveness  Increased incentives, motivation and institutionalization of relationships with water management authorities and control organs</p>	<p>Vologda Oblast</p>	<p>barriers in adaptation process – there is a number of actors willing to buy the certificate instead of adjust its internal systems to comply with the requirements of the certificate</p>
<p><b>Foci 3: Enabling learning and building adaptive capacity in water governance</b></p>								
<p><b>7. Flood monitoring and forecasting in Nizhegorodskaya oblast, Russia</b></p>	<p>Flood risk reduction</p>	<p>Creation of the data base for all types of flooding in N.Novgorod oblast</p>	<p>Emercom of N.Novgorod oblast Hydromet Upper Volga Basin Administration Government of N.Novgorod oblast</p>	<p>Resolution of the Government of N.Novgorod oblast for establishment of the Monitoring Center</p>	<p>Low effectiveness of application of produced forecasts in decision-making in N/Novgorod oblast Poor methodological support Shortages in financing</p>	<p>Flood risk management</p>	<p>Unique experience in data processing, monitoring and forecasting of floods  Extensive data base for flood events in N.Novgorod oblast</p>	<p>Loopholes in practical application of forecasts in operational decision-making  Poor horizontal coordination between government organs responsible for flood protection</p>
<p><b>8. Hydrodynamic GIS modeling in the Volga river (Tver-Cheboksary section)</b></p>	<p>Enhance safety of population and territories during seasonal floods in the Volga and its tributaries</p>	<p>Development of hydrodynamic model of river flow Tests of this model for management of the Gorky and Cheboksary water</p>	<p>N.Novgorod State University for architecture and civil engineering  Emercom of N.Novgorod oblast  Government of N.Novgorod</p>	<p>Russian – German research programme Volga-Rhine</p>	<p>Low interest of state agencies in application of products  Shortages in financing  Lack of information coordination</p>	<p>Effective management of risks</p>	<p>Development of hydrodynamic model of river flow which is adjusted to Volga hydro-specifics  Success in bilateral cooperation between Russia and Germany, and development of twinning partnerships in river basins</p>	<p>Poor links between science and decision-making  Lack of adequate “brokerage” of scientific results and their application in regular practice; lessons from practical application of this model in the Rhine are not properly taken</p>

		reservoirs under high water flows Assessment of possible changes in river banks and bed profile while projecting the Balakhna dam Forecasts for areas affected by flooding Forecast of possible consequences of accidents at hydrotechnical facilities	oblast Upper Volga Basin Administration Karlsruhe University, Germany					into account
<b>9. Enhancing dissemination of information on water supply of rural areas to decision-makers</b>	Improvement in water supply for population in rural areas Increase in effectiveness of water supply and services Higher extent in meeting the demand of rural water consumers in market economy in a long-term perspective	Analysis and assessment of water-use patterns  Results are passed to authorities of the federation subject and to the RF Federation Council	Non government organizations  Local self-governance organs Local authorities and administrations Water users	Degradation of drinking water supply systems in rural areas	Non-competence of decision-makers Rejection of traditional knowledge and practices Lack of initiative of local population High existing norms for drinking water quality	Interest of particular water users	Yaroslavl Oblast	Misunderstanding that water users are able to solve on their own and independently the problems of water supply of the locales People in rural areas still perceive water as common good No instrument for good practice dissemination and multiplication

EXPORT – IMPORT of BP&T					
Projects/Initiatives	From where transplanted	Need for adaptation	Major barriers	External influence and foreign assistance	Recommendations

				in BPT application	
<b>1. Re-profiling of urban riverside territories from industrial to business-administrative sites</b>	Based on legal zoning systems of developed countries	Adaptation is needed at the federal level through introduction of federal laws; at local level – differences in demand, character and specifics, and time-scales of reprofiling process	Barrier – in differently directed interests and lack of experiences in introduction of instruments for legal zoning	Foreign assistance was granted for education of Russian experts who took part in development and implementation of the legal zoning system in urban areas	<ul style="list-style-type: none"> <li>▪ Information dissemination to interested actors, education for decision-makers</li> <li>▪ Adoption of equal and transparent conditions for businesses involved in reprofiling</li> <li>▪ Taking into account that these practices better perform in the cities than in smaller towns</li> </ul>
<b>2. Relaxation of procedures and removal of administrative barriers in issuing permits for water use</b>	Borrowed both from the international and national experience and practice	Practices were adapted to the Russian legislation, and to existing water use frameworks and experiences	Barrier was of administrative and bureaucratic character	No need in assistance	<ul style="list-style-type: none"> <li>▪ Norms for issuing permits are adopted basing on the list of necessary documentation</li> </ul>
<b>3. Introduction of integrated river basin management within Amu-Darya river basin, Uzbekistan</b>	From the West	Significant need for adaptation to local/national specifics	<ul style="list-style-type: none"> <li>• old institutions and territorial principles of water management are still applied</li> <li>• lack of practical experience and knowledge in basin management application in irrigation</li> <li>• undeveloped national water legislation</li> <li>• Poor</li> </ul>	Trial test in Fergana region together with Swiss partners	<ul style="list-style-type: none"> <li>▪ Extend this practice application to other sustainable development priorities – drinking water supply to households, industrial water supply; but not only to priority agricultural (cotton growing) use; real integrated management within Sd priorities is essential</li> <li>▪ Further institutional reforms in water sector, and development of modern water legislation</li> <li>▪ Professional education and training</li> <li>▪ Increase control, transparency and accountability over financial flows</li> <li>▪ Stimulate investments into irrigation systems and networks</li> </ul>

			horizontal coordination; ineffective Basin councils and commissions <ul style="list-style-type: none"> <li>• Financial shortages</li> <li>• Outmoded irrigation network constructed under Soviet regime</li> <li>• Low life quality</li> </ul>		
<b>4. Vetluga river basin: Coordination practices in implementation of basin agreements at the local level (N.Novgorod, Kostroma oblasts, and Mary El republic)</b>	Internal initiative	na	Declining economic opportunities and rights in ecological control by local self governance organs	Indirect influence and social learning from similar coordination practices worldwide	<ul style="list-style-type: none"> <li>▪ Strengthen the authority and power of local self-governance organs</li> <li>▪ Broader support for application of local public initiatives and participation</li> <li>▪ Seek additional economic opportunities for broader dissemination of local handicrafts; can serve as additional income opportunities for marginalized households</li> <li>▪ Development of eco-tourism at the local level and provision of extra jobs for young generation which is important to reduce the migration to other regions and urbanised areas</li> <li>▪ Develop twinning partnerships with stakeholders in river basins in Europe</li> </ul>
<b>5. Implementation of Environmental Development Strategy by Cherepovets chemical group FosAgro</b>	Internal corporate programme; some of its elements are borrowed from existing universal international practices of sustainable development by chemical industries	Internal corporate specifics is the dominant factor; main items of existing standard sustainable development practices are taken into account	<p>Institutional uncertainties at the national level</p> <p>Poor national framework and guidelines for sustainable development by industrial companies</p> <p>Limited incentives by the government for environmental programs implementation in practice</p>	Based on internal capacity	<ul style="list-style-type: none"> <li>▪ Enhance corporate-state partnerships in sustainable development</li> <li>▪ Introduce by the government the package of incentives for enterprises active participation in sustainable development programs implementation</li> <li>▪ Strengthen internal corporate perceptions that implementation of universal sustainable development strategies is a necessary condition for enhancing its competitiveness at the world markets</li> <li>▪ Further diversification and strengthening of links between economic, environmental and social responsibility priorities of the company; further assessment of “win-win” options</li> <li>▪ Consolidate social learning from other international chemical companies in sustainable water management</li> <li>▪ Assessment of future risks and opportunities in relation to WTO, REACH, OECD environmental standardization</li> <li>▪ Social learning from the EU about application adaptive management under climate change</li> </ul>

<b>6. Introduction of international environmental management system ISO 14000 by industrial enterprises</b>	International experience and practice	Russian standard is introduced in order to incorporate international standards into the national system of standards	Need in financial resources and human capacity	Foreign assistance is in undertaking certification Influence is in integration of standards system into the requirements of the international market	<ul style="list-style-type: none"> <li>▪ Creation of solid regional management system based on certification of the major part of large enterprises in the region</li> <li>▪ Increase in competence of the owners, managers and specialists at the higher management level is essential</li> </ul>
<b>7. Flood monitoring and forecasting in Nizhegorodskaya oblast, Russia</b>	Domestic initiative	na	Insufficient links and exchange of methods with similar forecasting services in the EU	No influence	<ul style="list-style-type: none"> <li>▪ Develop international partnerships and joint projects</li> <li>▪ Promote international exchange of methods with the counterparts in the EU which have value-added potential</li> <li>▪ Increase effectiveness in practical application of forecasts and products</li> <li>▪ Consolidate stronger links with policy-making</li> </ul>
<b>8. Hydrodynamic GIS modeling in the Volga river (Tver-Cheboksary section)</b>	Germany, Karlsruhe University	Adaptation to Volga river hydrological regimes specifics, including a) differences in river flow in comparison to Rhine; b) cascade of larger reservoirs in the Volga than in Rhine	Lack of interest from government organizations and authorities in application of this model in practice  Financial shortages  Lack of information coordination  Government authorities regard this project and its products as a kind of competitors	Direct influence and support from project partners in Karlsruhe University	<ul style="list-style-type: none"> <li>▪ Need for ensuring early participation of representatives from government organizations in development and application of such modeling products</li> <li>▪ Enhance coordination of data processing between various organisations</li> <li>▪ Increase PR among government organizations to increase their interest and support; expand efforts to show advantages of results, 'sell-out' the final product among practitioners and Basin Water Management Boards (BWMB)</li> <li>▪ 'Brokerage' and intermediary actions between science and policy making might be useful</li> </ul>
<b>9. Enhancing dissemination of information on water supply of rural</b>	This BP is the practical	Adaptation to local	Major barrier – misconception	External influence is	<ul style="list-style-type: none"> <li>▪ Recommended to apply this practice in economically depressive and marginalized territories/regions</li> </ul>



<p><b>areas to decision-makers</b></p>	<p>experience of G. White applied in USA and in a number of African countries</p>	<p>conditions is a necessary requirement due to differences in water supply systems, traditions and culture of water use</p>	<p>that local water users are not able to independently solve the problems of their water supply (drills for underground water). People traditionally perceive water as a common good. There is no adequate instrument for this practice multiplication</p>	<p>absent; internally/local ly induced</p>	
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# SOUTH EAST ASIA: BP&T inventories by experts (form 1)

**Foci: 1**

**Example: Implementing IWRM through RBO in Vietnam**

## Section I. BP&T APPLIED

- 1. What exactly was the best practice or tool?**
  - Water Resources Law and under the Law documents (Decree on River Basin Management 2008).
  - National water resources management strategy (2006)
  - Rearrangement of State water resources management agencies at different levels
  - Establishment of RBOs;
  - Subsidy on investment, upgrade and repair hydraulic works and water supply;
  - Water fee, water tariffs policy changed;
  - Applying PIM at community level
  - production of water resources river basin atlas
  - IWRM Tool box of GWP
- 2. With what purpose and reason of its application?**
  - Avoiding the fragment and inefficient of water resources management at all levels;
  - Better coordination among ministries/and local authorities; conflicting resolutions
  - Promote the participatory of stakeholders
- 3. How was the best practice or tool applied?**
  - Establish River Basin Planning Management Board with participation from central to local authorities;
  - Establish River Basin Environmental Protection Committee with stakeholders;
  - Organization of regular stakeholders forums
  - Building capacity for staff on IWRM in RB
- 4. Who applied it (i.e. authorities, water-users, civil society, international agencies), and what stakeholders were involved?**
  - MARD, MoNRE, NWRC, PPCs;
  - ADB, WB, Danida, int's NGOs;
  - VNWP, VRN...

Involvement of stakeholders:

  - Preparation of legal frameworks (Govt' agencies/some civil societies); operating the RBOs,
  - Support for RBOs establishment (Donors)
  - Policy advocacy activities (NGOs)
- 5. Were any regulatory enforcement and incentive mechanisms used to support BP&T application?**
  - NWRC;
  - Decrees/circulars/decisions from national of local levels

## Section II. CONTEXT FOR BP&T IMPLEMENTATION

- 6. What were the major socio-economic, or political constraints for BP&T application?**
  - No appropriate financial support for RBOs
  - Not real appropriate power and responsibilities are assigned for RBO by administrative system ;
  - Lack of public awareness on RBO (information dissemination etc.);
- 7. What barriers did BP&T face? Who opposed BP&T use?**
  - Conflicting interests of existing WRM administrative system and RBO, amongst concerned agencies, and between central and local systems ;
  - Not appropriate institutional arrangement;
  - Shortage of financial and human resources for core functions,
  - No successful similar modality of RBO in country
  - No official observation on opposing BP&T observed.
- 8. How were barriers overcome?**
  - New Decree of RBM issued for new formality of RBO

Constrains:

  - Political will (Government and related Ministries should provide RBO with strong support).
  - Good legislation to support RBO
  - Appropriate power/mandates for RBO should be included in leg; framework;

- Strengthening RBO's staff's capabilities;
- Enough budget for organization and activities where needed are located by the Government.
- 9. What opportunities and drivers for BP&T application existed?**
- Degrading water resources all basins in country (quantity/quality);
- The legal frameworks improvement in progressing
- Experiences on RBO are introduced/imported from other countries;
- Donor supports
- 10. Who supported the use of BP&T? Did they take advantage of them?**
- Donors; Civil society, NGOs;

### Section III. PERFORMANCE and EFFECTIVENESS

- 11. What was the degree of success, or failure in BP&T application in the river basin?**  
- 30/70;
- 12. What were the major reasons for success, or failure?**  
For success:
  - Urgent requirements for river basin saving
  - The reform of the policy;
  - Donor supports;
  - Participation of stakeholders is being improved
 For failure:
  - Resistant in power sharing from existing administration;
  - Lack and weakness of existing legal framework ;
  - Lack of human and financial resources
- 13. Did application of BP&T result in further development of capacity (regulatory, administrative, human, etc.) for adaptive water governance in river basins?**
  - Yes,
  - + Issuing new Circular of MONRE for river basin management
  - + Encouragement of stakeholders participation in WRM
  - + Capacity building of IWRM at all levels in water sector;
- 14. Did application of BP&T result in changes towards more adaptive behavior of stakeholders?**
  - Yes, but not much
- 15. Did application of BP&T contribute (and to what possible extent) to problem-solving, or its mitigation)?**
  - Very little/not yet

#### (Thailand)

#### Example: Participatory water allocation at Bangpakong and Prachinburi River basin

### Section I. BP&T APPLIED

- 1. What exactly was the best practice or tool?**
  - Tool for decision making support (WEAP) and data collection
  - Water related Resource mapping by participatory
  - Transfer Knowledge among user groups
  - Dialogue
- 2. With what purpose and reason of its application?**
  - Sustainable water use in Bangpakong and Prachinburi River basin
  - Conflict management
  - Multi-Stakeholder processes
- 3. How was the best practice or tool applied?**
  - Process at water allocation:
    - establish water user groups
    - develop decision system support
    - Negotiation and agreement
    - monitoring
    - Report
  - Set up Data Center for water resource management at basin level
  - Technical Training
  - Pubic relation
    - Water user registration cooperation with local administration organization

4. **Who applied it (i.e. authorities, water-users, civil society, international agencies), and what stakeholders were involved?**  
 River Basin Committee  
 Water users  
 Civil society  
 Local administration organization  
 International agencies (ADB FAO Global Water Partnership)
5. **Were any regulatory enforcement and incentive mechanisms used to support BP&T application?**
  - Local administration decree
  - Coordination and corporations among different agencies/stakeholders

## Section II. CONTEXT FOR BP&T IMPLEMENTATION

6. **What were the major socio-economic, or political constraints for BP&T application?**
  - Lack of water law
  - Politicians motivation/interventions
  - Agricultural prices market mechanism such as rice fishes shrimps
7. **What barriers did BP&T face? Who opposed BP&T use?**
  - Sectoral Government System, Different views and policies among government agencies
  - Lack of public awareness on this issue.
  - different information system, no integration
  - lack of technical knowledge (local and basin level)
8. **How were barriers overcome?**
  - raising public/stakeholders awareness
  - Facilitate knowledge information sharing-different levels
  - Promote public and stakeholders acceptances via diff. kinds of meetings, seminars
  - promoting-campaigning to set public agenda
9. **What opportunities and drivers for BP&T application existed?**
  - Duty and responsibility of the River Basin Committee according to PM office's decree
  - Problems identified by local stakeholders in the sub-basin such as drought etc.
  - Expectation of societies to share power and take the leading role
10. **Who supported the use of BP&T? Did they take advantage of them?**  
 Government  
 International agencies

## Section III. PERFORMANCE and EFFECTIVENESS

11. **What was the degree of success, or failure in BP&T application in the river basin?**  
 Degree of success is Water group strengthening and more systematic for data and information system for decision making
12. **What were the major reasons for success, or failure?**  
 Sharing knowledge among stakeholder is the key to success and also the understanding of main actors on water situations, scenarios
13. **Did application of BP&T result in further development of capacity (regulatory, administrative, human, etc.) for adaptive water governance in river basins?**  
 Enhancing and promoting the acceptance of Negotiation as a crucial process for water management in the gov. agencies.
14. **Did application of BP&T result in changes towards more adaptive behavior of stakeholders?**  
 To help increase awareness among stakeholders in the Basin.
15. **Did application of BP&T contribute (and to what possible extent) to problem-solving, or its mitigation)?**
  - Reduce Conflict among stakeholders
  - Increase water use efficiency
  - Pave the way to Adaptation to climate change such as change river flow pattern, increase salt intrusion, Flood and drought

(Nepal)

**Example: Climate change monitoring and adaptation through efficient information flow, central and western Nepal**

### Section I. BP&T APPLIED

**1. What exactly was the best practice or tool?**

Provide information in a real-time manner appropriate to the decision-making requirements of the stakeholders, for disaster management and building resilience of the communities for climate change adaptation.

