



Sharing the benefits from river basin management



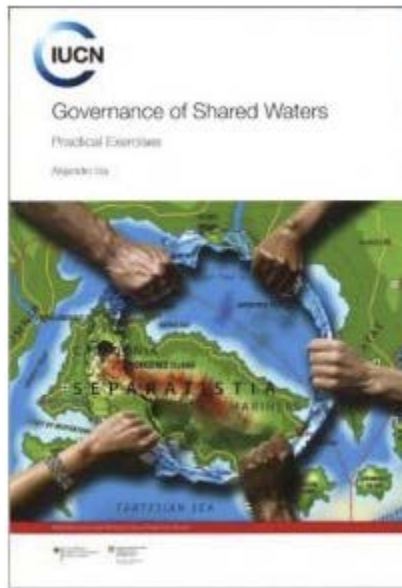
Exercise guide
and templates



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Agency for Development
and Cooperation SDC

Fictional case studies



The fictional case study used as the background for the exercises in this training package is one of the four fictional cases described in this book from 2013; *Governance of Shared Waters: Practical Exercises*, authored by Alejandro Iza from IUCN's Environmental Law Centre. The book was prepared and designed to be used in workshops and capacity building activities, and its four fiction cases describe series of conflict scenarios that are completely fictitious but fully possible "realities" in order for them to be analysed in the context of dialogue and cooperation among the various imaginary actors.

Please note that in some of the steps, additional information might have been added that is not included in the fictional case study we have used; these additional stakeholders or scenarios have been added to facilitate these specific exercises in question. Participants are, of course, also free to add or include stakeholder and scenarios during the exercise, as depending on the context they come from, they might feel that the stakeholders or scenarios described do not full breadth of water users and situations they could imagine from their basins.

STEP 1 – Identifying stakeholders and mapping interests and influence

Short exercise in pairs/plenary (15mins)

Question 1 – Ask the participants: “Who are the relevant stakeholders?” this can be done with the participants in pairs for 5-10mins just to get them thinking about the different types of stakeholders. Stakeholders can be individuals, groups, organisations, departments, or networks. They can relate to the question being examine either positively or negatively and have high or low influence on the outcome. Participants can then be asked to call out answers and you can record them on a flip chart or directly into a PowerPoint slide.

Possible prompts you can use to elicit answers:

- Those who derive benefits, or incur impacts, from the use of the water in the basin and specifically from proposed basin development(s)
- Those who represent water users’ interests
- Those who are particularly vulnerable/affected by the outcomes
- Representatives from different sectors (agriculture, mining, environment etc.)
- Local to national levels

Pointers from the Fictional Case Study

KONFUNDESIA	AKINONIA
City of Confluence: trade	City of Palmyra: principal economic centre <ul style="list-style-type: none"> ➤ Busiest port in the region ➤ Expansion project = dredging
City of Harponees: fishing	City of Styropolis: port
City of Erambay: trade, Tarpon Canal (navigation), Water port	City of Aichemy <ul style="list-style-type: none"> ➤ Papyrus dam ➤ Agriculture: all for export <ul style="list-style-type: none"> ○ Oilseed ○ Tobacco ○ Fruit ○ Ornamental plants ○ Soybean (monoculture) ➤ livestock
City of Metis: Agriculture (main income) <ul style="list-style-type: none"> ➤ Cotton (Menhir Desert) ➤ Sugar cane – biofuels (Menhir Desert) ➤ Wheat ➤ Potato ➤ Manioc ➤ Tobacco 	City of Etruia: tourism (main income) <ul style="list-style-type: none"> ➤ Archeological site of Sumerostan (World Heritage) ➤ Seals peninsula ➤ Tilapi archipelago
City of Saline: livestock (main income)	Shrouded forest: timber <ul style="list-style-type: none"> ➤ Incentives for plantations – high yield and high water consumption
Chimeras Lake: tourism - Fishing port	Mining (main income): silver, copper, gold

- Sailing	
Shrouded forest	Deep sea fishing: industrialised, export
Energy - Gudi Dam - Edara Dam ➤ Electricity ➤ Seasonal flooding - Biofuels - Nuclear plant - Mining: not highly developed	Tilapi Ethnic group: fishing and collecting mollusks
Conservation organisations representing Nature	Energy: ➤ Papyrus Dam (enlargement project) ➤ Oil derivate power plans in urban centre (imported fuel, high pollution) ➤ Wind energy projects ➤ Upper Sambara Dam Project
	Adonis Swamp: Ramsar site
	Conservation organisations representing Nature

Group Work Exercise 1 – Classifying stakeholders: suggested time 30mins

Create groups, ideally with a mix of participants representing different stakeholders (or nationalities if in a transboundary basin context). Starting from the list of stakeholders generated during the previous exercise, groups will refine the list of relevant basin stakeholders, clustering them into categories as needed (this could be done according to sectors as well as sector of society such as government, private sector, civil society, cooperatives/associations, etc.). These groups will then be classified as directly impacted, representing those impacted or with interests/stakes in water usage changes.

***Note to facilitator:** while all the stakeholders suggested below, might not be mentioned by name in the fictional case study, it is easily imagined that they would exist in such a scenario. Thus, the exercises should not limit itself to only the stakeholders mentioned by name, and participants will often imagine other stakeholders that could be relevant given the context described.*

Debriefing and report back (10mins):

Once the participants have finished the group work ensure that you provide a space for feedback and debriefing to discuss any issues that came up.

Stakeholders mapped by category etc.