**2. With what purpose and reason of its application?**

The main purpose is to reduce weather induced hazards in term of reduced fatalities and economic losses. Increased capacity of the Department of Hydrology and Meteorology (DHM) could generate a suite of flood and climate information regarding past and current climate, observable trends, future hydro-climatic projections and establish enhanced national capacity for flood risk reduction and adaptation to climate change in Nepal. The web-based real time information has the potential of providing service not only to the communities but also serving beyond border to the downstream nations – India and Bangladesh.

**3. How was the best practice or tool applied?**

Availability and affordability of wireless telephone-based data transmission system in recent years in Nepal were the major advantages that could contribute to the development of real time data acquisition system. The system was first tested in the Narayan basin by establishing a rainfall transmission with a tipping-bucket rain gauge and a water level transmission system upgrading the existing analogue water level recorder on the Narayani River in 2007. After the success of the initial experiments, the system was further extended to another hydrometric station and to seven rain gauge stations. A web portal addressed [www.hydrology.gov.np](http://www.hydrology.gov.np) provides not only the real time data but also some preceding data with graphical visualisation tools in a user friendly manner. An automatic data dissemination system was incorporated during the 2010 monsoon using mobile communication generating SMS to relevant agencies triggered by warning events. The sensors used for instrumentation were imported from the European and American countries, whereas, data transmission and data acquisition facilities were developed and installed by Nepali engineers ensuring sustainability of the system.

The real time data acquisition system has further been extended to other river basins in West Nepal including the West Rapti River basin and the Babai Rver basin. In addition, a flood forecasting system is being implemented in the Bagmati River basin under additional support from the Danish Government (DANIDA). The web-based facilities have also been useful to some agencies working at community level. Practical Action, an INGO, has been conducting some awareness program to include the available real time data and information system is being used to develop a stream flow forecasting system for the Narayani and Bagmati basins in central Nepal.

**4. Who applied it (i.e. authorities, water-users, civil society, international agencies), and what stakeholders were involved?**

The Department of Hydrology and Meteorology (DHM), Ministry of Environment was the main agency responsible to develop and apply the system. The system is being upgraded in the Bagmati basin under the project "Climate Change Adaptation and Disaster Risk Reduction, Bagmati Basin" with support from DANIDA. The other major agencies involved in the project are: Institute of Water Modelling (IWM), Bangladesh, and Regional Integrated Management of Early Warning System (RIMES), Bangkok. Practical Action is another organization promoting the system at community level.

**5. Were any regulatory enforcement and incentive mechanisms used to support BP&T application?**

The activity was based on the National Water Plan (2005) and the Disaster Management Strategy (2009) approved by the Government of Nepal. The system has also attracted the policy makers involved in the development of climate change adaptive measures. Recently, DHM has received additional support from the Government of India to extend the system at a few locations in the Kosi River basin, which will be implemented prior to the 2011 monsoon.

### Section II. CONTEXT FOR BP&T IMPLEMENTATION

**6. What were the major socio-economic, or political constraints for BP&T application?**

- Inadequate publicity and awareness.
- Inadequate financial support from government
- Inadequate coverage of community-based organizations

**7. What barriers did BP&T face? Who opposed BP&T use?**

- Financial constraints; funding inadequate for upgrading key stations of the hydro-meteorological network

- Load shedding/Energy crisis; although it happens less in the critical time during the summer monsoons
- Inadequate data dissemination mechanisms as telephone and internet facilities are not accessible to a major population of the country. The situation, however, is changing as the prices of mobile system are sharply decreasing. Almost one third of population in Nepal are in the network of either Global System of Mobile (GSM) or under the Code Division Multiple Access (CDMA). Government of Nepal has been working to bring the whole country under the CDMA scheme.
- Limited expertise as only a few agencies and engineers are involved in the development and implementation of the system.

#### **8. How were barriers overcome?**

- International support: some supports received from development partners and international NGOs have particularly been effective for instrumentation of stations.
- NGO/Stakeholder interest; the outcomes have been effective to impress the stakeholders.
- Media support; the applied practices have been highlighted by media following their participation and in some cases field visits.
- Alternate data transmission; since a single mode of data transmission can sometimes fail, we have adopted more than one mode of data transmission using additional SIM card from additional mobile service provider and CDMA.
- Alternate energy provision; solar panel have been used for power supply in most of the cases to avoid power break downs and load shedding.

#### **9. What opportunities and drivers for BP&T application existed?**

- Data quality; real time data availability helped to monitor any instrument faults, battery status and errors for timely maintenance. Besides timely processing of data also helped in improving the quality of data.
- Access to data and information; because of web portal available all the time, data are accessible to everybody globally. Major stakeholders have additional facility of automated SMS during warning type of situations.
- Technology advancement; application of rapidly expanding wireless communication systems and lowering the prices of electronics-based equipment have helped to bring the facilities to the reach of even the poor communities.
- Development of local expertise
- Regional and international dissemination of data

Policy Drivers are the Water Resources Strategy of Nepal, National Water Plan: Nepal which cover Climate change, Disaster and Information.

#### **10. Who supported the use of BP&T? Did they take advantage of them?**

- National: Government of Nepal, INGO, NGO
- Regional: RIMES, IWM, ICIMOD, Government of India and Regional projects
- International: DANIDA, World Bank

Part of national, regional and international projects and activities are benefitted through the information access and application.

### **Section III. PERFORMANCE and EFFECTIVENESS**

#### **11. What was the degree of success, or failure in BP&T application in the river basin?**

Successes include:

- Web-based real time data acquisition established (100%)
- Early warning system for natural disaster is ongoing established (40%)
- Modernized database management system for efficient collection processing and dissemination of data/information in place (75%)
- Relevant organizations and agencies using the facilities in their planning and development activities (20% to 30%)

Failures include:

- Not yet able to cover major parts of Nepal.
- Modelling of stage vs. inundation is limited in term of accuracy as well as extent.

#### **12. What were the major reasons for success, or failure?**

Major reasons behind successes include:

- Downward trends of costs on advanced technologies
- Development of expertise at national level
- Increasing interest at bilateral, regional, and global levels
- Increasing support from development partners

Major reasons behind failures include:

- Poor accessibility due to harsh environment in high mountain areas
- Inadequate funding and limited expertise.
- Stage-inundation information is inadequate because of inadequate resolution of available DEM and the limited work on floodplain modelling.

**13. Did application of BP&T result in further development of capacity (regulatory, administrative, human, etc.) for adaptive water governance in river basins?**

Technological advancement of DHM activities developed conducive environment for its modernization efforts and for better and efficient service delivery. Efficient data and information system provided a useful platform for concerned decision makers to develop a decision support system for water governance. A knowledge-based information system being developed at the Water and Energy Commission Secretariat (WECS) and an integrated water resources policy being finalised by WECS consider the use of the available efficient data and information system for IWRM.

**14. Did application of BP&T result in changes towards more adaptive behavior of stakeholders?**

Some sectors and agencies are using it but because it is still in testing phase, the full potential and adaptive behaviour are yet to be realized.

**15. Did application of BP&T contribute (and to what possible extent) to problem-solving, or its mitigation)?**

It is already contributing in disaster mitigation and data quality improvement for water resources development/management and climate monitoring.

**Example: Kosi River Basin Management Strategy (2007), Nepal**

**Section I. BP&T APPLIED**

**1. What exactly was the best practice or tool?**

The practice is the implementation of a pilot program based on an integrated water resources and river basin management approach guided by the National Water Plan. The strategy plan aims at improving people's livelihoods significantly in sustainable manner by ensuring people's rights' over water and related resources, promoting socio-economic development for the benefit of all people while maintaining the ecological balance in the Kosi River Basin. Main objective was to explore partnerships and the formulation of a vision for Kosi River Basin Management (KBRM).

**2. With what purpose and reason of its application?**

Integrated water resource management (IWRM) acknowledges that freshwater is a finite and vulnerable resource, essential to sustain life, development and the environment. It proposes that each river basin system shall be managed holistically and in a systematic manner so that freshwater utilization is sustainable to ensure conservation of resources and protection of the environment. This is the first initiative of its kind in Nepal. Participants of the workshop included representatives from the government, NGOs, the private sector, and experts working in development, water resources, and conservation to enforce Integrated Water Resources Management on the Kosi basin level.

**3. How was the best practice or tool applied?**

The conceptualization of IWRM in WWF Nepal initiated with the participation in the "Network of Asian River Basin Organizations (NARBO)" training in Sri Lanka in April 2005.

A series of meetings were held with the Water and Energy Commission Secretariat (WECS) in Kathmandu to formalize the effort to work together in river basin management, which finally resulted in a formal meeting with stakeholders on January 2007, where the commitment of the initiative has been agreed. In 2010 a national level stakeholders' consultation workshop on Kosi River Basin Management Strategy Plan to gather all stakeholders, and ensure the effective implementation of the plan took place. At the workshop, Government authorities, representatives of NGOs, INGSs, UN agencies, think tanks and academics expressed their suggestions on the draft strategic plan.

The plan has been prepared with the concept of three pillars of integrated Water Resources Management namely: economic efficiency, environmental sustainability and social equity with 10 years vision, from 2011-2021.

**4. Who applied it (i.e. authorities, water-users, civil society, international agencies), and what stakeholders were involved?**

The program is initiated by Water and Energy Commission Secretariat of the government of Nepal (WECS)-a Government Apex body for water resources and WWF Nepal.

The program will be implemented with active involvement of local governmental and non-governmental organizations in a decentralized system as envisaged under the National Water Plan 2005.

**5. Were any regulatory enforcement and incentive mechanisms used to support BP&T application?**

For the first time in Nepal, field piloting of National Water Plan was initiated to translate the policy into practice.

## Section II. CONTEXT FOR BP&T IMPLEMENTATION

### 6. What were the major socio-economic or political constraints for BP&T application?

One of the challenging tasks of the National Water Plan, Nepal (2005) is the integration of all crosscutting sectors as well as individual water-related traditional subsectors.

### 7. What barriers did BP&T face? Who opposed BP&T use?

Unknown

### 8. How were barriers overcome?

Integration of different sectors could be achieved due to meetings and involving various actors in the development of the strategy.

### 9. What opportunities and drivers for BP&T application existed?

The participants of the workshop welcomed this innovative and joint initiative of WECS and WWF Nepal. They also provided valuable suggestions to move ahead in managing the Kosi River basin. WECS and WWF Nepal expressed their commitment to work with other partners and stakeholders in its management.

### 10. Who supported the use of BP&T? Did they take advantage of them?

## Section III. PERFORMANCE and EFFECTIVENESS

### 11. What was the degree of success, or failure in BP&T application in the river basin?

In 2010 a major milestone has been achieved– the Kosi River Basin Management Program, the first field piloting of the National Water Plan 2005.

State of 2010:

- Two sub basin offices established and functional for field Implementation
- KRBM Strategic Plan prepared in wider consultation with stakeholders
- KRBM Cell established in WECS
- Funds were made available for three year field implementation to showcase first field pilot of IWRM as prioritized by NWP 2005 in Kosi.

### 12. What were the major reasons for success, or failure?

Good monitoring, the document “From Policy to Practice” is a process documentation of WECS and WWF’s joint initiative to first field piloting of IWRM approach as prioritized by the NWP 2005. This document explains the effort to translate policy into practice by showcasing Kosi River Basin Management Program as a model for conservation and wise use of water and its resources to secure life and livelihoods of generations to come.

### 13. Did application of BP&T result in further development of capacity (regulatory, administrative, human, etc.) for adaptive water governance in river basins?

This initiation on KRBM will generate the necessary knowledge base on resources within the Kosi River Basin to ensure its wise use.

### 14. Did application of BP&T result in changes towards more adaptive behavior of stakeholders?

Cannot be assessed now, but KRBM includes Awareness Materials and trainings:

- Water conservation and multiple use methods were introduced to the local Communities.
- Prepared more than 3000 Eco Club students as young water leaders to raise awareness on river basin and environmental management
- Field demonstration site was established as a learning center for the local communities to learn and share experiences on water conservation and multiple use.
- Introduced Non Timber Forest Product/High Value Crop (NTFP/HVC) based livelihood alternatives and promoted market linkage in Siku Catchment to improve the livelihood of local communities.

### 15. Did application of BP&T contribute (and to what possible extent) to problem-solving, or its mitigation)?

The ten year KRBM strategic plan is being prepared by WECS in consultation with wider stakeholders to operate the IWRM principle as prioritized by NWP 2005 and aims to achieve the sustainable use of water and related resources in the Kosi River Basin. Strategy is still in the process of implementation.

## INDIA

### Example: Safe drinking water

## Section I. BP&T APPLIED

### 1. What exactly was the best practice or tool?

(1) Rural: Traditional management practices and technological interventions management practices, i.e. water harvesting, pipe water supply, surface water tapping, and promotion of water filters on household level.



(2) Urban: Expansion of extracting surface water resources and building treatment plants with efficient distribution systems.

**2. With what purpose and reason of its application?**

Purpose:

(1) Establish safe drinking water supply for the people living in rural and city environments.

Reasons:

- (1) People suffered from many water borne diseases.
- (2) Inadequate supply of safe drinking water
- (3) Groundwater contamination with Fluoride and Arsenic

**3. How was the best practice or tool applied?**

- (1) Building of water treatment plants in every development block (block:= administrative unit)
- (2) Improving municipal water treatment infrastructure.
- (3) Improving private water supply facilities.
- (4) Introducing license regulations for private water supplier.

**4. Who applied it (i.e. authorities, water-users, civil society, international agencies), and what stakeholders were involved?**

- (1) Rural areas: Public Health Engineering Department of the NER states
- (2) Urban areas: Municipal Board

**5. Were any regulatory enforcement and incentive mechanisms used to support BP&T application?**

- (1) Statuary rules of municipal corporations and urban water supply board.
- (2) In the hill districts village councils/community bodies formulate their local regulations and rules to govern water supply.
- (3) Funding was supplied by the Government of India by means of the scheme "Rajiv Gandhi Drinking Water Supply Mission" in 2004-5. and the "Jawaharlal Nehru Urban Renewal Mission".

**Section II. CONTEXT FOR BP&T IMPLEMENTATION**

**6. What were the major socio-economic or political constraints for BP&T application?**

- (1) Political will is quite low at the state and subsequent hierarchies
- (2) Bureaucracy and routing of funds is not transparent.
- (3) Due to dispersed settlements, especially in hill areas the cost for connecting households to the distribution system is quite high.
- (4) In some hill districts water from springs is considered better for drinking and pipe water is used only for washing.

**7. What barriers did BP&T face? Who opposed BP&T use?**

- (1) Vested interest from private suppliers
- (2) Lack of awareness about water quality issues and consequences

**8. How were barriers overcome?**

- (1) Not much done so far except of the beginning of warning leveling

**9. What opportunities and drivers for BP&T application existed?**

Opportunities:

- (1) Available infrastructures in PHE and State Pollution Control Boards of NER

Drivers:

- (1) Bad water quality caused water borne diseases
- (2) Donors support, e.g. UNICEF
- (3) Corporate support
- (4) National Rural Health Mission (NRHM)

**10. Who supported the use of BP&T? Did they take advantage of them?**

- (1) Central and State Governments of the NER
- (2) Asian Development Bank (ADB) and alike

**Section III. PERFORMANCE and EFFECTIVENESS**

**11. What was the degree of success, or failure in BP&T application in the river basin?**

- (1) Urban area 30% and rural area 80%
- (2) Failure not reported so far.

**12. What were the major reasons for success, or failure?**

- (1) Success because of adequate funds and mission approach
- (2) Failure because of over-emphasis on achievement of target rather than fulfilling the actual needs and pilferage.