	KONFUNDESIA	AKINONIA
International	Other stakeholders with interest / stakes in water usage change	
	- National authorities and Ministries - International development organisations	- National authorities and Ministries - International development organisations

	- Regional Economic Commissions	- Regional Economic Commissions
Regional / National	Representing those impacted by changes in water usage	
	<ul style="list-style-type: none"> - Conservation agencies - Trade unions - Agricultural buyers - RBOs - Port companies 	<ul style="list-style-type: none"> - Conservation agencies - Indigenous peoples organisations - Trade unions - Agricultural buyers - RBOs - Port companies
Local	Directly impacted by changes in water usage	
	<ul style="list-style-type: none"> - Municipalities - Farmers - Herders - Tourism businesses - Electricity businesses - Dam operators - Fishermen - Mining companies - Flood recession farming - Charcoal gathering - Berries / roots / nuts gathering 	<ul style="list-style-type: none"> - Municipalities - Farmers - Mining companies - Timber companies - Electricity businesses - Dam operators - Tourism businesses - Fishermen - Tilpai Ethnic Group - Flood recession farming - Charcoal gathering - Berries / roots / nuts gathering

Group Work Exercise 2 – clustering stakeholders in to typologies: suggested time 30mins

Work with the participants to then cluster the stakeholders into groups or ‘typologies’ of stakeholders. Use the mapping of influence and interest to help guide this as natural clusters might have formed during this exercise. You can leave the post-its mapped from exercise 2 and simply get the participants to write up the groups / clusters on a flip chart next to the mapped stakeholders.

***Note to facilitator:** For the success of the exercise, you do not need to come to the same clusters as we have. Below there are 15 clusters that we have mapped against influence and interest – but anywhere between 8 and 15 would suffice for the exercise.*

Debriefing and report back (10mins):

Once the participants have finished the group work ensure that you provide a space for feedback and debriefing to discuss any issues that came up.

KONFUDESIA	Cluster
Konfudesia national authorities and government ministries: <ul style="list-style-type: none"> ➤ Finance ➤ Foreign Affairs 	Government and key ministries (K)

<ul style="list-style-type: none"> ➤ Business and tourism ➤ Environment ➤ Energy 	
<p>City of Confluence: trade</p> <p>City of Erambay: trade, Tarpon Canal (navigation), Water port</p>	Trade (K)
<p>City of Harponees: fishing</p>	Fishing (K)
<p>City of Metis: Agriculture (main income)</p> <ul style="list-style-type: none"> ➤ Cotton (Menhir Desert) ➤ Sugar cane – biofuels (Menhir Desert) ➤ Wheat ➤ Potato ➤ Manioc ➤ Tobacco <p>City of Saline: livestock (main income)</p>	Agriculture and livestock (K)
<p>Chimeras Lake: tourism</p> <ul style="list-style-type: none"> - Fishing port - Sailing 	Tourism (K)
<p>Shrouded forest</p> <ul style="list-style-type: none"> ➤ Livelihood activities; collecting berries, roots, wood, nuts 	NGOs, CBOs and CSOs (K) <i>(Conservation agencies, indigenous people’s organisations)</i>
<p>Energy</p> <ul style="list-style-type: none"> - Gudi Dam - Edara Dam ➤ Electricity ➤ Seasonal flooding - Biofuels - Nuclear plant 	Energy (K)
<p>Mining: not highly developed</p>	Mining (K)
AKINONIA	Cluster
<p>Akinonia national authorities and government ministries</p> <ul style="list-style-type: none"> ➤ Finance ➤ Foreign Affairs ➤ Business and tourism ➤ Environment ➤ Energy 	Government and key ministries (A)
<p>City of Palmyra: principal economic centre</p> <ul style="list-style-type: none"> ➤ Busiest port in the region ➤ Expansion project = dredging <p>City of Styropolis: port</p>	Trade (A)
<p>City of Aichemy</p> <ul style="list-style-type: none"> ➤ Agriculture: all for export <ul style="list-style-type: none"> ○ Oilseed ○ Tobacco ○ Fruit ○ Ornamental plants ○ Soybean (monoculture) 	Agriculture and livestock (A)

➤ livestock	
City of Etruia: tourism (main income) ➤ Archeological site of Sumerostan (World Heritage) ➤ Seals peninsula ➤ Tilapi archipelago	Tourism (A)
Shrouded forest: timber ➤ Incentives for plantations – high yield and high water consumption	Timber (A)
Mining (main income): silver, copper, gold	Mining (A)
Deep sea fishing: industrialised, export	Fishing (A)
Tilapi Ethnic group: fishing and collecting mollusks	NGOs, CBOs and CSOs (A) <i>(Conservation agencies, indigenous people's organisations)</i>
City of Aichemy: - Papyrus dam Energy: ➤ Papyrus Dam (enlargement project) ➤ Oil derivate power plans in urban centre (imported fuel, high pollution) ➤ Wind energy projects ➤ Upper Sambara Dam Project	Energy (A)
Adonis Swamp: Ramsar site	NGOs, CBOs and CSOs (A) <i>(Conservation agencies, indigenous people's organisations)</i>

Short exercise in pairs/plenary: suggested time 15mins

Question 2 – Ask the participants: “What happens when some stakeholder groups are overlooked?”

To continue the thought process among the participants, after the various typologies of stakeholders have been presented, this question could be asked, for responses in plenary or in small groups– this can be done in with the participants in pairs or in plenary for 5-10mins:

Possible answers:

- Stakes and interests can also be overlooked = benefits and impacts (costs) are overlooked
- The relative size of benefits and impacts may be overlooked
- Distributional impacts are not adequately assessed
- Results are less equitable
- There is less buy-in to the resulting agreement
- Disagreements/conflicts can arise
- Legitimacy of process may be questioned

It's important to spend some time discussing these inclusion /exclusion challenges and to focus on the long term consequences of processes that disable or enable stakeholders to participate. Get the participants to consider why some stakeholders are more active and others are not - often the enabling environment does not provide adequate engagement and participation options or there are gaps in capacity that make it challenging for certain groups to meaningfully participate (e.g. including but not limited to financial restraints, time restraints, child care

issues (particularly women), transportation restraints. Furthermore, institutional mandates can formally exclude actors from participating as roles and responsibilities do not allow for or encourage active engagement.

Note to facilitator: Based on this discussion – ask the participants if they feel they have something to add to, or wish to review in their stakeholder tables before the next exercise.

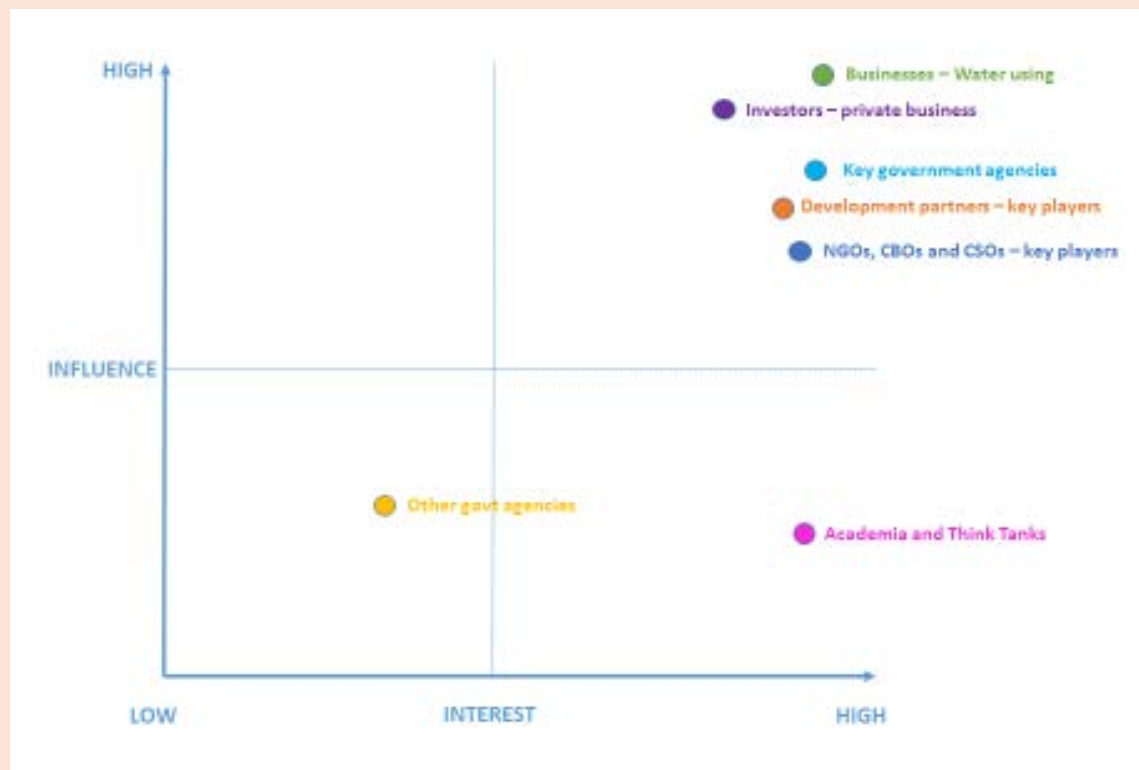
Group Work Exercise 3 - interest/influence stakeholder mapping: suggested time 60mins

Prepare one big piece of paper with the interest influence matrix and ask the participants to take their post-it notes from the previous session, and map each stakeholder according to their perceived power in the basin and their level of interest in the outcomes of governance and management decisions taken in the basin.

Questions that can be used to assess different stakeholder categories in terms of their potential contribution, power/influence and interest in relation to different stages include:

- Does this group have broad relevance and representation at a local level?
- What is the perceived and likely degree of its impact?
- How much influence does it have over management processes?
- What contribution (e.g., insight, data, and management capability) might it make to the process and to management outcomes?

Please find an example below of stakeholders mapped by interest and influence.