- 13. Did application of BP&T result in further development of capacity (regulatory, administrative, human, etc.) for adaptive water governance in river basins?**  
 (1) Yes, i.e. monitoring and management of water supply schemes and stakeholder involvement
- 14. Did application of BP&T result in changes towards more adaptive behavior of stakeholders?**  
 (1) Yes, as awareness developed understanding the scarcity of water
- 15. Did application of BP&T contribute (and to what possible extent) to problem-solving, or its mitigation)?**  
 (1) Yes

### Example: Irrigated Agriculture

#### Section I. BP&T APPLIED

- 1. What exactly was the best practice or tool?**  
 (1) Tapping shallow groundwater with tube wells and pumps in Assam  
 (2) Distribution of water through community farmer associations  
 (3) Irrigation command area development by the Irrigation Departments of the NER states.
- 2. With what purpose and reason of its application?**  
Purpose:  
 (1) To step up cropping intensity and productivity by ensuring irrigation water supply.  
 (2) Poverty elimination and improvement of rural employment.  
Reasons:  
 (1) Lack of irrigation  
 (2) Introducing the principle of equity and contributing to conflict resolution.  
 (3) Improve irrigation infrastructure and water use.
- 3. How was the best practice or tool applied?**  
 (1) Government initiative for supplying funds and resources  
 (2) Involvement of NGOs and community development organizations (CDOs)  
 (3) Capacity building at farmer and village level.
- 4. Who applied it (i.e. authorities, water-users, civil society, international agencies), and what stakeholders were involved?**  
 (1) State authority, international agencies, water-users and farmer associations.
- 5. Were any regulatory enforcement and incentive mechanisms used to support BP&T application?**  
 (1) Rules and regulations incorporated in the central and state government schemes  
 (2) Mandates of donor organizations and funding organization like World Bank  
 (3) Local monitoring bodies from the community

#### Section II. CONTEXT FOR BP&T IMPLEMENTATION

- 6. What were the major socio-economic or political constraints for BP&T application?**  
 (1) Absence of political consensus  
 (2) Poverty and fragmented land holding
- 7. What barriers did BP&T face? Who opposed BP&T use?**  
 (1) Topography of irrigated land  
 (2) Conflicts between big and small land holders.
- 8. How were barriers overcome?**  
 (1) Proper land gradient for efficient sharing of irrigation water  
 (2) Establishment of water user committees  
 (3) Training and capacity building in operation and management (OAM)
- 9. What opportunities and drivers for BP&T application existed?**  
Opportunities:  
 (1) High ground water table due to high recharge rates  
Drivers:  
 (1) Farmers were suffering from long spells of droughts causing Governments actions
- 10. Who supported the use of BP&T? Did they take advantage of them?**  
 (1) Central Government of India  
 (2) World Bank

### Section III. PERFORMANCE and EFFECTIVENESS

- 11. What was the degree of success, or failure in BP&T application in the river basin?**
  - (1) Around 27 % of irrigated land is supported by groundwater and surface water in North East India
  - (2) Some of the surface irrigation schemes have been failures due to improper planning and inadequate engineering analyses and some partially successful.
- 12. What were the major reasons for success, or failure?**
  - (1) Success:
    - Acceptance by the farmers
  - Failure:
    - Same as in section 11
- 13. Did application of BP&T result in further development of capacity (regulatory, administrative, human, etc.) for adaptive water governance in river basins?**
  - (1) Yes, i.e. participatory irrigation schemes and water distribution involving the community.
- 14. Did application of BP&T result in changes towards more adaptive behavior of stakeholders?**
  - (1) Sense of ownership developed
  - (2) Level of financial security and discipline rose
- 15. Did application of BP&T contribute (and to what possible extent) to problem-solving, or its mitigation)?**
  - (1) Yes, command area increased along with productivity

#### Example: Hydropower

### Section I. BP&T APPLIED

- 1. What exactly was the best practice or tool?**
  - (1) Giving impulses for industrial development and groundwater exploitation for irrigation
  - (2) Electrification of rural areas
- 2. With what purpose and reason of its application?**

Purpose:

  - (1) Improve living standards through generation of employment and income.
  - (2) Improving livelihood opportunities

Reasons:

  - (1) Upscaling and diversification of economic activities
  - (2) Spread of risk factor
- 3. How was the best practice or tool applied?**
  - (1) Multipurpose reservoir infrastructures
  - (2) Run-off-river hydro-electric (hydel) projects
- 4. Who applied it (i.e. authorities, water-users, civil society, international agencies), and what stakeholders were involved?**
  - (1) Government of India public sector undertakings such as NEEPCO, NHPC, ASEB, MSEB.
  - (2) Private developers for micro and mini hydel projects.
- 5. Were any regulatory enforcement and incentive mechanisms used to support BP&T application?**
  - (1) Soft loans for private developers provided by India Renewable Energy Development Agency (IREDA) and Ministry of New and Renewable Energy Resources (MNRE).
  - (2) Subsidies to private developers for micro, mini and small hydel projects
  - (3) For major projects power a small portion of energy with rider is given to the host state.

### Section II. CONTEXT FOR BP&T IMPLEMENTATION

- 6. What were the major socio-economic or political constraints for BP&T application?**
  - (1) Environmental and social constraints (Environmental activist and social groups opposing the large dams)
  - (2) Absence of international cooperation agreements
  - (3) Technological constraints
- 7. What barriers did BP&T face? Who opposed BP&T use?**
  - (1) Lack of consensus amongst stakeholders
  - (2) NGOs, i.e. Krishak Mukti Sangram Samiti (KMSS), All Assam Students Union (AASU) and other social activists
- 8. How were barriers overcome?**
  - (1) Through dialog and negotiations

- (2) Confidence building measures, i.e. public hearings  
**9. What opportunities and drivers for BP&T application existed?**

Opportunities:

- (1) High water resources availability.  
 (2) Conducive topography

Drivers:

- (1) High power demand and cost effective production.  
 (2) Large and cheap labor force

**10. Who supported the use of BP&T? Did they take advantage of them?**

- (1) Government agencies  
 (2) People at large within and beyond NER

### Section III. PERFORMANCE and EFFECTIVENESS

- 11. What was the degree of success, or failure in BP&T application in the river basin?**  
 (1) 80% successful implementation, no major failure  
**12. What were the major reasons for success, or failure?**  
 (1) Sufficient monsoon rainfall  
 (2) Well planning  
**13. Did application of BP&T result in further development of capacity (regulatory, administrative, human, etc.) for adaptive water governance in river basins?**  
 (1) Yes on trial and error base  
**14. Did application of BP&T result in changes towards more adaptive behavior of stakeholders?**  
 (1) Stakeholder became more conscious and were able to apply measures  
**15. Did application of BP&T contribute (and to what possible extent) to problem-solving, or its mitigation)?**  
 (1) Problem of power supply considerably improved

#### Example: Flood control and river bank erosion

### Section I. BP&T APPLIED

- 1. What exactly was the best practice or tool?**  
 (1) As a localized measure on ad hoc basis.  
**2. With what purpose and reason of its application?**  
Purpose:  
 (1) Flood moderation and localized erosion protection  
Reasons:  
 (1) Loss of lives, farmland and other assets  
**3. How was the best practice or tool applied?**  
 (1) Use of porcupines and flood dykes for training and damming the river  
 (2) River bank pitching and spurs  
**4. Who applied it (i.e. authorities, water-users, civil society, international agencies), and what stakeholders were involved?**  
 (1) Department of Water Resources of the NE states and Brahmaputra Board (in Assam)  
 (2) District Rural Development Agencies (DRDA) promoted by the State Governments  
 (3) Panchayati Raj Institutions (PRI)  
**5. Were any regulatory enforcement and incentive mechanisms used to support BP&T application?**  
 (1) Deputy Commissioners of districts of the NE states  
 (2) District Development Committee (DDC)  
 (3) Block Development Officers

### Section II. CONTEXT FOR BP&T IMPLEMENTATION

- 6. What were the major socio-economic or political constraints for BP&T application?**  
 (1) Lack of interstate and international consensus and agreements  
**7. What barriers did BP&T face? Who opposed BP&T use?**  
 (1) Absence of an apex river basin authority  
**8. How were barriers overcome?**  
 (1) Yet to overcome  
**9. What opportunities and drivers for BP&T application existed?**  
 Opportunities:

- (1) Initiatives at grass root level and expert evaluations

Drivers:

- (1) Government policy and public opinion
- (2) Results from pilot studies and R&D

**10. Who supported the use of BP&T? Did they take advantage of them?**

- (1) International funding agencies and donors, viz., ADB, WB and EC
- (2) Interest on loans with ADB and WB

<b>Section III. PERFORMANCE and EFFECTIVENESS</b>
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**11. What was the degree of success, or failure in BP&T application in the river basin?**

- (1) Approximately 50% of the flood prone area has been given reasonable protection
- (2) Occasional failures of embankments due to shifting river stretches

**12. What were the major reasons for success, or failure?**

Success:

- (1) Proper design and model tested of river training structures
- (2) Adequate funding available

Failure:

- (1) Lack of required maintenance
- (2) Lack of using proper technology
- (3) Lack of availability of funds based on ground reality

**13. Did application of BP&T result in further development of capacity (regulatory, administrative, human, etc.) for adaptive water governance in river basins?**

- (1) Successfully implemented structures contributed to build up of experience in the departments implementing similar measures.
- (2) No impact on governance in river basins

**14. Did application of BP&T result in changes towards more adaptive behavior of stakeholders?**

- (1) Yes, i.e. by self-organized ad hoc repairs and maintenance

**15. Did application of BP&T contribute (and to what possible extent) to problem-solving, or its mitigation)?**

- (1) 50% of the flood prone area has been given reasonable protection

## SOUTH EAST ASIA: BP&T Summary Table (form 2)

### BP&T: Summary Table from Expert Groups SEA

BP&T Examples	BP&T Applied				Context		Performance	
	Major purpose	What is done	Actors involved	Incentives/Enforcement	Barriers/Constraints	Opportunities/Drivers	Success Stories	Problems encountered
<b>Foci 1: Application of national water frameworks in river basins</b>								
<b>1. Irrigated agriculture (Assam)</b>	Ensuring irrigation water supply	Tapping shallow groundwater with tube wells and pumps in Assam	State authority, international agencies, water-users and farmer associations	Rules and regulations incorporated in the central and state government schemes	Conflicts between big and small land holders	High ground water table due to high recharge rates	Around 27 % of irrigated land is supported by groundwater and surface water	Improper planning and inadequate engineering analyses
<b>2. Safe drinking water (Assam)</b>	Establish safe drinking water supply	Management practices and technological interventions	Public Health Engineering Department of the NER states Municipal Board	Statutory rules and regulations	Vested interest from private suppliers	Available infrastructures in PHE and State Pollution Control Boards of NER	80% success in rural areas, awareness raising concerning water quality	Political will is low, bureaucracy and routing of funds is not transparent
<b>3. River Basin Organization (Vietnam)</b>	Enhancement of IWRM in river basin	Law on Water Resources announced  Decree on River Basin Management (Decree 120/2008) issued	Gov. agencies, Provincial agencies, RBOs, Local communities, Donor community	By Legal framework	Power and interest sharing, Lack of human and financial resources	Degrading water resources of river basins in country  Donors' support  Water demand increasing  IWRM tool box of GWP introduced and disseminated	New Decree on River Basin management issued  Some RBOs established	Real power needs to be assigned for RBOs  Appropriate institutional arrangement for RBOs should be placed
<b>4. Participatory water allocation at Bangpakong and Prachinburi River basin (Thailand)</b>	Sustainable water use in Bangpakong and Prachinburi River	Set up Data Center for water resource management at	River Basin Committee  Water users	Local administration rules and regulations  Coordination and	Lack of public awareness on this issue.	Duty and responsibility of the River Basin Committee according to PM's decree	Water group strengthening and more data - info for decision	insufficient budget and support from government  less corporation

	basin  Conflict management  Multi-Stakeholder processes	basin level  Technical Training  Public relation  Water user registration cooperation with local administration organization	Civil society  Local administration organization  International agencies	corporations among different agencies/stakeholders	different information systems, low integration  lack of technical knowledge at local and basin level	Problems identified by local stakeholders in the sub-basin such as drought etc.  Expectation of societies to share power and take the leading role in water mgt.	making  Enhancing capacity of stakeholders by sharing knowledge and also water scenarios.	between local organizations  No participatory processes among water users in upstream medium and downstream
<b>5. Climate change monitoring and adaptation through efficient information flow, central and western Nepal</b>	Availability of hydro-climatic information in an efficient manner	Development of web-based and SMS-based real time data acquisition and dissemination system	DHM, DANIDA, World Bank, IWM Bangladesh, RIMES, Bangkok.	Water Resources Strategy, National Water Plan and Disaster Management Strategy	Financial constrains, Limited expertise and energy crisis	Access to quality data and decision support system  Drivers: Disaster management, Climate change adaptation and disaster mitigation	Successful implementation in some basins with advancement in hydro-meteorological services	Non-availability of appropriate floodplain maps
<b>6. Kosi Rriver Basin Management Strategy (Nepal)</b>	To ensure conservation of resources and protection of the environment	Preparation of Kosi River Basin Management Strategy Plan and implementation	Water and Energy Commission Secretariat of the government of Nepal (WECS) WWF	conceptualization of IWRM in Nepal initiated with the participation in the "Network of Asian River Basin Organizations (NARBO)" training in Sri Lanka in April 2005	integration of all crosscutting sectors	River Basin is of high importance and adequate management of water resources is needed urgently	Kosi River Basin Management Program as first field piloting of the National Water Plan 2005	Problems have been solved due to meetings and discussions and good monitoring of projects implementation
<b>Foci 2: Engagement and coordination among actors, forms of interaction/partnerships</b>								
<b>1. Flood control and river bank erosion (Assam)</b>	Flood moderation and localized erosion protection	Use of porcupines and flood dykes for training and damming the river River bank pitching and spurs	Department of Water Resources of the NE states and Brahmaputra Board ( in Assam) District Rural Development Agencies	Deputy Commissioners of districts of the NE states District Development Committee (DDC)  Block Development Officers	Lack of interstate and international consensus and agreements  Absence of an apex river basin authority	Initiatives at grass root level and expert evaluations  Government policy and public opinion  Results from pilot studies and R&D	flood prone area has been given reasonable protection	f required nance  Lack of using proper technology  Lack of availability of funds based on ground reality

			(DRDA) promoted by the State Governments Panchayati Raj Institutions (PRI)					
<b>2. Hydropower (Assam)</b>	Improve living standards through generation of employment and income	Giving impulses for industrial development and groundwater exploitation for irrigation	Government of India, private developers	Soft loans for private developers Subsidies to private developers	Lack of consensus amongst stakeholders	Through dialogue and negotiations	80% successful implementation no major failure	Environmental and social constraints regarding dam construction
<b>Foci 3: Enabling learning and building adaptive capacity in water governance</b>								
<b>EXPORT – IMPORT of BP&amp;T</b>								
<b>Projects/Initiatives</b>		<i>From where transplanted</i>		<i>Need for adaptation</i>		<i>Major barriers</i>	<i>External influence and foreign assistance in BPT application</i>	
<b>Flood control and river (Assam)</b>	<b>bank erosion</b>	Data transfer across countries, river basins and stakeholder groups		Not across countries but between states, i.e. Arunachal Pradesh		No barriers	International expert advises were discussed and considered	
<b>Hydropower (Assam)</b>		Data transfer across countries, i.e to Nepal and Bhutan		Construction accounted for local condition		No barriers	No external influences	
<b>Irrigated agriculture (Assam)</b>		Transfer across states and river basins		No adaptation		No barriers	World Bank assistance	
<b>Safe drinking water (Assam)</b>		No transfer at all		No adaptation		No barriers	Awareness about importance of safe drinking water through various print and electronic media	
<b>Participatory water allocation at Bangpakong and Prachinburi River basin (Thailand)</b>		Extending the practices within the sub-basin Extending Water allocation tools and practices into the East Coast River Basin.	Extending across six districts	Adaptation will be:  Formulate clearly conceptual framework and ideas to transfer to the river basin committee Systematic approach on data and information systems  Involvement of the main actors such as local administrations, industrial investors		Less technical support at local level  Sectoral Government System, Different views and policies among government agencies  Different information system and no integration	Political unstable Government policy Regional trade agreement	



# LATIN AMERICA: BP&T inventories by experts (form 1)

**Name of the River Basins: Quarai (Brazil)**

**Name of the Twinning project: Twinlatin**

## Section I. BP&T APPLIED

### **What exactly was the best practice or tool? How was it applied?**

The Cuareim-Quaraí basin is historically forgotten in development plans due to its small area and its low population density. The hydrologic problems of the basin are basically floods, droughts and water pollution, but the limitations to its development are rooted in the vision of both countries, especially in the sixties to eighties of last century, regarding investments in border zones. This attitude resulted in an atmosphere of little or none joint action between both countries. At local level relations are more personal and participatory, which creates dissatisfaction towards central authorities of both countries, basically due to a lack of autonomy of the local population with respect to IWRM.

During implementation of the Twinlatin Project the necessary basis was created for the creation and effective implantation of a local basin management organism on the Brazilian margin. This organism called Comitê de Gerenciamento das Águas Estaduais da Bacia Hidrográfica do rio Quaraí saw its implantation rapidly effectuated by using the Twinlatin studies that awoke the population and induced an effective participation, since the necessary conditions for discussion and solution analysis were present.

With less than two years of implementation the Comitê Quaraí developed its own management plan for the Brazilian margin, without any budget or public funding. The elaboration of the plan counted on participation of Brazilians and Uruguayans for the establishment of basic premises and planning scenarios. The expenses for the elaboration of the plan and the discussion workshops with the population were borne by the irrigators, being the main users of water in the basin.

### **What was the reason and objective of its application?**

The formation of the committee had as purpose the creation of a really participatory structure for discussion and water resource management, to substitute or to be added to a non effective and inefficient local representation structure in a Coordination Commission of a Bi-national Agreement, but whose representative lives far away from the basin. The committee allows effective participation of the representatives of the water users and the population, facilitating the discussions of themes of real interest at local level and the start of selected solutions.

The elaboration of the management plan of the basin had the purpose of amplifying the decision power of the local population and to put into discussion the viability of an autonomous management for the basin, explicit wish expressed by the population during the organised workshops. The idea is that the existence of a complete management for the basin will reduce the possibilities of central control, because the plan is one of the tools established by the law on water resources in Brazil and since 2009 also in the Law on Water Policy in Uruguay, basic condition to organise the charge for water use and the execution of investments. Furthermore the way it was worked out the plan establishes the scenarios as desired by the local population that turns into responsible for the achievement of these scenarios.