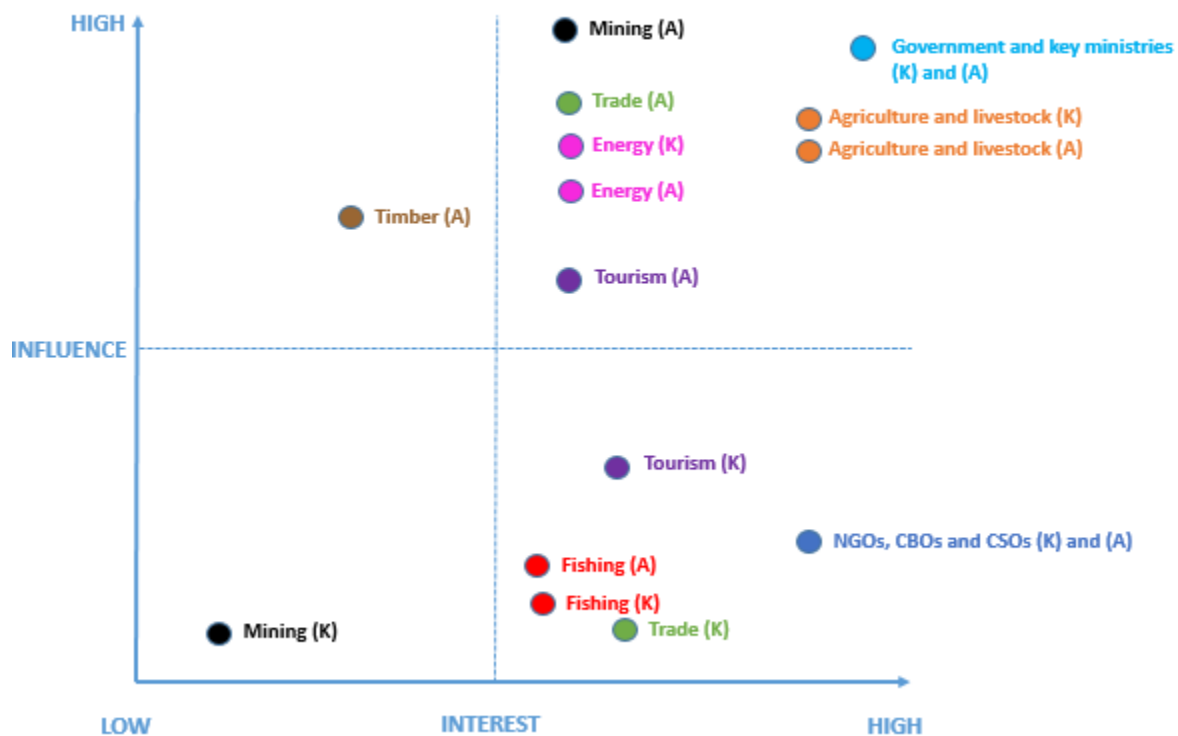


Debriefing and report back (15mins):

Suggestions for issues to be discussed in plenary (or in groups again) – **add another 30 minutes for discussing these issues in pairs or in plenum**

- Should all relevant stakeholders be included throughout the process of decision-making around existing or new planned basin developments, or should they be included at different stages; planning, inception, implementation, closing, evaluation?
- How can we engage vulnerable groups: indigenous people, women and youth; what measures can be taken to ensure their informed participation?
- What would make the level of power and interest change for stakeholders? What would the drivers be? Think about the fictional case study but also examples from other basins that you know of that are relevant here.

Example of perceived influence vs. interest mapping based on the fictional case study



STEP 2 - Identifying the range of existing and potential benefits

Group work Exercise 1 – Mapping existing benefits: suggested time: 20 minutes

Ask participants to map the existing benefits using the table on slide 6 in the template Powerpoint slides.

Report back – 10mins

Get each group to briefly report back on their work.

BENEFITS	
<p>Economic benefits</p> <p>Agriculture and livestock Fishing Tourism Mining Timber Energy</p>	<p>A. Direct and tangible benefits: can be measured</p>
<p>Social benefits</p> <p>Cultural Identity through World Heritage Sites Tilapi Ethnic Group Livelihoods</p>	
<p>Ecosystem benefits</p> <p>Flood control Natural flows to sustain freshwater biodiversity, lowland ecosystems and local livelihoods (flood recession farming). Local biodiversity</p>	
<p>Regional Economic Cooperation benefits</p> <p>Increased trade</p>	<p>B. Indirect and intangible benefits: qualitatively assessed</p>
<p>Peace and Security benefits</p>	

Group work Exercise 2- identify the development alternatives and other options in the basin: suggested time 30 minutes
Participants to 15 – 20 minutes to read and analyse de Conflict Scenarios (text for handouts is found in the annexes of this document) and choose the three scenarios that are the most feasible for the development of the basin. Decided in plenum the three scenarios that most people agree are the most beneficial and use these as basis for exercise 3.

To exemplify for exercise, we have used the following options from the non-cooperation scenarios:

- 1) (4) Edara Dam Project (planned)
- 2) (5) Biofuels in the Metis Autonomous Region (planned)
- 3) (9) The Papyrus Dam (planned)

Group work Exercise 3 - Mapping potential benefits: suggested time 45 minutes
Ask participants to map the potential benefits using the table on slide 7 in the template Powerpoint slides. These potential benefits can be related to the possible developments in the basin. Stakeholders are welcome to discuss

real potential developments for the sake of the exercise or suggested options can be presented as a way to just get people thinking through the range of benefits under different future scenarios.

Debriefing and report back: - suggested time: 20mins

Ask the participants to report back briefly on their group work exercises then work through some questions in plenary:

1. Which stakeholder groups benefit from existing and potential benefits? Equally, which groups don't benefit or stand to lose?
2. What is the process for allocating costs and benefits?

Based on the three options chosen above – this is how our potential benefits look mapped out

POTENTIAL BENEFITS	
<p>Economic benefits</p> <p>Cheaper electricity Cheaper fuels (biofuels) Lager irrigated/cultivation territory</p>	<p>A. Direct and tangible benefits: can be measured</p>
<p>Social benefits</p> <p>Electric power provision assured Fuel assured</p>	
<p>Ecosystem benefits</p> <p>Flood control</p>	
<p>Regional Economic Cooperation benefits</p> <p>Facilitated trade</p>	<p>B. Indirect and intangible benefits: qualitatively assessed</p>
<p>Peace and Security benefits</p>	

And what would the costs be?

- Akinonia lodged a formal protest demanding that the Edara Dam project is halted
- Affect the flows of the Mumbara River
- Extensive irrigation (pollution, erosion, in-efficiency)
- Flooding area for filling the reservoir affects the Tarpon Canal
- Affect geographical limits between the two countries
- Diseases vector reservoir (malaria, dengue, yellow fever)
- Konfundesia expressed a formal concern against the enlargement of the Papyrus Dam

Group work exercise 4 – Linking stakeholders to benefits: suggested time 45mins

Link the stakeholder mapping outputs from Step 1 to the identified potential benefits – see template on slide 9. This exercise is a good way of getting participants to think through the distribution of benefits between different stakeholders groups and helps to prepare for Step 3.

Report back - suggested time: 10-15mins
Get each group to briefly report back on their work

Stakeholders	Benefits / Costs						
	Cheaper electricity	Cheaper fuels (biofuels)	Larger irrigated/cultivated on territory	Electric power provision assured	Fuel assured	Flood Control	Facilitated trade
Trade	Operational costs could lower Increased capacity	Operational costs could lower Increased capacity	More exports	Secure investments, more profit	Secure investments, more profit	Secure investments, avoided costs	Expansion of regional relations and cooperation New markets
Agriculture and livestock	Operational costs of irrigation systems could lower Options for industrializing and added value could be developed	Expansion of agricultural activity Operational costs of irrigation systems could lower Options for industrializing and added value could be developed Monocultures for biofuels have adverse effects on biodiversity and social resilience	Expansion of agricultural activity Lower production costs Extended irrigation is known for its inefficiency, pollution to water through runoff and soil erosion	Secure investments, more profit	Secure investments, more profit	Secure investments, avoided costs	Expansion of regional relations and cooperation New markets

Stakeholders	Benefits / Costs						
	Cheaper electricity	Cheaper fuels (biofuels)	Lager irrigated/cultivation on territory	Electric power provision assured	Fuel assured	Flood Control	Facilitated trade
Fishing	Operational costs could lower Options for industrializing and added value could be developed	Operational costs could lower Options for industrializing and added value could be developed	Soil erosion and sediment outtran could cause pollution that can affect fisheries.	Secure investments, more profit	Secure investments, more profit	River pulse and connectivity could be altered if flood regime is not taken into account properly	Expansion of regional relations and cooperation New markets
Tourism	Operational costs could lower	Operational costs could lower	Greater pressure on natural ecosystems that could be a touristic site	Secure investments, more profit Increase site offer as new facilities could be developed	Secure investments, more profit	Secure investments, more profit	Secure investments, more profit Business travel / tourism could be developed
Mining	Operational costs could lower Options for industrializing and added value could be developed	Operational costs could lower	Water demand for agriculture could increase, leaving less water available for industrial activities.	Secure investments, more profit Increase site offer as new concessions could be developed	Secure investments, more profit	Secure investments, more profit	Secure investments, more profit New markets
Timber	Operational costs could lower Options for industrializing and added value could be developed	Operational costs could lower Options for industrializing and added value could be developed	Greater pressure and land use change	Secure investments, more profit	Secure investments, more profit	Secure investments, more profit	Secure investments, more profit New markets

Stakeholders	Benefits / Costs						
	Cheaper electricity	Cheaper fuels (biofuels)	Larger irrigated/cultivation on territory	Electric power provision assured	Fuel assured	Flood Control	Facilitated trade
Energy	More income as more clients can join the network	Diversified grid is more resilient	Increased pressure	Secure investments, more profit	Secure investments, more profit	Secure investments, more profit	Secure investments, more profit
Maintenance of Ethnic Groups Livelihoods	Basic needs met	Basic needs met	Impact on traditional livelihoods Food sovereignty	Social security and good relations	Social security and good relations	Avoided costs	Secure investments, more profit New markets
Cultural identity through World Heritage Site			Increased pressure for land use change			Avoided costs	Secure investments, more profit More visitors
Biodiversity Conservation in Ramsar Site	Water flows altered because of dam construction		Increased pressure for land use change and water demands Increased sedimentation and pollution			River pulse and connectivity could be altered if flood regime is not taken into account properly	

Stakeholders	Benefits / Costs						
	Cheaper electricity	Cheaper fuels (biofuels)	Larger irrigated/cultivation on territory	Electric power provision assured	Fuel assured	Flood Control	Facilitated trade
Ecosystems conservation	<p>Water flows altered because of dam construction</p> <p>Diseases vector due to still water in dam</p> <p>Urban areas – oil derives power plants could be replaced with less pollutant energy</p>	Monocultures have a negative impact on biodiversity	Increased pressure for land use change and water demands			River pulse and connectivity could be altered if flood regime is not taken into account properly	

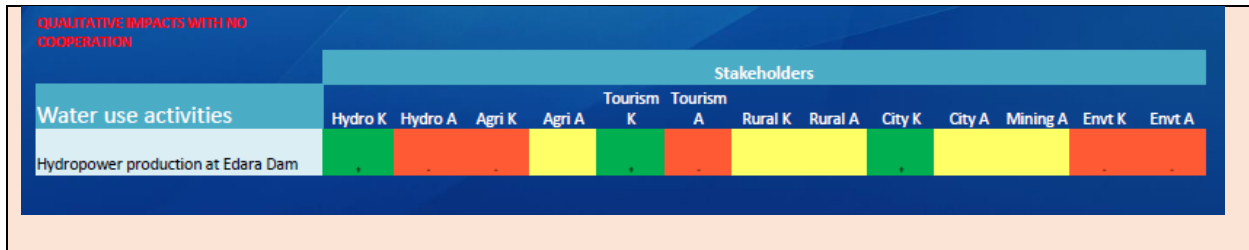
STEP 3 - Building benefit enhancing scenarios

Group work exercise 1: Populate the spreadsheet – suggested time 2 hours

Divide the participants into groups of 5-7 people. Each group should be given a blank matrix to fill in. Prepare the participants by asking them to bear in mind the following points when working through the fictional case exercise:

- Water use activities may have positive or negative impacts (externalities) on other water users
- A first step consists of examining the balance of positive and negative impacts across different activities / sectors in a shared basin
- How can joint changes in water management enhance benefits for the largest number of stakeholders (and in the transboundary case: for the riparian countries?)