### **Who applied or implemented the practice? What stakeholders were involved in its implementation?**

The Practice was developed by the civil society, under a vague demand by the Stately Department of water resources of Brazil that carried out a workshop to ask that a discussion for the start of the committee would be organised. On the same occasion the Twinlatin team presented the activities realised up to then, highlighting the elaboration and calibration of a hydrologic model specific for the basin, based upon the Model for big basins of the Institute for Hydraulic Research of the Federal University of Rio Grande do Sul (Modelo de Grandes Bacias – MGB, Instituto de Pesquisas Hidráulicas de la Universidad Federal del Rio Grande del Sur (IPH/UFRGS)). At the end of the workshop, it was decided to organise four more workshops in the basin to get the necessary signatures to formalise the Committee, what was done in a two months period. All expenses for the workshop were borne by the water users of the basin.

The IPH/UFRGS was invited to participate in the Basin Committee because of its participation in the Twinlatin project. The involved actors were the participants of the Committee that represented the users (irrigators, cattle growers, public service providers, fishermen), society (university, NGOs, trade unions, civil associations) and some public bodies, such as environmental management entities. The committee has 20 principal representatives and 20 substitutes, 40% of them being water users, 40 % society in general and 20% from public institutions.

The committee organised and carried out the entire application of the IWRM tools, obtaining over two years a management plan for water resources, with evolution scenarios regarding water quality, definition of economic water value and rates for use, programming of necessary actions to assign water in an appropriate manner and to implement the adaptive water management facing climate change.

**Were any regulatory enforcement and incentive mechanisms used to support BP&T application?**

No mechanism or incentive was used. The motivation of the participants of the Committee was the possibility of building an autonomous management for the basin. But the favourable expressions of the director of the Department of Water Resources and the attitude adopted by the National Water Agency to consult the Committee about new water use concessions was important to consider the Committee as an effective component of the management system for water resources.

**Section II. CONTEXT FOR BP&T IMPLEMENTATION**

**What were the major socio-economic or political constraints for BP&T application?**

The major political barriers for the creation of the committee were the difference in decision and action velocity between the Committee and the federal and stately organisms. The publication of the creation decree of the committee needed six months, when the entire formation process needed only two. For the formulation of the plan in an autonomous and endogenous way the barriers were related to the independence of the Committee for elaborating its own plan, since for all other basins this plan counted on a consultancy contract. The elaboration of the plan was to be stopped to respond to demands from public institutions regarding this process.

**What were the major barriers rooted in the design of the governance system? Who opposed BP&T use?**

Brazilian water resource legislation establishes different water domains. There are federal and stately rivers. The tributaries of the Quaraí River of the Brazilian margin are stately. The main riverbed is of the Union or Central Government, with management in hands of the National Agency and of federal management Committees, which creates an important restriction due to the distance from Brasilia to the basin and to the lack of commercial flights.

Another important barrier is the very slow implantation of the management system of water resources of Brazil that plans the creation of agencies of hydrographical basins to organise the charge for water use, to support technically the federal committees and to realise the necessary investments with funding by the charged rates. Three of these created agencies already exist in Brazil, or with similar organisms, but in rivers of major importance. Creation of an organism exclusively for the Quaraí River is not viable, what should wait for the creation of an agency for the Uruguay River, with an additional difficulty because Argentina should be introduced in the process of water resource management. The inexistence of the agency in the basin complicates the charging of the rate and the execution of investments or, in other words, will affect the plan negatively.

**How were barriers overcome?**

The Committee decided to work with the basin as a planning unit in those themes requiring this condition, independently from its legal competence in these matters. This was well accepted by the technicians of the ANA, but there is no formal acknowledgement of this situation. Nor does the plan respect the institutional limits, treating themes that are competence of the Union. On the other hand, the Committee solicited recognition as a Federal Committee in order to be able to realise and discuss the assignment processes in the main riverbed.

Regarding charging the strategy for investments is using the rate charged to irrigation associations of cattle growers, public provider companies or municipal intendancies, but always according to the plan.

**What opportunities and drivers for BP&T application existed?**

The opportunity was the demand by the Water Resources Department at the same moment of the development of the Twinlatin Project. An important driving force in the final version of the plan was the expectation of the La Niña phenomenon that year, with the corresponding reduction of rainfall during the rice growing season.

**Who supported the use of BP&T? Did they benefit from them?**

The external support to the Committee for application of this practice was reduced to favourable expressions and requests for inclusion of certain themes of interest in the plan, such as climate variability. On the other hand everybody benefitted from the creation of the Committee, for an agent for IWRM was created in the basin at very short notice, and for the elaboration of the plan that established a direction of the actions, with identification of the sources of resources, responsibilities and desired products. The federal and stately governments benefitted by not being forced to invest in the elaboration of the plan.

In reality the Committee was the most benefitted part, by demonstrating its technical, organisation and discussion capacity towards the local population to define planning scenarios, called “the river we have”, “the river we want” and “the river we can”, for the 2015, 2020 and 2030 horizons.

### **Section III. PERFORMANCE and EFFECTIVENESS**

**What was the degree of success, or failure in BP&T application in the river basin? What were the major reasons for success, or failure?**

The level of success of the formulation of the plan is very high. The Committee’s experience is unique in Brazil and is quoted as an example of decision and autonomous capacity. Until February 2011, when the first composition of the Committee is closed after two years of activities, the basin will have all management tools analysed and prepared for discussion or implementation, with contributions of the most varied sectors of local society, including Uruguayans.

Expectation is also high, but the risks of failure are high. The obtaining of plain and shared management of the basin depends on decisions by the Ministries of Foreign Affairs, always very slow in procedures, analysis and approval of changes in bi-national agreements. A fundamental change is the recognition of the Committee as a management agent of the main riverbed under the form of a Federal Committee.

**Did application of BP&T result in further development of capacity (regulatory, administrative, human, etc.) for adaptive water governance in river basins?**

The progress of the management capacity of the basin is visible. The Committee discusses all themes related to IWRM. The ordinary meetings have always the necessary quorum and proposition attitudes. The users adopt proactive attitudes, such as self-auditing of the removed flow from the riverbeds, discussion about new users, proposals for impact studies of infrastructure works in the basin, modelling of climate change effects on short or medium term, among others. The executive secretary is active and keeps a communication structure between all members which allows decision making, document revision and discussion on very short term.

The adoption of participatory tools for the definition of planning scenarios resulted in a qualified participation of the population in the Committee’s initiatives.

**Did application of BP&T result in changes towards more adaptive behavior of stakeholders?**

Yes, the participatory methodologies, the position of the Committee as a preferential place for conflict solving and the use of hydrological modelling defining scenarios allowed actors to define easily strategies for starting solutions and actions and even to react to governmental decisions. The possibility of climate simulation over terms superior to the irrigation season allows the implantation of strategies for reduction of water consumption.

**Did application of BP&T contribute (and to what possible extent) to problem-solving, or its mitigation)?**

The creation of the Committee solved entirely the inexistence of a participatory management organism in the basin. The elaboration of the plan in an autonomous way solved the necessity for this tool as well as for the other two (charging of rates and classification of water bodies in quality classes), and allowed also the participation of the Committee members in the entire process.

### **Section IV. Export-import of the BP&T between countries or basins**

**Examples of BP&T transferred between countries/basins**

From the execution of the Twinlatin project there was a comparison of practices between the two countries. From Uruguay the existence of a register of water using rights and land use was important for the conception of the model of Hydrological management. From Brazil, the citizen participation in the discussion of actions in the basin should be used in the evolution of IWRM in Uruguay.

**Was adaptation of the BP&T to the local context necessary in order to make the transfer possible/successful?**

The adoption of flow registers in the intake works in Brazil was done by a campaign and there is no constant registration, which is still to be organised. Before, there was the organisation of a yearly census of irrigators, but this was left behind almost 20 years ago. Today, this register can be organised by the basin Committee till the water resource management system is completely implanted, with the creation of the basin agencies.

The organisation of committees in Uruguay needs a legal regulation to substitute the irrigation boards.

**What were/are the main barriers and opportunities for transfer & adaptation of the BP&T?**

The inexistence of a basin management organism on Brazilian side, the lack of an actualised law, including IWRM principles on Uruguayan side. IWRM in the basin still needs a revision of the bi-national agreement.

**What were the “external” influences in the implementation of the BP&T?**

The implementation of the presented practices (formation of the Committee and elaboration of a basin plan) has positive influences on the National Water Agency that supported the discussion of the processes of concessions of water in the main riverbed and presented the Hydrological management model to the DNH of Uruguay. There were also positive influences of the Water Resource Department of Rio Grande Do Sul that

was interested in the implantation of the Committee and the elaboration of the plan, even without funding. Negative influences of the actual model of bi-national management will exist while they didn't approve the Committee's initiatives and retarded the discussion of changing the bi-national agreement.

**Name of the River Basins: Cuareim-Quarai (Uruguay-Brazil)**

**Name of the Twinning project: Twinlatin**

### Section I. BP&T APPLIED

**What exactly was the best practice or tool? How was it applied?**

The best practice consisted in considering the entire basin as a working unit for the different studies carried out during the project; starting from a common geo-referenced database, sharing the entire historical series of hydro-meteorological data, and the generation of a distributed hydrological -hydraulic model of the basin for its management (concession of water rights) as well as for the evaluation of scenarios of possible infrastructure works and climate change.

**What was the reason and objective of its application?**

Historically, before the Twinlatin project, Brazil as well as Uruguay worked from a unilateral viewpoint, even up to the point that several collected studies showed exclusively the basin areas of the country where the study was done. The first step to reach consensus for both countries in the management (distribution and conservation of resources) is starting from the information and data that would be accepted by both countries. Having to agree upon a unique management model for the basin is essential for an equilibrated management of the resources.

**Who applied or implemented the practice? What stakeholders were involved in its implementation?**

The partners in the Twinlatin project from Uruguay were the National Direction of Hydrography and for Brazil the Institute for Hydraulic research of the University of Rio Grande do Sul. So the partners during the Twinlatin project were the water authority of Uruguay and for Brazil the University. Nevertheless at the Brazilian side the realised development was transferred to the ANA, the National Water Agency who implemented the tool. On the Uruguayan side the management model is still not in use.

**Were any regulatory enforcement and incentive mechanisms used to support BP&T application?**

In Brazil the application of the tool was necessary for the formation of the Committee of Management on the Brazilian side of the Basin, and an important incentive for its use was the enforcement to respond to concerns of the population. Uruguay did not yet implement the tool, but it is also interesting to see the experience generated by Brazil using the tool for management for a couple of years before Uruguay makes a change in the management compared to the rest of the country.

### Section II. CONTEXT FOR BP&T IMPLEMENTATION

**What were the major socio-economic or political constraints for BP&T application?**

The bi-national institutionalism the Commission on the Cuareim River (CRC) within the Ministries of Foreign Affairs, created from before the Twinlatin Project (1991) did not work out, the members are not meeting.

**What were the major barriers rooted in the design of the governance system? Who opposed BP&T use?**

Important resistance for the application of the basin management model on behalf of the Mixed Commission of the Cuareim River, because this implies modification of clauses of the Bi-national Cooperation agreement, which needs diplomatic negotiations. Maintain the Agreement as such prohibits the correct assignation of water by the ANA.

It is complicated because of the fact that Brazil the shared River domain is federal, with headquarters in Brasilia at 3000 km from the basin, while the tributaries are state domain. So, in the actual situation, the tool should be applied by two different actors on the Brazilian side (DRH, state authority) and ANA (federal authority) and by DINASA in Uruguay. Neither on Brazilian side there was any institution in the basin. In Uruguay on the contrary the Cuareim River and its tributaries are national domain and the water authority has a regional dependency in the basin and there is also an advising irrigation board that supports the water management.

- That the information is not of public domain in Uruguay was a barrier since long ago. In Uruguay the Law on Water Politics was approved in 2009 including public access to information.
- On the Brazilian margin difficulties were the different data bases needed for the model, such as irrigation areas, flows at intake works and backflows, reservoir dimensions, number of cattle, among others whose registers were not reliable or actualised.
- Another difficulty was the different classification between both countries of soil elements, water quality and geology that required the creation of a new common database.

There was no resistance from the management organisms to apply the tool on the Brazilian margin because there was no other valid option to define flows in the different points of the basin and to analyse the effects of intake works located in the basin. In Uruguay the National Hydrographical Direction decided for the moment to keep the existent hydrological management system while Brazil experiments with the tool.

**How were barriers overcome?**

During the Twinlatin Project the stately basin committee was established on the Brazilian side, which is an important step to interact with the Uruguayan institutions. This Committee has direct dialogue with the ANA for all themes of IWRM and makes requests to the CRC. The effective and local actuation of the Committee is what allows overcoming partially the barriers. A total solution requires a more effective articulation with the CRC.

**What opportunities and drivers for BP&T application existed?**

The ineffectivity of the CRC was one of the driving forces for the creation of the Committee on the Brazilian Margin. Now the Committee asks from the CRC the application of the management tool for the basin management.

Between other exploited opportunities there was the creation of the committee that allowed the correction and complementation of data and information used in the model and the implementation of the plan what allowed a direct use of the model and the discussions of results by members of the Committee. The acknowledged level of the University by the water authority in Brazil allowed that they adopted the results of the studies of the Twinlatin Project. Furthermore they benefitted from the fact that one of the technicians of the project went to the ANA.

**Who supported the use of BP&T? Did they benefit from them?**

The national water agenda in Brazil supported the use of the Good Practice adopting the generated tool - the MGB model - to grant water concessions. The IPH benefitted from having an opportunity to apply the model in a real management situation. The Water Resource Department of the state benefitted from having information that was previously unavailable. The water users in the basin can solicit simulations of water management. Also the DINASA in Uruguay benefitted from the existence of a management model that can be considered for implementation.

**Section III. PERFORMANCE and EFFECTIVENESS**

**What was the degree of success, or failure in BP&T application in the river basin? What were the major reasons for success, or failure?**

One of the initial barriers was that the partners of both countries were not really “pairs” in the sense that they were not two water authorities or two universities so the objectives of each of them were different in nature. A management model was generated, but the Brazilian Water Agency was not directly involved in the project.

The level of success/failure is considered medium, while on the one hand Uruguay considers the generated database and the quality of the model as valid, but until no joint evaluation is made of the application of the model for the water management, Uruguay won't change its way of water management in the basin, as it is doing for many years. Uruguay uses a simple tool with obvious limitations, but it works.

Another restriction is that in Uruguay the information is not publicly available, not so in Brazil. Another problem is that no shared mechanism for database management and maintenance was implemented once the project finalised.

**Did application of BP&T result in further development of capacity (regulatory, administrative, human, etc.) for adaptive water governance in river basins?**

Without any doubt, on Brazilian side there was a notorious advance, while before the project there were neither water rights concessions nor a complete register of the uses of the resource. It is also important for Uruguay and for a future bi-national management that Brazil strengthened considerably the basin management because an important step for a bi-national management is that can be started from a good institutionalism in each involved country. So making managements of both countries compatible is still to be done.

**Did application of BP&T result in changes towards more adaptive behavior of stakeholders?**

In Brazil the tool is used for the evaluation of scenarios and hereupon a plan was created for the Brazilian side of the basin. A bi-national activity is planned for next year to share the plan.

**Did application of BP&T contribute (and to what possible extent) to problem-solving, or its mitigation)?**

The tool (the management model) was an important advance. The joint project finalised at the end of 2008, but the bases for a joint management were improved with actions at the Brazilian side. In the following months there will be a meeting of the DINASA (the institution that inherited the competences of the National Direction of Hydrography) with the Brazilian National Water Agency to see how to proceed with the basin management and it includes specifically the evaluation of the experience of the model by Brazil since the finalisation of Twinlatin till now.

#### Section IV. Export-import of the BP&T between countries or basins

##### **Examples of BP&T transferred between countries/basins**

There is a transference process of the management tool and this transference will be mutual (Brazil-Uruguay and Uruguay-Brazil) but in different aspects, each one putting its strengths and experience. Particularly Brazil has the development of the tool and Uruguay has the experience of years of basin management.

##### **Was adaptation of the BP&T to the local context necessary in order to make the transfer possible/successful?**

The MGD Model was adopted for the basin during the Twinlatin Project and is still improved with inputs from the committee on stately waters of Brazil.

##### **What were/are the main barriers and opportunities for transfer & adaptation of the BP&T?**

The main barrier is that it has to be adopted by different actors, one for Uruguay and two for Brazil while the basin is partly of federal water domain and for another part of stately water domain.

##### **What were the “external” influences in the implementation of the BP&T?**

The increase of the pressures for the use of the water resource makes it necessary to optimise its use, for which it is necessary to incorporate tools and information that allow carried out the analysis.

Name of the River Basins: Biobio (Chile)

Name of the Twinning project: Twinbas

##### Example 1. Biobio monitoring programme (PMBB)

#### Section I. BP&T APPLIED

##### **What exactly was the best practice or tool? How was it applied?**

The PMBB is a permanent system that measures physical, chemical and microbiological water quality of the Biobio River and its main effluents. It started in 1990 and it is still operative. It consists of 13 monitoring stations. The EULA-Chile centre is in charge of measurement and communication of results and receives funding from the 10 industrial water users extracting water from the Biobio River Basin.