Then using the prepared excel spreadsheet template in the materials pack, get participants to start inputting the benefits, costs and the sectors that remain neutral (not concerned) by the infrastructure building activity (as per this fictional case). See the example below.



For this exercise – you will need spreadsheet 1 called: *STEP 3 – exercise 1* available where you downloaded this training package.

Exercise: Konfundesia and Akinonia projects NO COOPERATION

Water use activities	Stakeholders											Net number of impacts per project
	Hydro K	Hydro A	Agri K	Agri A	City K	City A	Envt K	Tourism A	Fish A	Cult A		
Hydropower production at Edara Dam												0
Biofuel expansion in Metis												0
Hydropower production at Papyrus Dam												0
Net number of impacts per stakeholder	0	0	0	0	0	0	0	0	0	0	0	
Aggregated net number of impacts:	Konfundesia 0		on individual stakeholders (positive) ?									
			on individual stakeholders (negative) ?									
	Akinonia 0		on individual stakeholders (positive) ?									
			on individual stakeholders (negative) ?									

Instructors explain that there are 2 slightly different scenario streams: one for presentation and one for exercise. The latter is simplified version of the former with a new entrant: biofuel production. Explain that Environment A is broken down into ecosystem services to cultural services, fisheries and tourism.

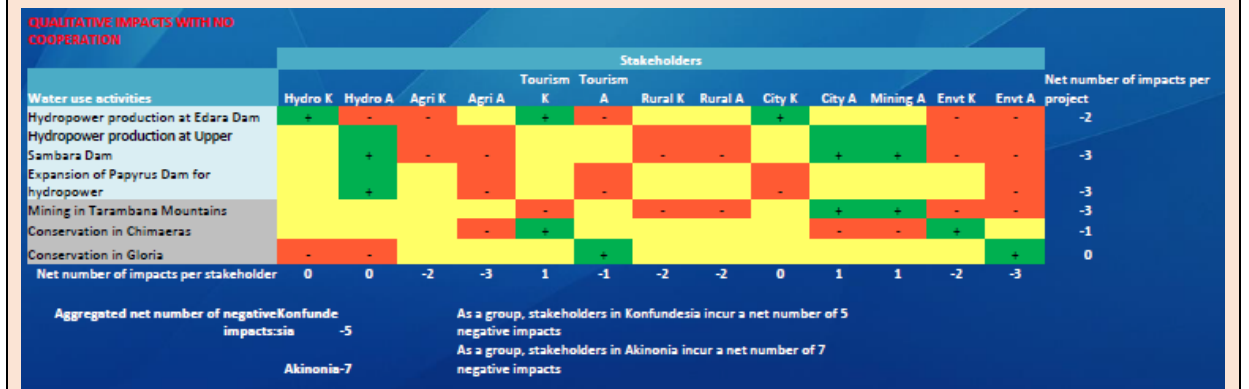
Participants are asked to figure out:

- (1) the qualitative impacts of each project on each of the stakeholder groups
- (2) the cumulative impacts incurred per project and per stakeholder
- (3) the cumulative impacts on each country, and
- (4) how many stakeholders across the two countries come out with a larger number of positive or negative impacts.

Then prompt the participants to add additional water interventions to the excel sheet for an overview of “best” and “worst” options as per the example below and available on the Powerpoint slide templates. Try to incorporate these interventions into the matrix in an upstream-downstream logic to reflect the interdependence and cause-effect linkages of all water related activities.

The impacts from each water basin intervention to each stakeholder- the cell scores - could be analysed in a scale from positive (+), neutral (0) to negative impact (-). Finally, get the participants to sum the impacts per water intervention (rows) and impacts per stakeholder cluster (columns) to understand the net number of negative impacts.

Option: you can also add the net number of impacts per country when dealing with transboundary basins.



To facilitate the interpretation of the Matrix, cells that score benefits are marked with a “+” sign and coloured green. Costs or negative impacts are marked with a “-” sign and coloured red. Neutral impacts are coloured yellow. This way, when comparing difference sets of projects or concessions granted through negotiation, it is easier to identify the development scenario that has the most positive outcome (the greener one).

Exercise: Konfundesia and Akinonia projects NO COOPERATION

Water use activities	Stakeholders										Net number of impacts per project	
	Hydro K	Hydro A	Agri K	Agri A	City K	City A	Env K	Tourism A	Fish A	Cult A		
Hydropower production at Edara Dam	+	-	-	-	+	-	-	-	-	-	-	-5
Biofuel expansion in Metis	-	-	+	-	+	-	-	-	-	-	-	-2
Hydropower production at Papyrus Dam	+	+	-	-	+	-	-	-	-	-	-	-3
Net number of impacts per stakeholder	1	0	0	-3	1	1	-2	-3	-3	-2		
Aggregated net number of negative impacts:	Konfundesia 0 As a group, stakeholders in Konfundesia incur a net number of 0 negative impacts Akinonia -10 As a group, stakeholders in Akinonia incur a net number of 10 negative impacts											
Impacts on individual stakeholders in	Konfundesia 2 Stakeholders incur a larger number of positive than negative impacts; 1 stakeholder incurs a larger number of negative impacts. Impacts for 1 stakeholder balance out. Akinonia 1 Stakeholder incurs a larger number of positive than negative impacts; 4 stakeholders incur a larger number of negative impacts. Impacts for 1 stakeholder balance out.											
Impacts on individual stakeholders	Overall 3 Stakeholders incur a larger number of positive than negative impacts; 5 stakeholders incur a larger number of negative impacts. Impacts for 2 stakeholders balance out.											
	Participants are now asked to figure out what kinds of alternative water management scenarios can be adopted to improve outcomes for the various individual stakeholders and for the two countries: what measures can be taken?											