##### **What was the reason and objective of its application?**

This initiative came up due to the bad water quality detected in the Biobio River mouth in the eighties, especially with respect to water consumption in the lower part of the basin. Subsequently research was done to identify the components and microorganisms that produced this spoilage and their sources. So this action has the implicit purpose to reduce the concentration of pollutants from industrial discharge, in a specific way.

##### **Who applied or implemented the practice? What stakeholders were involved in its implementation?**

The EULA-Chile centre is in charge of the PMBB design. It is a public institution, with academic purposes. They identified the adequate sampling sites for a proper representation of the biophysical characteristics of the different parts and activities of the Biobio Basin, the periodicity of sampling to reflect the hydrological dynamics of the system and the main parameters to be evaluated.

In order to put into practice the monitoring system, the first years (1990-1994) it received funding support from Italy, but from 1994 the main private users coordinate for financing and as being part of the solution of the potential problems. Furthermore, the regional public institution (DGA Biobio) is integrated as coordinating body of the initiative.

##### **Were any regulatory enforcement and incentive mechanisms used to support BP&T application?**

Initially the implementation of this initiative was a result of international cooperation but reached further financial auto-sustainability. In this way there are no incentives or national mechanisms for PMBB implementation, but there is international support.

At the same time the private water users involved in this initiative were passing through a green certification process for their activities and products to reinforce global economic opening, so this acted as an incentive from the international markets to improve efficient water use, and the reduction of pollutants in their discharges.

#### Section II. CONTEXT FOR BP&T IMPLEMENTATION

##### **What were the major socio-economic or political constraints for BP&T application?**

The principal barrier for implementation of the PMBB was the social-environmental context in Chile at the start of the nineties. First of all there was no existing quality standard neither for secondary water nor for discharges, on the contrary were the standards characterised by a sector approach and based on the destiny of water use: drinking water and irrigation water. For this reason there was no binding document that forced private users to reduce concentrations of pollutant components. As a consequence of the aforementioned and as a second

barrier these users didn't show any will for reducing pollutant discharges nor for financing a water quality monitoring programme for the system into which they discharged their outflows. The third element acting as a barrier for the PMBB implementation was a technical one. Equipment and trained personnel were needed for the determination of agro-chemical compounds such as fertilizers and pesticides, which are difficult to detect or are present in a concentrations under detection threshold of the equipment available at the start of the PMBB.

**What were the major barriers rooted in the design of the governance system? Who opposed BP&T use?**

The barrier rooted in the environmental management system during design and the first years of implementation of the PMBB was transparency (full-disclosure) of the information. Once the private users considered being part of the program and negotiating their participation they were reluctant of making the generated information publicly available, transparent and open to the community living in the basin.

**How were barriers overcome?**

To overcome the aforementioned barriers different scales of environmental management were integrated: global, national and local.

At global scale the international market showed an inflection point favouring and incentivising industrial certifications at the start of the nineties. This international context is of special relevance for Chile, due to the fact that a great deal of its economy is based on economic opening and export of resources. In the Biobio River basin different cellulose, forestry and fishing industries are located, whose main selling market is international. For this reason the demand for "green" products or "environmentally friendly" generated a change in conduct on behalf of the private industrial water users who aimed at the international market.

At national level the return to democracy in the nineties implied, apart from social and human claims also a more environmentally friendly discourse and commitments. This was translated into the definition of the Law on Environmental Bases (Las 19.300) and the creation of a public body in charge, as well as the definition of emission standards in different environmental sectors. This social and political context strengthens the change of behaviour of the private water users, but not only to access international markets anymore but also to comply with national standards in the process of design and implementation. At the same moment, the Chilean environmental authorities are aware of the importance of generation of knowledge for information based and accurate decision-making, so the PMBB becomes a tool for decision-making and the design of new tools.

At local scale the executing PMBB organism keeps receiving international funding to improve the existing tools and at the same moment train researchers in advanced technology for measurement of program parameters. But furthermore since the previous decade the academic world and some key actors from public institutions with competences regarding water management pretended to create a basin management body in the Biobio Basin, characterised by being multi sector and multi actor based. For this reasons the PMBB is an informal technical body that tries to integrate several actors, from different sectors.

Although the principal barriers were significantly overcome the problem of transparency and availability of data obtained by the PMBB still persists. It is to be mentioned that progress was made, since from 2004 data can be used exclusively for scientific purposes, but there is the intention to advance towards complete access for all water users and inhabitants of the Biobio River Basin.

**What opportunities and drivers for BP&T application existed?**

The opportunity favouring the PMBB implementation was the green economy favouring a behavioural change of the private users and the empowerment of democratisation of the political regime that allowed visualising and discussing the environmental theme and related problems such as water contamination in the Biobio river mouth.

**Who supported the use of BP&T? Did they benefit from them?**

The principal supporting actor for design and implementation of the PMBB was the EULA-Chile centre. The beneficiaries of this program were the same private water users, the public organism in charge of management of water use and society living in the basin, especial those living in the medium and lower parts.

**Section III. PERFORMANCE and EFFECTIVENESS**

**What was the degree of success, or failure in BP&T application in the river basin? What were the major reasons for success, or failure?**

The level of success on a 1 to 7 scale is 6, since thanks to the permanent application of the PMBB based upon biophysical as well as hydrological characteristics of the basin and the riverbed it was possible to improve water quality in certain river sections. For instance the river mouth was at the start of the application of very bad quality, actually it varies between regular and bad quality, but due to natural factors and diffuse contamination, which means that point sources are reduced substantially. It should be reminded that these results are obtained by means of physical, chemical and microbiological parameters. Bio-indicators and bio-markers are still to be assessed and integrated. These indicators are a measure of the exposure of bio-organisms to the mix

of pollutants, that could be synergetic or some derivatives could be more toxic and persistent than the precursors.

The integration of actors and the definition of a common purpose are of vital importance for the implementation and follow up of the PMBB. Nevertheless the financial commitment by the private water users is also of vital importance for sustainability of this initiative.

**Did application of BP&T result in further development of capacity (regulatory, administrative, human, etc.) for adaptive water governance in river basins?**

The PMBB contributes to the following elements of adaptive governance of the basin:

- .- It improves the decision making regarding water quality and contamination but only for point sources.
- .- In the creation of the secondary standard (still in process) for water quality for the Biobio River Basin.
- .- Demonstrating that coordination initiatives between diverse actors have sustainability, especially referred to private users.

**Did application of BP&T result in changes towards more adaptive behavior of stakeholders?**

Recently at this moment we can indicate that the actors participating in the PMBB are transforming themselves into “sociocrates” (mobilisers of adaptive governance). It is possible to identify certain characteristics that are being appropriated by different actors, such as credibility between actors from different sectors, the dialogue between them (even if it is necessary to include more actors from the basin) and most of all the improvement of the knowledge about the water quality of this hydrologic system.

**Did application of BP&T contribute (and to what possible extent) to problem-solving, or its mitigation)?**

The problem for which this programme was designed and implemented was the water pollution in the lower part of the basin and, as mentioned before, it tries to solve point pollution problems. In this sense this initiative achieves the solution of the planned purpose, although it does not resolve the entire environmental problem from which the population in the Biobio basin suffers and the results are still to be integrated with possible impacts of climate change on the hydrological regime of the Biobio Basin.

**Name of the River Basins: Biobio (Chile)**

**Name of the Twinning project: Twinbas**

### *Example 2*

#### ***Capacity-building for the association of irrigation canal operators of the Biobio-Negrete canal***

<b>Section I. BP&amp;T APPLIED</b>
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**What exactly was the best practice or tool? How was it applied?**

The project for strengthening local capacities within the Association of Channelists of the Biobio Negrete Channel (Asociación de Canalistas del Canal Biobío Negrete - ACCBBN) is an initiative financed by a public service from the Agricultural Ministry, namely the National Irrigation Commission (Comisión Nacional de Riego – CNR). It emerges as a necessity expressed by the organizations entitled to water use as established in the National Water Code, the Association of channelists of three municipalities forming part of the Biobío River Basin. The ACCBBN tries to make an institutional and environmental diagnostic about the existing failures in its management due to lacking local capacities and to improve the participation of more actors than just those having irrigation water use rights. Among the most remarkable results of the diagnostic process we can mention the deficiencies in productive management, since agriculture produces negative impacts on the environment and this produces negative impacts on the agricultural production, such as discharge of liquid waste at the banks of river and irrigation channels.

**What was the reason and objective of its application?**

Most of the landowners with irrigation rights are small, elderly farmers (average age of associates is 52 years old), and have a local market that does not allow them to improve profitability. Furthermore in the municipalities where they operate, a dynamic land use change process was the case, from agricultural to forestry use, which induced among other effects changes in hydrological regime of natural riverbeds that provide the intakes of irrigation works and this also induces a major migration of labour forces towards the city.

The purpose of this project is to strengthen local capacities, design a management system that reflects territorial dynamics of the association and that allows coordination between different levels, as well as revalorising irrigation as a development promoter of the area where the association operates, through gender focused participation.

**Who applied or implemented the practice? What stakeholders were involved in its implementation?**

This project was applied jointly with by the ACCBBN, the CNR, the involved municipalities and technical scientific advisors for management, empowerment and production items. Furthermore technical support was requested to the EULA-Chile Centre of the University of Concepción with respect to water quality. In the first



phase a production and environmental diagnostic was carried out. This diagnostic allowed the identification of the main problems related to both themes and to define actions that could contribute to a solution of the prioritised problems. Subsequently, the association came in charge of the internal design of the management system. In this phase the local government played a determinant role as the promoter of public participation by means of the creation of neighbourhood boards and unions of neighbourhood boards, because it was noted that leading actors in this spaces were also active in the different spaces of the ACCBBN. For this reason these are leaders that transmit common themes in different participation environments and to the different actors present. For instance the water quality and the solid waste disposal, so more participants are included in the decision-making for common themes.

**Were any regulatory enforcement and incentive mechanisms used to support BP&T application?**

No enforcing mechanisms were present for the design and implementation of this project.

## Section II. CONTEXT FOR BP&T IMPLEMENTATION

**What were the major socio-economic or political constraints for BP&T application?**

At local scale the principal barriers that restricted the implementation of this practice were initially the reduced funding by the ACCBBN to develop an initiative of this kind by themselves, once the CNR financed and supported technically the association more profound barriers were identified, such as the fact that the average age of the associates is about 55 years, and hereto added an instruction level that does not exceed 8 education years, which impedes an understanding of new technologies. Hereto related existed a loss of credibility of the institutions, public or private.

**What were the major barriers rooted in the design of the governance system? Who opposed BP&T use?**

The main and still persisting barrier is the application of the water code. The essence of the water code is the creation of water markets independent from landownership and other resources, but it does not generate the necessary instances and means to make landowners who received water and land during the Agricultural Reform (1970), aware of this element and to allow them to use it and to sell it independently of their land or partially. For this reason their income is not increasing and they dedicate themselves to subsistence agriculture and grassland irrigation for cattle growing for local consumption, which results in little human and financial capital to strengthen the local organization.

Another element that requires more research is the resistance of this organization to reform itself into an instance of interaction of more actors, such as the water roundtables (non-formal spaces that are emerging in different zones in the country).

**How were barriers overcome?**

Initially the financial barriers were overcome thanks to financial support from the CNR for the project development, so external technical advisors could be hired for the diagnosis construction and subsequently the Strategic Plan to strengthen local capacities. As a result of this, leaders were identified, as well as participation spaces where more information could be distributed and where the associates could be empowered, also women associates, elder people and children, regarding decision making with respect to irrigation water quality and the riverbeds providing water to the irrigation channels.

**What opportunities and drivers for BP&T application existed?**

The bad water quality and the resulting reduction of profitability of the crops induced the ACCBBN to strengthen itself based upon a specific problem to solve. The technicians that worked in this process were also of great relevance because they were able to link stronger relationships between the different actors involved in this project. Additionally, this problem also identified links with other sectors of the population. For this reason the problem was the driving force of the project.

**Who supported the use of BP&T? Did they benefit from them?**

All actors mentioned. Beneficiaries were the irrigators.

## Section III. PERFORMANCE and EFFECTIVENESS

**What was the degree of success, or failure in BP&T application in the river basin? What were the major reasons for success, or failure?**

In this sense it is to be mentioned that this initiative is a specific project for a part of the basin, so this does not mean it is a success, it is on the contrary a sign of the huge difficulties to implement practices and tools at basin level, given the conformation of the user's associations as established by Law (water code).

**Did application of BP&T result in further development of capacity (regulatory, administrative, human, etc.) for adaptive water governance in river basins?**

Related to the answer to the previous question, no increasing adaptive capacity at basin level was developed or growing, merely in a part of it where the strengthening of capacities forces the SCCBBN to see opportunities

that incorporate climate change in water management and the creation of a hydroelectric power plant to be considered as an MDL project.

**Did application of BP&T result in changes towards more adaptive behavior of stakeholders?**

Definitely at local level.

**Did application of BP&T contribute (and to what possible extent) to problem-solving, or its mitigation)?**

The water pollution problem has point sources in the higher parts of the basin, not included in this project. For this reason the lack of an integral basin vision does not allow to solve the problem in an adequate way, although specific pollution points in the irrigation channels were reduced.

#### Section IV. Export-import of the BP&T between countries or basins

##### **Examples of BP&T transferred between countries/basins**

Taking into account the reality of the Biobio basin and that one of the elements that we want to strengthen and promote is the interaction of different institutional, private as well as communal actors in a spontaneous way, more than only motivated by legislation, I consider that the most appropriate practices are:

The use of models that allow generating water use scenarios, from land use changes, through effects of hydraulic infrastructure till the effect of the increasing temperature due to climate change.

Alliances for the implementation of basin management organisms with a commitment from the academic world.

Delimitation of the basins in the country.

Restructuration of the institutional scenery for water management, with special emphasis on the definition of competences on different levels of governance, as well as on local governments.

**Was adaptation of the BP&T to the local context necessary in order to make the transfer possible/successful?**

The transfer of any of these initiatives requires without any doubt adaptation to the local context. Nevertheless this is a delicate subject because it is not so easy to adapt to local context because it can result that it does not induce the desired effect and turns into one more initiative that does not favour participation of all actors and that in the worst of cases, deepens even more the lack of credibility and initiatives promoted by public organisms.

**What were/are the main barriers and opportunities for transfer & adaptation of the BP&T?**

The principal barrier is at the same time the main opportunity, especially in terms of the first best practice and tool listed earlier. It consists of all elements of the institutional landscape for water governance in Chile that does not favour the application of integral strategies for water management, which can be resumed in the institutional dispersion, the little decentralisation of management competences (especially at local scale) and the overlap of competences between public institutional actors.

In this sense the application of the best practices and tools here mentioned rise as a result of this barrier and are a support for a better dialogue between actors. Nevertheless, the most complex of all, seen from the actual historic perspective is the fourth, while it requires deeper structural changes in water legislation at national level and a transference of capital to local governments.

**What were the “external” influences in the implementation of the BP&T?**

In the specific case of the initiatives here exposed the external influence, funding of initiatives is of vital support to initiate initiatives and furthermore to generate during this period alliances that allow the generation of mechanisms of financial sustainability.

**Name of the River Basins: Catamayo-Chira (Ecuador-Peru)**

**Name of the Twinning project: Twinlatin**

#### Section I. BP&T APPLIED

**What exactly was the best practice or tool? How was it applied?**

Participatory preparation of a Plan for Land Use Planning, Management and development of the Basin (POMD).

[http://www.catamayochira.org/Biblio/resumen\\_ejecutivo.pdf](http://www.catamayochira.org/Biblio/resumen_ejecutivo.pdf)

The experience starts as an opportunity in 2002 in the framework of the negotiations and the Peace Agreement between Peru and Ecuador. The Spanish Cooperation (AECID) proposes an intervention framework by means of the Project for Land Use Planning, Management and Development in the Bi-national Catamayo-Chira Basin. The formulation of the POMD was one of the strategic lines worked on in the 2003-2008 period.

In this context the Bi-national Catamayo-Chira Project sets as its main objective: To formulate in a participatory way and with gender focus the Plan for Land Use Planning, Management and Development of the trans-border Catamayo-Chira basin. Formulation of this plan implied knowing the situation regarding participation in the basin, which was revealed in the elaborated socio-economic diagnosis.

The POMD was elaborated with a participation strategy, involving different levels of the population, organisations and government institutions in both countries, which implied the collection of existing information, specific studies, information validation, technical spaces for discussion and consultation, and the approval of the political authorities.

To strengthen the participation a starting point was the lack of knowledge of the population about the reality they are living in, for this reason a previous training process was necessary before the formulation of the POMD, with the purpose that participation would not only be representative, but also informed and effective. Four participation levels were detected in which the different actors in the basin were organised: (i) technical level of institutions in each of the national fields (Peru and Ecuador), (ii) technical level of local competent institutions, (iii) organised groups – social and productive ones – and (iv) general population. For each of these levels different information needs and participation forms were defined.