Group work Exercise 2: how to enhance benefits through cooperation – suggested time 4 hours

In the same groups, get the participants consider stumbling blocks to cooperation and to discuss cooperation alternatives, such as the selling of the energy from the existing hydropower dam to the nearby urban cities, and mining activities, avoiding the need to build a second hydropower dam on the river etc. Include the changed benefits / costs in the excel sheet and compare and contrast the number of beneficiaries and those being negatively affected. The objective is to identify measures that can enhance the benefits to the most stakeholder clusters - to turn the matrix as green as possible! During the exercise we would suggest spending sometime identifying how different stakeholders may be affected by the proposed alternatives and identifying tension points, then going on to discuss the measures that enhance benefits the most (i.e. that are most beneficial to the most inclusive group of stakeholders).

QUALITATIVE IMPACTS WITH BENEFIT SHARING

Water use activities	Stakeholders												Number of net impacts per project	
	Hydro K	Hydro A	Agri K	Agri A	Tourism K	Tourism A	Rural K	Rural A	City K	City A	Mining K	Mining A		Cult A
Hydropower production at Edara Dam with reoperation	+	-	-	-	+	-	-	-	+	+	+	-	-	0
Hydropower production at Upper Sambara Dam	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Expansion of Papyrus Dam (w/improved operations)	-	+	-	-	+	-	-	-	+	-	-	-	-	2
Mining in Tarambana Mountains with pollution mitigation	-	-	-	-	+	-	-	-	+	+	+	+	+	7
Conservation in Chimaeras	-	-	-	-	+	-	-	-	-	-	+	+	+	-1
Conservation in Gloria	-	-	-	-	+	-	-	-	-	-	-	+	+	0
Wind Farm in Sumerostan Peninsula	-	-	-	-	-	-	-	-	-	+	+	-	-	1
Net number of impacts per stakeholder	0	-1	-1	-2	3	1	1	1	2	2	2	1	1	-1
Aggregated net number of impacts:	Konfundesia 6 As a group, stakeholders in Konfundesia incur a net number of 2 positive impacts Akinonia 3 As a group, stakeholders in Akinonia incur a net number of 2 positive impacts													

Debriefing and report back – suggested time 40mins

Ask the participants to present back the highlights from their group discussions – the challenges and solutions! This can be a helpful exercise, in particular for the practitioner, as this will provide insights into how the stakeholders in the room approached the discussions and why they came to the decisions, they made. This can enrich the practitioner’s understanding of stakeholder’s relationships and decision drivers.

This is also the time to further discuss, if desired by the stakeholders, the next steps and information needed to progress into carrying out a real application using the BOAT.

WITH BENEFIT SHARING

	Stakeholders										Net number of impacts per project
	Hydro K	Hydro A	Agri K	Agri A	City K	City A	Envt K	Tourism A	Fish A	Cult A	
Water use activities											
Enlarged hydropower capacity at Edara Dam & reoperated	+	-	-	+	+	+	+	+	+	+	5
Biofuel expansion in Metis	+	+	+	-	+	+	-	-	-	+	-2
Removal of Papyrus Dam & drainage of reservoir	+	-	+	+	+	+	+	+	+	+	5
Net number of impacts per stakeholder	1	-2	0	1	3	1	0	1	1	2	

STEP 4: Estimating costs and benefits from future scenarios

Group work exercise 1 – Adding Value to the Costs and Benefits Identified – suggested time 2 hours

Ask participants to populate the matrix from Step 3 with values using the fictional case materials – see annex 4. This should be a simple matching exercise that adds an additional layer of information to the options presented in the matrix in step 3.

Then the participants need to calculate the final column of the quantification matrix which presents a Benefit/Cost calculation for each water intervention (row). This means it will sum all positive values and divided them to all de negative values (absolute values). If the result is higher

than 1, the project is deemed beneficial; a higher number would be the best option. If the result is equal or lower than one, the project will bear more costs than benefits.

Debriefing - How to interpret the results?

Provide adequate time to allow participants to digest and discuss the results, as an economic lens often can skew previously agreed scenarios!

LIST SOME GUIDING QUESTIONS?

- How might the economic assessment influence different stakeholder groups (especially those with decision-making power)?
- Which stakeholder groups are most likely to lose out if decisions are made purely on economic grounds?
- What arguments can be made to skew decisions towards developments that are less economically beneficial but that are considered most beneficial to stakeholders involved in the process?
- What considerations/principles could support the development of negotiation processes that are fair and equitable?

For this exercise – you will need spreadsheet 2 called: *STEP 4 – exercise 1* available where you downloaded this training package.