To obtain effective participation of women in the basin in the formulation of the POMD an identification of representatives of women organisations was carried out (social groups, production groups). Their capacities regarding integral water management, leadership, participation, communication, etc were strengthened by means of different workshops, internships, meetings and visits to the upper, medium and lower parts of the basin. Actually these strengthened women leaders are organised in the Bi-national Platform of Women and from this platform and from their organisations they participate in different activities and processes organised in the Basin. The participation of local governments was considered very important, for this reason they were convoked through the municipal mayors and the municipal technical teams, who participated in a process of strengthening with a joint board (municipal commonwealth) focus as promoted by the Bi-national Catamayo-Chira Project.

To give information support to the whole process a massive information campaign was organised, in parallel with the formulation of the POMD, using the local media with major coverage and acceptance in the basin. Jingles and spots were made and broadcasted by radio and television allowing promoting the POMD as a tool and opportunity for the basin.

The POMD proposes the following directives:

- \* Integral Water Resources Management
- \* Natural resources Management
- \* Socioeconomic and productive actions
- \* Institutionalism
- \* Capacity development
- \* Institutional strengthening
- \* Information systems

#### **What was the reason and objective of its application?**

Appropriate water resource management, starting from the actors.

The POMD is the Plan for Land Use Planning, Management and Development of the Bi-national Catamayo-Chira Basin and is one of the main results of the Bi-national Catamayo-Chira project that is developing in the basin of the same name and that is located on the territories of Loja-Ecuador and Piura-Peru.

The main problem is socio-economic and environmental poverty in the basin, added to gender inequity; limited water endowment related to a poor water resource management and degraded ecosystems. On the other hand there is an inter-institutional disarticulation to manage the basin in an integral way, a lack of knowledge of the actors in the basin and no existing participation and representation mechanisms. Participation characterised by instability and a lack of representation of civil society as well as of organisations, due to poor organisation, functional instability and weak management capacities. The social, women, nongovernmental organisations and local governments miss leadership, leading and management capacities.

In this context the necessity for a planning and management tool imposes itself, which in the medium and long term allows a joint, BI-NATIONAL action aiming at the improvement of the quality of life of the population. For this reason the objective of the POMD is to contribute to the improvement of the basin management, in an effective and efficient way, through an integral and bi-national agreed management of the renewable natural resources to improve the life quality of the population and the consolidation of the peace between Ecuador and Peru.

#### **Who applied or implemented the practice? What stakeholders were involved in its implementation?**

Bi-national Catamayo-Chira project took the lead. Running initiatives were incorporated and many actors. Different levels of government and users were involved.

The peace agreement between Ecuador and Peru of 26th of October 1998, consolidated through one of its instruments: the amplified Ecuadorian Peruvian Agreement on Border Integration, Development and Vicinity established among other bilateral documents the Plan for Bi-national Development of the Border Region, with the support and commitment of the Spanish Cooperation Agency (AECID), in March 2001 the execution of the Bi-national Project for Land Use Planning, Management and Development of the Catamayo-Chira river Basin

started. From 2002, after the subscription of the Project document, the Project Management Unity (UNIGECC) was responsible for implementation, control and evaluation of the studies, projects and other activities entrusted to it.

From the beginning of the formulation of the POMD UNIGECC catalysed the participation of pertinent and competent institutions. In this way a diagnosis –first phase- was elaborated with information proportioned by the national institutions as a basis. This information was actualised and homogenised bi-nationally, offering a vision about what to do and revealing the weaknesses and potentialities of the geographical space in question. The directives – second phase- were a document of agreements, agreed upon at local, national and bi-national level, where the logic of technical knowledge, will and decision of the representative institutions was established. Finally, the third phase of this process consisted of the elaboration of the POMD, one of the management tools for land use planning and above all for the twinning and development of those living in the border region, especially the trans-border basin Catamayo-Chira. The elaboration of the POMD required having the technical – institutional knowledge as a basis, as well as the active participation of the inhabitants of the basin, towards whom the benefits of the coordinated and participatory implementation should return.

These are the bases upon which the proposals of the Programmes and Projects of the POMD were founded, a framework delimitating the necessary and harmonious actions to use and preserve the natural renewable resources of the Basin, with special emphasis on water; promote processes and productive chains; strengthen the institutions and capacities of its inhabitants, and finally, translate the aforementioned in an information and communication system that guarantees the transparency and the social participation required in this process.

#### **Were any regulatory enforcement and incentive mechanisms used to support BP&T application?**

The 1998 peace agreements are the framework that impels this kind of initiatives that existed in the civil society (NGOs) and taken in by the International Cooperation (AECID).

In the case of Piura the POMD was adopted recently as a Management Document for the Basin (24/11/10: [http://www.regionpiura.gob.pe/detalle\\_pdf.php?pagina=ord0196\\_2010.pdf](http://www.regionpiura.gob.pe/detalle_pdf.php?pagina=ord0196_2010.pdf)).

In the Ecuadorian case it is on the development agenda of the 7th zone of SENPLADES (Loja, El Oro, Zamora).

The Bi-national Catamayo-Chira Project completed its first phase until 2008, and is now in its second phase between 2009 and 2011, so it is foreseen that it will be incorporated in the Regional Government actions in Piura.

## **Section II. CONTEXT FOR BP&T IMPLEMENTATION**

### **What were the major socio-economic or political constraints for BP&T application?**

- *It was difficult to cover the entire geographical area of the Bi-national Catamayo-Chira basin, this complicated convocation and diffusion actions, as well as obtaining representation of the leaders that had to be present.*
- *There were a lot of difficulties to reach consensus and coordination at bi-national level.*
- *Difficulty to transmit intangible results, whose utility is not immediate for the population, added to the indifference of the communication media regarding environmental themes and the shortage of specialised media.*
- *The time in the formulation phase of the POMD was very limited to elaborate an instrument with gender and participation focuses.*

### **What were the major barriers rooted in the design of the governance system? Who opposed BP&T use?**

The institutional component was not developed, due to a lack of political decision at national level, which implies that now all depends on (small) local steps and willingness, very determined by local agendas.

The POMD considered proposing an institutional bi-national proposal that leads its implementation. The technical bi-national teams worked on this proposal, but there was no support from the Foreign Affairs Ministry (Peru).

### **How were barriers overcome?**

Socialising, many meetings, involving a lot of actors ... The Plan is now relatively well publicised, it is known by all.

- The social productive basis was identified for the formulation of the POMD.
- The formalization of organisations such as the Bi-national Platform of Women, Bi-national Association of Development Impulsion Groups (ABINGIDEL) was achieved and promotion and conformation of two joint municipal boards (mancomunidad) in Peru.
- Referring to capacity building, training and strengthening plans were developed aiming at the social basis. The joint boards have strategic plans for their development.

- Collect inputs from social society representatives, at local institutional technical level and national technical level and from the social and productive organisations.
- Establish commitments during the implementation process of the POMD.
- Communication strategies in order to allow the population to acknowledge the POMD as a planning tool for the preservation of resources.

**What opportunities and drivers for BP&T application existed?**

The Peace agreements and available funding in this framework (cooperation) facilitated the elaboration of the Plan.

In both countries there were management initiatives and the existence of professional groups with sufficient conceptual and methodological basis to promote this kind of processes. There were also public institutions and the civil society sharing common objectives for the management of the basin. In Peru: IRAGER, Autonomous Authority of the Hydrographical Chira-Piura basin, Regional Government, Universities and NGOs. In Ecuador: PREDESUR, Provincial Government in Loja, Municipalities at local level, and NGOs.

**Who supported the use of BP&T? Did they benefit from them?**

The local institutions. Interest of Chancelleries (although not always support).

In the case of Piura the POMD was adopted recently as a Management Document for the Basin (24/11/10: [http://www.regionpiura.gob.pe/detalle\\_pdf.php?pagina=ord0196\\_2010.pdf](http://www.regionpiura.gob.pe/detalle_pdf.php?pagina=ord0196_2010.pdf)).

In the case of Ecuadorian it is on the development agenda of the 7th zone of SENPLADES (Loja, El Oro, and Zamora). The National Water Secretariat, through the Hydrographical delimitation Puyango-Catamayo (Sub Secretariat). The themes of the plan that are approached are the appropriate water resources management and the appropriate management of renewable natural resources, through the hydrological studies in the sub basins Catamayo, Macará and Alamor.

The Bi-national Catamayo-Chira Project had a first phase until 2008 and is now in its second phase between 2009 and 2011. For this new intervention, the upper part of the basin was prioritised, above 1200 m.a.s.l. This corresponds to the province of Ayabaca in Peru and the municipalities of Loja, Espindola and Calvas in Ecuador. To optimise operation the headquarters were implemented in Ayabaca in Peru and in Gonzanamá in Ecuador.

**Areas and components**

AREA	COMPONENTS
A. Environmental management and prevention of risks	<ul style="list-style-type: none"> <li>• <a href="#">Appropriate management of water resources</a></li> <li>• <a href="#">Appropriate use of natural renewable resources</a></li> <li>• <a href="#">Reduction of vulnerabilities in case of natural phenomena</a></li> </ul>
B. Institutional and socio-economic management	<ul style="list-style-type: none"> <li>• <a href="#">Strengthening of the institutions (public sector entities, organised civil society)</a></li> </ul>
C. Management of the Information system	<ul style="list-style-type: none"> <li>• <a href="#">Appropriate information systems for decision making.</a></li> </ul>
D. Management of Productive diversification	<ul style="list-style-type: none"> <li>• <a href="#">Strengthening of the population's capacities.</a></li> <li>• <a href="#">Development and/or strengthening of sustainable economic alternatives.</a></li> </ul>

UNITY	SUBCOMPONENTS
Gender	<ul style="list-style-type: none"> <li>• <a href="#">Institutionalizing the gender focus.</a></li> <li>• <a href="#">Empowerment of women's organisations.</a></li> </ul>

In Peru there is also a new Institutional Framework put into being for Water Management. The National Water Authority (ANA), the Administrative Water Authority (AAA) at regional level and the Local Water authorities (ALA), the formation of the regional Counsel of water resources of the Chira-Piura basin and the implementation of the project of modernisation of the integral water management (financed by BID). This process starts taking into account the existing information and proposals.

Also in Peru the regional government plans also that from 2011 this project is inserted in its organic and functional structure.

### Section III. PERFORMANCE and EFFECTIVENESS

**What was the degree of success, or failure in BP&T application in the river basin? What were the major reasons for success, or failure?**

For the success: participation, this allows that the Plan is accepted as a management tool, beyond a project or a political period.

It is necessary to know the actors of a basin, listen to their proposals, problems and ideals, this allows to have clarity about what is necessary to communicate. This process is slow, expensive and complex and requires huge efforts on behalf of the technical personnel, but the results that it offers contribute considerably to the achievement of the development objectives.

Achieve representation of all participants implies a long and detailed process of approach/collaboration with social and productive organizations and institutions.

Articulation with local governments depends on location (upper, medium, or lower zone, Ecuador or Peru) and the dynamics playing for each of them.

**Did application of BP&T result in further development of capacity (regulatory, administrative, human, etc.) for adaptive water governance in river basins?**

Yes. Because it enforces looking for implementation modalities related with competences of the involved actors. (ADAPTATIVE – Climate Change)

Actually in Piura the Regional Strategy for Climate Change is elaborated, which should consider among its priorities the adaptation measures regarding water resources and incorporate itself (actualisation) in the documents that organise the land use management (such as the POMD) and the public investments.

**Did application of BP&T result in changes towards more adaptive behavior of stakeholders?**

Idem. as in 2.

**Did application of BP&T contribute (and to what possible extent) to problem-solving, or its mitigation)?**

Not yet. If we evaluate it from the point of view of the application of the POMD in an "official" way. There are different phases regarding the running processes: the Water Authority, Climate Change Strategy, Basin Plans, etc. But it can be noticed that the formulation process generated a lot of information that was used in different development initiatives.

### Section IV. Export-import of the BP&T between countries or basins

**Examples of BP&T transferred between countries/basins**

construction of the plan for management and hydrological modelling, as a strengthening strategy of the –basin committees, a strategy used in the Brazilian-Uruguayan experience. Here the information management is used to strengthen the committee, to detail a set of actions that the committee carries out

**Was adaptation of the BP&T to the local context necessary in order to make the transfer possible/successful?**

For this replicas the existing water standard frameworks should be considered, the existing institutions and the system of competences of the water actors to define who does what while the committee can be activated, impulse the process of the construction of the plan, the management of the information and the construction of the model

**Name of the River Basins: Guayas (Ecuador)**

**Name of the Twinning project: WETwin**

### Section I. BP&T APPLIED

**What exactly was the best practice or tool? How was it applied?**

In 1993 a process to modernise the Ecuadorian state was conceived and it started with the approval of different legal instruments. This process was consolidated in 1998 with the approval of a new constitution. By this a big political and legal impulse was given to three themes: 1) the decentralization of the State by means of the handing over of competences and resources to local governments and regional development entities; 2) the privatisation of public services; and 3) the figure of the concession of public services that could not be privatised, introducing furthermore for the first time some concepts of sustainable development. With these guidelines in the case of water the competences as established in the current Law on Water from 1972 to the Regional Corporations for Development (CRD) were transferred by the Government and the part relative to standards and regulation to the National Council on Water resources (CNRH). In the case of the Guayas basin, the CRD was called the Commission for Studies on the Guayas River Basin (CEDEGE), organism that for a large period of time worked on the design of an Integral Plan of Social and Environmental Management of the Guayas River Basin and the Peninsula of Santa Elena (PIGSA), which was finalized in 2003. Through this process it pretended to claim all competences of water management in the region. In principle the plan was rather integrated and took into account a lot of IWRM principles although on a regional level. Several legal instruments were promoted and approved to allow the application of the PIGSA in the Guayas Basin, making CEDEGE an important and powerful political actor. Nevertheless no important progress was made to actualise the national legal frameworks, which were obsolete according to experts. Parallel to this process, certain local and regional governments, principally those of Guayaquil City and the Guayas Province were elaborating and promoting autonomy proposals that were accepted locally, but generated much resistance in Quito and other provinces, especially in the highlands. At the start this whole process had a locally very well accepted logic, in political as well as in business and even academic spheres but an important resistance from basic organisations, not because of its contents, but because they mistrusted the CEDEGE, product of a polemic action while it built the actually existing hydraulic infrastructure in the Guayas River Basin. Even so, the PIGSA resulted in the most important actual planning process realised in CEDEGE and in the Guayas River Basin. The good practice is in this case definitely the participatory planning, including various new elements for that time such as the use of geographic information systems and it tried to adapt to the failures in national framework. This process was started effectively a long time before, since the mechanisms to modernise the Ecuadorian State were conceived, with a clear political project that furthermore responded to the challenges of the Washington Consensus.

**What was the reason and objective of its application?**

In principle it can be stated that the objectives were to improve services, improve water management, and above all to benefit from existing resources in the basin to promote sustainable economic development in the region.

**Who applied or implemented the practice? What stakeholders were involved in its implementation?**

The planning practice of the basin required the actions of different institutions, authorities, international agencies and to a certain extent also civil society, because mistrust from certain groups towards CEDEGE weighted anyway.

**Were any regulatory enforcement and incentive mechanisms used to support BP&T application?**

The design of the PIGSA was possible just because of the political process that started in Ecuador in 1993 and that pretended the modernisation of the state. Later on the 1998 Constitution became the main instrument that allowed discussion, design of tools and the application of themes such as effective decentralisation, privatisation of public services, and concession of services. Nevertheless in practice there were huge problems because not one important public service or stately activity was given in concession or privatised until now, nor was decentralisation implemented in an effective way.

### Section II. CONTEXT FOR BP&T IMPLEMENTATION

**What were the major socio-economic or political constraints for BP&T application?**

At socioeconomic level a strong barrier was the lack of funding, that could have made possible an effective transference of competences from national entities towards local governments or regional entities. At political level the main problem was that this process apparently weakened national identity and it weakened even more the actions of entities at national level, what in a certain moment was expressed in a strong opposition to the development model that the region was discussing since some years, and whose principal banner was at the start of 2000 regional autonomy. In this way the lack of adequate regulation frameworks, the principal one

being the Water law, caused that national entities that were supposed to effectuate a controlling guidance, didn't have any impact on what CRDs did, e.g. CEDEGE that on the contrary had an important political power.

**What were the major barriers rooted in the design of the governance system? Who opposed BP&T use?**

When the implementation of PIGSA was discussed seriously for the Guayas River Basin a strong barrier for implantation of the designed governance system was the lack of technical capacity, not necessarily in hydraulic aspects relative to engineering, but rather related to social themes that allowed an effective involvement of the actors, or the treatment of other sensible themes such as for instance conflicts, because there was indeed no prepared people present, or if there were, there was no capacity to involve them in the process.

**How were barriers overcome?**

Approaches were intended with the Universities asking them to prepare professionals in certain areas, although in practice this never happened, because there were neither funds nor guarantees for these professionals to be absorbed by the planning system of CEDEGE. Internally CEDEGE was an institution dominated by hydraulic technicians that never conceded space for other professionals to work and introduce other themes of the IRWM. At the end of the nineties for instance, CEDEGE created a development and agricultural extension department, but this never played an important role and disappeared in 2003.

**What opportunities and drivers for BP&T application existed?**

The opportunity was created by the current legal framework in Ecuador between 1993 and 2008 that proposed modernization of the State by means of specific tools for decentralisation, privatisation, concessions of public services, among other aspects. One of these aspects and the strongest one was also the advancing discussion about autonomous regions. This motivated that in a lot of spheres the local governments (provincial or municipal) and the regional entities claimed competences and for this reason were forced to plan, and doing this they generated in a certain way capacities and a more local discussion of the problems that up to then were considered national themes.

**Who supported the use of BP&T? Did they benefit from them?**

The PIGSA received an important Support especially in business, political and some academic spheres of Guayaquil City and the Guayas Province, but not necessarily in other places. If it is taken into account that the Guayas basin is covering entirely three provinces and partially 7 more, this implies that this support was not total, not necessarily because of contents but because no ample dissemination process was organised in the other provinces. It was a process that responded politically much more to the logics and rhythms of the Guayas Province and in other provinces where the political party dominant in Guayas also governed, the Social Christian Party (PSC)

### Section III. PERFORMANCE and EFFECTIVENESS

**What was the degree of success, or failure in BP&T application in the river basin? What were the major reasons for success, or failure?**

Since January 2007 when Rafael Correa holds office as President of Ecuador a profound transformation process of the institutional structures of the country has started in different spheres, being a central line the total rejection of whatever policy coming out of the Washington consensus and for this reason an estrangement from international organisms that it promoted. Another fundamental line is the rescue and strengthening of the Central State, this means its institutions, what rested power from the autonomy project of the Region of the Guayas River Basin. This process was consolidated in 2008 with the approval of a new constitution and is still consolidating with the approval of a series of related laws that among much more redefine the mechanisms for economic development, decentralisation transference of competences always keeping a protagonist regulating role for the central state. This implied that the PIGSA lost every support, what resulted in even more weakness of the CEDEGE until its vanishing in 2009. This means that the process returned to zero and at this moment Ecuador is stagnating in the process of approving a new Water Law, which is according to the precepts of the new Constitution that for instance recognises the access to water as a human right among other interesting themes. Today the National Water Secretariat (SENAGUA) took the national guidance of IWRM and is working on the delimitations of the basins, one of them the Guayas Basin. This entire process has an important electoral support from base organisations urban as well as rural, including in Guayaquil but faces a strong opposition from the business and political levels in the region.

**Did application of BP&T result in further development of capacity (regulatory, administrative, human, etc.) for adaptive water governance in river basins?**

No, because finally the whole plan was never applied and the country decided to support another development model that does not consider the precepts under which the former institutions were designed for the governance of water in the Guayas River Basin.

**Did application of BP&T result in changes towards more adaptive behavior of stakeholders?**



To a certain extent it does, because in Ecuador the planning tool was not considered important, to the extent that the emphasis that made the former economic model of Ecuador towards economic liberalisation and commercial opening did not prioritise this tool. In spite of this there was in the case of the Guayas Basin an important effort of planning, that was consistent with the advance of knowledge regarding IRWM and several concepts of modernisation, participation and sustainable development committed maybe the error to stick ideologically to the economic dominant model without ceding space to the possibility to other kinds of institutionalisation to reach the same objectives.

**Did application of BP&T contribute (and to what possible extent) to problem-solving, or its mitigation)?**

It did not contribute to anything because it was not applied. Today a planning process is developing that compared to the previous one has the great advantage that it is backed in various general precepts that appear in the constitution and although the approval of the new water law is still not achieved, SENAGUA is anticipating the organisation of the sector. It is not known if they are using or plan to use the information included in the PIGSA.

**Section IV. Export-import of the BP&T between countries or basins**

**Examples of BP&T transferred between countries/basins**

Interest regarding planning system modelling and evaluation software WEAP, to involve users. As a University we have an academic interest for tools of this kind. There are other interesting tools such as the Brazilian one but we are not in conditions to apply them.

**Was adaptation of the BP&T to the local context necessary in order to make the transfer possible/successful?**

**What were/are the main barriers and opportunities for transfer & adaptation of the BP&T?**

**What were the “external” influences in the implementation of the BP&T?**

**Name of the River Basins: Titicaca (Bolivia-Peru)**

**Name of the Twinning project: -**

**Section I. BP&T APPLIED**

**What exactly was the best practice or tool? How was it applied?**

Problem: Bad management, pollution, unbalanced offer-demand, degradation, high risk and vulnerability due to climate change. Existing institutionalism does not achieve to respond to these problems.

Tool: Process of bi-national consultation to realise an evaluation/diagnosis and participatory planning with all actors.

(<http://www.alt-perubolivia.org/pagina/component/content/article/1377.html>)

**What was the reason and objective of its application?**

Reason: Lack of viability of the implementation of the existing Global Directing Plan using the existing (national) structures. (<http://www.alt-perubolivia.org/pagina/plan-director.html>)

Objective: Actors propose and require prioritisation of integrated management processes.

**Who applied or implemented the practice? What stakeholders were involved in its implementation?**

The Bi-national Authority promoted in coordination with national, local authorities and users and social organisations. (<http://www.alt-perubolivia.org/pagina/>)

**Were any regulatory enforcement and incentive mechanisms used to support BP&T application?**

Legal mandates were used and the convoking power exists. Also coordination relations with local instances related to water and government in general. Acquisition and development of technical capacities to conduct participatory processes.

**Section II. CONTEXT FOR BP&T IMPLEMENTATION**

**What were the major socio-economic or political constraints for BP&T application?**

Barrier: 1) disinformation of the population (limited vision of the system) and lack of knowledge of roles and functions of actors, 3) resistance of formal management instances to treat in a technical way the water management, 4) the noticeable habit to prioritise political positions in the water management theme, 5) strongly rooted uses and habits that do not allow innovation and restructuring, 6) little socialisation of the Peruvian-Bolivian agreement and its Directing Plan.

**What were the major barriers rooted in the design of the governance system? Who opposed BP&T use?**

Some Government/Public Administration/Local Government Sectors oppose at certain momento due to proper agendas.

**How were barriers overcome?**

Participatory diagnostic processes to evaluate the state-of-the-art of water resources and environment, strategic planning from national visions, definition of vision and strategic objectives combining national visions, establishment of principles and objectives of management, establishment of an index to elaborate bi-national management statute, including the strengthening of the national and bi-national management institutions and the necessity to restructure the bi-national management.

**What opportunities and drivers for BP&T application existed?**

Water stress and degradation of the environment, or the noticeable exacerbation of the effects of drought (aggravated by climate change). Also the presence of a UNEP Project.

(<http://alt-perubolivia.org/pagina/geotiticaca/UNEP-alt.html>)

**Who supported the use of BP&T? Did they benefit from them?**

The base actors, the users. Through the users the institutions were incorporated. As an external agent UNEP can be mentioned for contributing to sustainable management of the water resources and the environment of the Titicaca Lake.

(<http://alt-perubolivia.org/pagina/geotiticaca/UNEP-alt.html>)

**Section III. PERFORMANCE and EFFECTIVENESS**

**What was the degree of success, or failure in BP&T application in the river basin? What were the major reasons for success, or failure?**

Keys for success: transparency and information and consultation mechanisms. Adverse political incidence, resistance to change is a barrier, a limitation.

**Did application of BP&T result in further development of capacity (regulatory, administrative, human, etc.) for adaptive water governance in river basins?**

Yes. This process has been the initial phase that aroused interest and opened new spaces for actors to impulse their initiatives and these are spaces difficult to disappear. This is fundamental to design strategies of adaption that cross a good management. This conscience is growing.

**Did application of BP&T result in changes towards more adaptive behavior of stakeholders?**

Yes. Because they know the risks they can go to local instances to prioritise projects, investments oriented towards adaption. This conscience is incipient, but present.

**Did application of BP&T contribute (and to what possible extent) to problem-solving, or its mitigation)?**

Not yet, but it is hoped for. There are different phases. It is an initial step.

**Section IV. Export-import of the BP&T between countries or basins**

**Examples of BP&T transferred between countries/basins**

Modernisation project (Peru / World Bank)

Training program for good integral water resource management (Intendancy for water resources, now National Water Authority ([www.ana.gob.pe](http://www.ana.gob.pe)))

**Was adaptation of the BP&T to the local context necessary in order to make the transfer possible/successful?**

Yes. Basic learning-teaching processes were applied for a focal group that was in majority completely unaware about IWRM.

**What were/are the main barriers and opportunities for transfer & adaptation of the BP&T?**

Initially the lack of knowledge and technical capacities was a disadvantage that made the process slower, but after the process there was a consolidated group having concepts and aptitudes and attitudes.

**What were the “external” influences in the implementation of the BP&T?**

Climate change effects, international cooperation.

**Name of the River Basins: Alto Cauca (Colombia)**

**Name of the Twinning project: Twinlatin**

**Section I. BP&T APPLIED**

**What exactly was the best practice or tool? How was it applied?**

As from 2005 a joint inter-institutional intervention was implemented in the framework of the Twinlatin project, with an integral vision and independent of the jurisdiction of Environmental Authorities (CVC, CRC and DAGMA) and of local governments (basically municipalities of Cali and Popayan) and of regional authorities (Departments of Valle del Cauca and Cauca). An environmental diagnostic was constructed in a collective and participatory way, which identified the main problems of deterioration of water quality. Additionally

governmental institutions participated, as well as the private sector, professional guilds, the academic world and the community.

**What was the reason and objective of its application?**

An increasing deterioration of water quality, due to unarticulated environmental interventions with respect to technical, normative and administrative aspects.

**Who applied or implemented the practice? What stakeholders were involved in its implementation?**

The environmental authorities gathered the institutions and coordinated the teamwork which was organised with the different actors and at the start with the financial and technical support granted by Twinlatin.

**Were any regulatory enforcement and incentive mechanisms used to support BP&T application?**

No standard was applied to enforce the implementation of the tool. The environmental authorities performed their functions as assigned by Law.

The results obtained during the Twinlatin project and the application of the tool generated inputs that contributed and helped the expedition of the National Policy on Integral Water Resources Management (issued in March, 2010) regarding the components of water management and with the subsequent construction of the standards for water quality and sewage discharges.

**Section II. CONTEXT FOR BP&T IMPLEMENTATION**

**What were the major socio-economic or political constraints for BP&T application?**

The main difficulties for implementation were basically personal interests of involved actors, jurisdiction of the different participating institutions regarding management, and the particularities and the heterogeneity of the population groups (mainly indigenous people).

**What were the major barriers rooted in the design of the governance system? Who opposed BP&T use?**

Initially the dispersion of information and the different positions with regard to the causes of the environmental problems.

**How were barriers overcome?**

The importance of all involved actors was recognised, as protagonists of the process of environmental recuperation of the basin; collective and participatory analysis of the admission of the problem, the causes and their effects, as well as the identification of the possible alternative solutions. Finally incidence was made upon the central government to issue a social and economic policy document (CONPES) regarding the sanitation of the Upper Cauca Basin.

**What opportunities and drivers for BP&T application existed?**

The experience and the knowledge of the area, and the European Community support to the Twinlatin projects and learning alliances provided the environment for the interchange of knowledge and for the dialogue between the actors in the basin.

**Who supported the use of BP&T? Did they benefit from them?**

Basically, due to its leadership role, the CVC and later, by means of alliances with the academic sector and professional associations (Acodal). All actors benefitted from the process, participating actively and under equal conditions in the application of the tool.

**Section III. PERFORMANCE and EFFECTIVENESS**

**What was the degree of success, or failure in BP&T application in the river basin? What were the major reasons for success, or failure?**

Actors succeeded successfully in building a general diagnostic of the zone regarding environmental problems and an action plan in which measures were proposed to improve environmental conditions in the upper Cauca basin. This action plan was incorporated in the aforementioned CONPES document. The expectation is to achieve that actors provide funds and technical resources to develop the proposed measures. An active participation of the different actors was noted. And about the risk, this is the accomplishment of the commitments by the involved actors.

**Did application of BP&T result in further development of capacity (regulatory, administrative, human, etc.) for adaptive water governance in river basins?**

Yes. It was a progressive process, binding for the involved actors and transcending to the national public policy level.

**Did application of BP&T result in changes towards more adaptive behavior of stakeholders?**

Yes. A sensitization and knowledge levelling was achieved that induced the construction of collective solutions.

**Did application of BP&T contribute (and to what possible extent) to problem-solving, or its mitigation)?**

Up to now the result is the issuing of the COPES document, the institutionalisation of the inter-institutional roundtable and the creation of a technical bureau, as a body.

#### Section IV. Export-import of the BP&T between countries or basins

##### **Examples of BP&T transferred between countries/basins**

At this moment, some of the aspects of the experience and the knowledge acquired during the application of the tool are incorporated in processes of Integral Water Management in other basins in the country. These are shared with other environmental authorities, for instance in the La Vieja river basin, shared between CVC and CRQ, Carder and National Natural Parks.

##### **Was adaptation of the BP&T to the local context necessary in order to make the transfer possible/successful?**

Yes. The different aspects of the process are resumed, but conditioned to the particularities of each basin, such as: other involved actors, physiographic characteristics of the basin (three departments, four environmental authorities and actors' interests).

##### **What were/are the main barriers and opportunities for transfer & adaptation of the BP&T?**

**Barriers.** Information with different detail levels, scales and methodologies. Furthermore the number and the interests of the different actors of the basin (three departments, four environmental authorities, the academic world of the three departments and more than twenty municipalities)

**Opportunities.** Actors are part of the same hydro basin in this case the La Vieja River Basin what allows them to realise a coordinated and effective environmental management.

##### **What were the “external” influences in the implementation of the BP&T?**

Mainly the experience of the different projects supported and developed with European Community resources (Twinlatin and Switch).

Name of the River Basins: Baker (Chile)

Name of the Twinning project: Twinlatin

#### Section I. BP&T APPLIED

##### **What exactly was the best practice or tool? How was it applied?**

The management plan of the Baker River basin is framed in the National Strategy for Integral Hydrographical Basin Management (ENGICH) as one of three pilot initiatives all over the country. This strategy was approved by the President of the Republic in July 2007, with the objective of “protecting water resources, regarding quality as well as quantity, to safeguard human consumption and harmonise objectives of conservation of ecosystems with the sustainable use of the resource for economic activities”.

In this context the National Commission on Environment (CONAMA) and the General Water Direction (DGA) formed a Technical Regional Secretary, assuming a coordinating role to induce the local implementation of the ENGICH. At the same time, in December 2008 a Basin Organism was formed, integrated by representatives of the public sector, private sector and civil society, communal authorities, experts and NGOs. Each of these actors gave inputs from its personal experience in the territory to shape the first draft of this Management Plan which tried to incorporate different views, with their multiple encounter points and also their divergences and that form the bases for an integral action, coordinated and sustainable in favour of development and basin conservation.

The following phases were carried out: (1) collection of general antecedents of the basin, regarding physical, environmental, socioeconomic terms, taking into account also the uses of the soil and the water and the situation of user rights; (2) an integrated diagnosis through which the main problems of the basin were identified in different scopes, and at the same time the state of certain key variables of the territory were determined; (3) the vision of the basin, built by the Basin Organism for the Baker River; and (4) the management plan as such, with its action lines, objectives, aims and measure programme.



Note: The river Baker basin is formed in the General Lake shared with Argentina, but the Basin Organism considers only Chilean territory.

**What was the reason and objective of its application?**

It consisted of a pilot initiative to protect water resources, in quality as well as quantity, to safeguard human consumption and to harmonise the objectives of conservation of the ecosystems with the sustainable use of the resource for economic activities, and analyse its application at national level.

**Who applied or implemented the practice? What stakeholders were involved in its implementation?**

It was a government policy, whose compliance was entrusted to the Directive Council of the CONAMA, who agreed upon the creation of an Inter-ministerial Committee, coordinated by the Executive Direction of the CONAMA and integrated by Ministries having competences or interest in the management of water resources, namely: Foreign Affairs, Defence, Finance, Economy, Planning, Public Works, Health, Housing and Urbanism, Agriculture, Mining and Energy who got down to the elaboration of a strategy in this matter.

The Executive Direction of CONAMA submitted the proposal for the National Strategy for Integrated Water Basin Management to the Directive Council which was implemented in three pilot basins at national level: Copiapó River Basin, Rapel River Basin and Baker River Basin.

Its implementation in the Baker basin was concretised through an instruction of the Regional Intendancy of Aysén, towards CONAMA and the General Water Direction for the Aysén Region to form a Technical Secretariat and create the Organism for the basin.

The actors composing the Baker River Basin Organism are:

<b>Institución</b>
<b>Public Sector</b>
Regional Secretary of Ministry of Planning and Coordination Secretaría Regional Ministerial de Planificación y Coordinación
Regional Secretary of Ministry of National Goods Secretaría Regional Ministerial de Bienes Nacionales
Regional Secretary of Ministry of Health Secretaría Regional Ministerial de Salud
Regional Secretary of Ministry of Mining and Energy Secretaría Regional Ministerial de Minería y Energía
Regional Secretary of Ministry of Economy Secretaría Regional Ministerial de Economía
Regional Secretary of Ministry of Infrastructure Secretaría Regional Ministerial de Obras Públicas
Regional Secretary of Ministry of agriculture Secretaría Regional Ministerial de Agricultura
Maritime Department of Aysén Gobernación Marítima de Aysén
<b>Regional and Communal Authorities</b>
Provincial Government Capitán Prat Gobernación Provincial Capitán Prat
Provincial Government General Carrera Gobernación Provincial General Carrera
Municipality of Río Ibáñez Ilustre Municipalidad de Río Ibáñez
Municipality of Chile Chico Ilustre Municipalidad de Chile Chico
Municipality of Cochrane Ilustre Municipalidad de Cochrane
Municipality of Tortel Ilustre Municipalidad de Tortel
<b>Productive Sectors</b>
Water Community of Chile Chico.

Comunidad de Aguas de Chile Chico
Irrigation Committee of Puerto Ingeniero Ibáñez Comité de Regantes de Puerto Ingeniero Ibáñez
Irrigation Committee of Puerto Guadal Comité de Regantes de Puerto Guadal
Irrigation Committee of Fachinal Comité de Regantes de Fachinal
Irrigation Committee of Península Levicán Comité de Regantes de Península Levicán
Irrigation Committee of Bahía Jara Comité de Regantes de Bahía Jara
Water rights Committee of Cochrane Comité de Derechos de Agua de Cochrane
Hidroaysén
AES GENER
Aguas Patagonia de Aysén S.A.
Minign Company Cerro Bayo Compañía Minera Cerro Bayo
Professional Association Río Baker Asociación Gremial Río Baker
Costa Carrera Corporation Corporación Costa Carrera
<b>Nongovernmental Organisations</b>
Foundation for the Conservation of Patagonia Fundación Conservación Patagónica
Defenders of the Patagonia Spirit Defensores del Espíritu de la Patagonia
Mesa Representativa la Voz de Tortel
Comité Pro Defensa de la Flora y Fauna (CODEFF)
<b>Expert Institutions</b>
Universidad Austral de Chile, Trapananda headquarter
Centro de Investigación de Ecosistemas de la Patagonia (CIEP)

#### **Were any regulatory enforcement and incentive mechanisms used to support BP&T application?**

3 formal regulating instruments:

- 1.- Regional Intendancy Resolution (first regional authority appointed by the president of the republic) that “forms a basin organism for the pilot implementation of the national policy on Integrated Water Basin management in the River Baker Basin, Aysén del General Carlos Ibañez Del Campo Region”.
- 2.- Creation of a regulation of basin organism for the Baker River Aysén Region”, approved by the basin organism.
- 3.- Generation of a basic document with management guidelines for the basin: “Baker basin management plan 2010-2015”.

The implementation of this experience had financing of CONAMA for a 24 months period (2008-2009), which allowed installing the Basin Organism and arriving till the elaboration of the management plan, not implemented up to now.

## Section II. CONTEXT FOR BP&T IMPLEMENTATION

### What were the major socio-economic or political constraints for BP&T application?

- a) Pilot experience.
 

Budget for the operational functioning of the Basin Organism, this means coordination, transport and logistics in general to gather all integrants.

Existence of a hydroelectric mega-project in the basin that is in the phase of environmental evaluation and that faces different opinions about its materialization within the Organism (detractors, representative of the electrical plant, authorities, others), situation that provoked discussions, deviation of objectives and above all distrust in the process on behalf of the integrating organizations.
- b) Actual Situation.
 

Change of government in the country, reason for which the continuity of the plan is in a revision process, this situation detained the implementation process of this plan.

Institutional changes, the pilot experience was lead by CONAMA and DGA, in January 2010 the Law that creates the Ministry for Environment was issued, and CONOMA was replaced by the Service for evaluation of environmental Impact and a Regional Secretary of the Environment Ministry, without specific working guidelines related to the Basin Strategy of the Country.

There is no existing funding for the functioning of the Basin Organism.
- c) Situation of the Bi-national Basin (Chile – Argentina)
 

The basin organism only considered the participation of actors in Chilean territory, without taking into account the bi-national condition of the basin. The main existing barrier is the presence of a coordination group for trans-border basins with Argentina, at central government level, depending on the Foreign Affairs Ministry, with participation of CONAMA and DGA, but establishing that the general plans for use of shared basins should be planned within this group, so this does not allow local or regional initiatives without according to the operational framework of the protocol between both countries.

### What where the major barriers rooted in the design of the governance system? Who opposed BP&T use?

- a) Pilot experience.
 

Lack of credibility of the proposal, given the facts that in parallel two mega-dams were evaluated environmentally in the basin. The NGOs were the main opponents to the initiative.
- b) Actual Situation.
 

Government change and new environmental institutions (Ministry of Environment). No oppositions exist, nevertheless, the theme lost political support and funding. No clarity regarding the continuation of the initiative.
- c) Situation of the Bi-national Basin (Chile – Argentina)
 

No explicit opposition to the theme, but the limitation is rather institutional and regulated at central level, based upon a pre-established protocol.

### How were barriers overcome?

- a) Pilot experience.
 

Although it is very difficult to overcome the barrier considering the temporality of the environmental evaluation of the hydro-plant, workshops were organised and it was achieved to incorporate them into the Basin organism.
- b) Actual Situation.
 

There are no specific actions that allow overcoming these barriers until getting a more clear definition on behalf of the authorities of the new Government, and the new institutions. On the other hand, the environmental evaluation of the mega-plant continues and is the most important theme.
- c) Situation of the Bi-national Basin (Chile – Argentina)
 

No measures were implemented to this respect.

### What opportunities and drivers for BP&T application existed?

- Entrance conditions for Chile in the OCDE
- The existence of a national policy for Basin Management
- Creation of a National Basin Strategy that considered three pilot basins (funding and political willingness to execute).
- Selection of the Baker River Basin as pilot basin and the context of the evaluation of hydroelectric projects.



- Existence of interested institutions and organisations in the territory.
- Existence of basic information for an integral diagnosis of the basin (Twinlatin project, information of public and private institutions, NGOs, University and Research Centre)

**Who supported the use of BP&T? Did they benefit from them?**

- Political authorities
- Integrants of Basin Organism

Not implementing the management plan makes identification of beneficiaries impossible, nevertheless the experience can be rescued by institutions that participated in this pilot initiative.

<b>Section III. PERFORMANCE and EFFECTIVENESS</b>
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**What was the degree of success, or failure in BP&T application in the river basin? What were the major reasons for success, or failure?**

a) Success.

Coordination between public institutions and exchange of information of each sector. Establishment of a Basin organism and the public-private and inhabitant's interaction. Elaboration of a territorial diagnosis that was translated into a basin management plan.

Reasons:

Existence of political willingness and funding.

Existence of information of the area to elaborate a general diagnosis.

b) Failure.

Failing implementation of basin management plan.

Reasons:

Little credibility of the process on behalf of some integrants of the basin organism due to the existence of a mega-project in environmental evaluation phase.

Stagnation of the pilot process due to government change and change of environmental institutions.

**Did application of BP&T result in further development of capacity (regulatory, administrative, human, etc.) for adaptive water governance in river basins?**

Only until a certain level, the Resolution of the Regional Intendancy was dictated for the constitution of the basin organism, a regulation was created for functioning of the basin body, and a basis document was generated with guidelines for a basin management plan. On the other hand the institutional support was progressive, but the aforementioned situations explain the stagnation of the process.

**Did application of BP&T result in changes towards more adaptive behavior of stakeholders?**

Generally small changes, with differences between actors, to a lesser adaptive degree the NGOs opposing the hydro-projects and to a higher degree some productive sectors and public institutions.

**Did application of BP&T contribute (and to what possible extent) to problem-solving, or its mitigation)?**

A series of problems was identified in the basin (12) and measures were established for solutions in the document of the management plan (29 measures) but implementation was not realised due to the aforementioned reasons.

<b>Section IV. Export-import of the BP&amp;T between countries or basins</b>
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**Examples of BP&T transferred between countries/basins**

**Was adaptation of the BP&T to the local context necessary in order to make the transfer possible/successful?**

**What were/are the main barriers and opportunities for transfer & adaptation of the BP&T?**

**What were the "external" influences in the implementation of the BP&T?**

## LATIN AMERICA: BP&T Summary Table (form 2)

### BIOBIO (CHILE)

BP&T Examples	BP&T Application				Context		Performance	
	Major purpose	What is done	Actors involved	Incentives/Enforcement	Barriers/Constraints	Opportunities/Drivers	Success Stories	Problems encountered
<b>Focus 2: Engagement and coordination among actors, forms of interaction/partnerships</b>								
Example 1: PMBB monitoring programme	Water quality monitoring (WQ)	Definition of sampling points, identification of parameters and sampling frequency and periods. Coordination with private actors.	Academic world, private users, regional institution in charge of water management	No incentives did exist, but international financial support at the start	Nonexistent regulation framework of WQ. Lack of availability of companies to participate. Equipment and human capital	Democratization of the political system, Growing green industrial economy, Initiatives in basins for coordination between actors, information EULA Project	Sustainability in time, financial sustainability, support for decision making related to WQ. Input for the formulation of the secondary standard for water quality in the Biobio basin.	Implementation of the National Strategy for Hydrographical basins and the creation of a really inclusive and participatory basin organism.
Example 2: Strengthening of local capacities of the ACCBBN	Strengthening local capacities considering specific characteristics of society integrated by the association	Environmental and productive diagnosis, prioritisation of problems, acknowledgment of common leaderships in different spaces of local participation	Academy Private users, municipalities	No national incentives do exist. Funding is shared between a public service of the Agricultural Ministry and the Association	Application of water code, unlinking of land and water, loss of credibility, disinformation about water rights, agrarian right.	Bad microbiological water quality for irrigation and the reduction of profitability	Design and implementation of a system of land use management. Identification of communitarian leaders beyond association interests. Identification of actions for the diversification of activities (MDL)	Disincentive to turn into vigilance boards, less integration.

## GUAYAS (ECUADOR)

BP&T Example	BP&T Applied				Context		Performance	
	Major purpose	What is done	Actors involved	Incentives/Enforcement	Barriers/Constraints	Opportunities/Drivers	Success Stories	Problems encountered
<b>Focus 1: Application of national water frameworks in river basins</b>								
Integral planning , participatory with a socio environmental focus	Sustainable development of the Basin	Elaboration of diagnosis and development of plans	Several: CEDEGE, local governments and regional entities, Universities, little participation of base organisations	Legal instruments were developed that allowed their application, but without touching national legislation and institutionalisation	Funding, technical capacity, political moment, plan responding to a political plan	Modernisation process of the Ecuadorian State started in 1993 was the opportunity that allowed developing the plan	It is not a success story, because the plan has been abandoned completely and today the country decided to follow another focus for policy	A lot of vacuums and it is clear that developing an adequate planning is not sufficient if there are no resources to implement it or if there are other interests behind

## TITICACA/TDPS (BOLIVIA-PERU)

BP&T Examples	BP&T Applied				Context		Performance	
	Major purpose	What is done	Actors involved	Incentives/Enforcement	Barriers/Constraints	Opportunities/Drivers	Success Stories	Problems encountered
<b>Focus 1: Application of national water frameworks in river basins</b>								
<i>Bi-national consultation process</i>	<i>Actors do participate, require and propose prioritisation of programs integrated in management</i>	<i>Diagnosis processes and participatory planning</i>	<i>All (users, social organisations, public institutions at different levels)</i>	<i>Environmental degradation and increasing vulnerability</i>	<i>Disinformation, resistance to change, little dissemination of bi-national agreements and Directing Plan</i>	<i>Sensitivity of actors regarding environmental degradation and uncertainty regarding effects of growing droughts. UNEP Project.</i>	<i>Definition and characterisation of the local situation in a bi-national context, definition of a vision towards 2020 and strategic objectives for its compliance</i>	<i>Lack of definition of management instances and institutional mechanisms for consultation and implementation of management at different levels.</i>
<b>Focus 2: Engagement and coordination among actors, forms of interaction/partnerships</b>								
<i>The conformation of two national impulsion committees for the IWRM in the TDPS system</i>	<i>To direct local initiatives and proposals of IWRM</i>	<i>Articulation of local management instances and elaboration and implementation of local management plans</i>	<i>Users, municipalities and regional governments</i>	<i>Growing unsatisfied demands of productive sectors</i>	<i>Institutional disarticulation/lack of coordination</i>	<i>Popular expectations of an improvement of the quality of life by using the natural resources and participation. Administrative decentralisation</i>	<i>In process, not yet</i>	
<b>Focus 3: Enabling learning and building adaptive capacity in water governance</b>								
<i>Generate reflection and inter-learning spaces for the construction of local proposals of IWRM</i>	<i>Generation of local capacities of management and adaption</i>	<i>Inter-learning workshops, diagnosis and planning</i>	<i>All, basis actors of local management</i>	<i>Interest from the actors to exercise their roles and functions for local sustainable development</i>	<i>Resistance to change. Lack of technical resources, information, knowledge for adaption.</i>	<i>Cooperation resources, prioritisation of national politics, administrative decentralisation</i>	<i>In process</i>	

## ALTO CAUCA (COLOMBIA)

BP&T Examples	BP&T Applied				Context		Performance	
	Major purpose	What is done	Actors involved	Incentives/Enforcement	Barriers/Constraints	Opportunities/Drivers	Success Stories	Problems encountered
<b>Focus 1: Application of national water frameworks in river basins</b>								
1 Coordinated and inter-institutional action that had incidence on the formulation of the National Policy of IWRM	Identification of the problems and the actions to be developed	Generation of inputs for the formulation of the policy	Environment Ministry, CVC and other actors	Incorporation of regional experiences in public policy	Dense information that made the incorporation of the inputs in public policy a hard job	Information available that responds to real environmental problems solving	Formulation of the National Hydric Policy for Integrated Water Resource Management	Risk for implementation due to different reasons: Political goodwill due to change of governors or due to availability of financial resources and internal reorganization of the environmental authority
<b>Focus 2: Engagement and coordination among actors, forms of interaction/partnerships</b>								
2. Joint inter-institutional action, with an integral vision of the Upper Cauca Basin, independent of administrative jurisdiction of the involved institutions.	Joint elaboration of the environmental diagnostic of the basin and the action plan	Sensitize and levelling of knowledge about the basin	Environmental authorities (CVC, CRC, Dagma), departmental governments (Cauca, and Valle) guilds and community.	Environmental improvement of the basin, what impacts on life quality of its inhabitants	Dispersion of information and the different positions related to the causes of the environmental problems	Experience and knowledge of the area, EC support, projects: Twinlatin and learning alliances	Unified document of diagnostic of environmental problems of the Upper Cauca Basin. CONPES document for environmental sanitation of the Upper Cauca Basin and establishment of technical consultation committee	Accomplishment of the commitments by each actor
<b>Focus 3: Enabling learning and building adaptive capacity in water governance</b>								
3. Joint inter-institutional action, with an integral vision of the Upper Cauca Basin, independent of administrative jurisdiction of the involved institutions.	Levelling of knowledge and acknowledgement of the importance of all actors as protagonists of the process.	Learning alliances and collective construction of the diagnostic and the alternative solutions.	Environmental authorities (CVC, CRC, Dagma), departmental governments (Cauca and Valle), guilds and community.	Environmental improvement of the basin	Particular interests	Unification of technical criteria and interests, empowerment of the management	Formulation of the Plan for Planning and Management of the La Vieja River Basin (Departments of Valle, Quindío and Risaralda)	Implementation of the solutions generated during the process.

## BAKER (CHILE)

BP&T Examples	BP&T Applied				Context		Performance	
	Major purpose	What is done	Actors involved	Incentives/Enforcement	Barriers/Constraints	Opportunities/Drivers	Success Stories	Problems encountered
<b>Punto Focal 1: Aplicación del marco nacional (de gobernanza) en la Cuenca caso de estudio</b>								
National Strategy Integral Basin Management	protect the water resource, for quality as well as quantity to safeguard the human consumption and harmonise the objectives for the conservation of the ecosystems with the sustainable use of the resource by the economic activities	(1) a collection of general antecedents of the basin, in physical, environmental, socioeconomic terms, considering also the uses of the soil and the water and the situation of the rights of use of this last one; (2) an integral diagnosis through which the principal problems in the basin are identified in their different environments, at the same time the state of certain key variables of the territory is characterized; (3) the basin vision built by the basin organism of the Baker River; and (4) the management plan itself with its action lines, objectives, aims and programme of measures.	Public sector, and communal authorities, productive sector, NGOs, research institutes.	funding by CONAMA for a 24 months period (2008-2009), which allowed the installation of a Basin Organism and to reach the elaboration of a management plan, which has not been implemented until now	<b>a) Pilot Experience:</b> Limited funding for logistics, existence of a hydro-electric project that causes controversy <b>s. b) Actual situation :</b> Government change, of environment al institutions, no continuity of funding. <b>Situation of Bi-national Basin (Chile – Argentina):</b> Existence of a centralised coordination group	Entrance conditions of Chile in ACDE. Existence of a National Policy on Basin Management that considered three pilot basins (financing and political willingness for execution). Selection of Baker River Basin as pilot basin and the context of evaluation of the hydroelectric projects. Existence of interested institutions and organisations in the territory. Existence of basic information for an integral diagnosis in the basin (Twinlatin project, information of public and private institutions, NGOs, University, research centre).	Coordination between the public institutions and interchange of information from each sector. Conformation of a basin organism and the public, private and inhabitants' interaction. Elaboration of a territory diagnosis that was translated in a basin management plan.	Lack of funding. Lack of commitment and participation of local actors. Discontinuity of authorities and policies. Mistrust due to the parallel existence of a hydro-electric mega-project.

**QUARAÍ** (BRAZIL)

*TABLE NOT PROVIDED*

**QUARAÍ-CUAREIM** (BRAZIL-URUGUAY)

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**CATAMAYO-CHIRA** (ECUADOR-PERU)

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## Annex 4. Presentation Materials from the Workshop

Presentation materials from the workshops will be uploaded to the Twin2Go website ([www.twin2go.eu](http://www.twin2go.eu)).