Water use activities	Stakeholders										Benefits	Cost	Benefit/ Cost
	Hydro K	Hydro A	Agri K	Agri A	City K	City A	Envt K	Tourism A	Fish A	Cult A			
Enlarged hydropower capacity at Edara Dam & reoperated	100	-50	-20	30	100	0	20	20	20	20	310	70	4.4
Biofuel expansion in Metis	0	0	-20	-15	20	0	-10	-10	-10	0	40	45	0.9
Removal of Papyrus Dam & drainage of reservoir	0	-20	0	10	10	10	0	15	5	5	55	20	2.8
Benefit	100.00	0.00	20.00	40.00	130.00	10.00	20.00	35.00	25.00	25.00			
Cost	0.00	70.00	20.00	15.00	0.00	0.00	10.00	10.00	10.00	0.00			
Benefit/Cost	100.0	0.0	1.0	2.7	130.0	10.0	2.0	3.5	2.5	25.0			
Konfundesia Benefit/Cost Analysis													
Akinonia Benefit/Cost Analysis													
Scenario Benefit/Cost Analysis		3.00											
<p>Again, the incidence of negative impacts is less overall, but need valuation of benefits and costs to know exactly how much stakeholders are affected, in terms of derived benefits. Also, what compensation mechanisms might help to lessen net negative impacts?</p> <p>Here participants are asked to consider how to add compensation measures to address environmental impacts to Akinonia from incremental operation of Edara dam due to cooperation. One solution would be for Akinonia to pay for irrigation efficiency measures in the Bio fuels ag sector, thus allowing for reduced water withdrawals from the river to compensate greater disruption from Edara dam expansion.</p> <p>This scenario is quantified (i.e., values assigned to benefits and costs, see new handout 2.6B4b) then compensation measures are negotiated</p>													

STEP 5 – Negotiation of benefits

Group work exercise: Negotiating an Agreement on Benefit Sharing

Participants are put in groups and given the following instructions:

You are a member of your country’s delegation tasked with negotiating an agreement for Benefit sharing between Konfundesia and Akinonia in the Takong basin. Recall that you have worked with your counterpart riparians to establish that the Base Case of non-cooperation was *not* advantageous to most stakeholders in either country.

The Table provides a detailed listing of the benefits that each country seeks to achieve, their specific beneficiaries, and measures each country can take to achieve those benefits.

There is now a *possible agreement* for cooperation on a set of projects and water management solutions, which you are weighing:

Note to Facilitator: *the exercise should, if possible, consider the different sectors and stakeholders, not only the countries, this will make the exercise much richer. Depending on the size of the group this should be possible, so the role exercise would have representatives of each stakeholder group/sector.*

POSSIBLE AGREEMENT between Konfundesia and Akinonia to share benefits from the Mumbara River:

- **Konfundesia** will construct the Edara Dam on the Mumbara River with an enlarged hydropower capacity. It will negotiate a long-term agreement with Akinonia to provide it with power from this dam.
- **Akinonia** will remove the Papyrus Dam and drain the Papyrus Reservoir

Your task as a member of your country delegation is to determine whether the possible agreement is of interest to your country. In doing so, you will seek to:

- Maximize tangible and intangible benefits for your country
- Minimize costs
- Maximize the number of stakeholders coming out better off in your country

In order to proceed with this Possible Agreement, the parties have commissioned a study to provide an estimated valuation of benefits and costs to be incurred by each country, shown in Table 1 below. (For details on benefits and costs per activity, refer to Table A).

Table 1. Benefits and Costs to Konfundesia and Akinonia under Possible Agreement

	Konfundesia	Akinonia
Benefits	(1) Revenue to the hydropower sector from the sale of electricity (2) Electricity self-sufficiency for Konfundesia (3) Long-term contract and revenue for sale of hydropower to Akinonia (4) Lower maintenance costs for the Tarpon canal for the city of Estambay, due to the elimination of the Papyrus reservoir (5) Lower incidence of water-related disease for the city of Estambay, from elimination of Papyrus reservoir	(1) Saved construction costs for the Papyrus Dam to provide electricity for the city of Styropolis (2) Savings from no operation and maintenance of Papyrus dam (3) River navigation to upstream cities (4) Environmental flows in Akinonia are improved from removal of Papyrus dam <i>Total benefits estimated at: \$480</i>

	Total benefits estimated at: \$ 1100	
Costs	(1) Construction of EDARA dam (2) Cost of enlarged hydropower generation capacity <p style="text-align: right;">Total costs estimated at: \$600</p>	(1) Demolition of the Papyrus reservoir (2) Lost electricity revenue from the Papyrus Dam (3) Cost of electricity purchase from EDARA plant (4) Loss of environmental flows and corresponding economic and cultural benefits (5) Energy dependency (losing self-sufficiency) <p style="text-align: right;">Total costs estimated at: \$640</p>

Each delegation will convene to deliberate on the following questions before returning to the plenary for Round 1:

- In each country, which stakeholders stand to gain, and which stand to lose?
- Is this possible agreement satisfactory in light of these benefits and costs, and keeping in mind your country may seek additional benefits?
- What are some additional measures/actions that you would propose to make this a better agreement for stakeholders in your country?

During **successive rounds**, you are free to identify additional potential benefits, costs and compensation mechanisms to help yield better outcomes.

Annexes

Annex 1 – Konfundesia Fact Sheet

KONFUNDESIA

Size: 200,000 km²

Boundaries: North with Derumalia, east with Akinonia, west with Thinessia, south with the Fathomless Sea.

Capital: Confluence

Population: 14.5 million

GDP per capita: US\$5,200

GDP Composition by Sector: agriculture, 70%; industry, 27%; services, 3%.

Agricultural Products: cotton, wheat, potatoes, manioc, tobacco, sugarcane, livestock production.

Industries: fishing and fish processing, meatpacking, biofuels production.

Services: tourism.

Natural Resources: fresh water, fish.

Urbanization: 54 %

Climate: subtropical in the lowlands, temperate in the mountains.

Geography: Approximately 70% of Konfundesian territory is flat, and half of this area is wetlands. The remainder is semi-arid or desert. The other 30% of the country is the mountainous area of the Tarambana Mountains. The country has a wide range of ecosystems from alpine to seacoast, including cloud forests, alluvial plains, intermontane plateaus, and semi-arid areas.

The principal geographical features in the Takong River Basin include:

- *Chimaeras Lake*, internationally recognized for its size and natural beauty. It is attractive to tourists due to its beauty and the availability of recreational activities such as sailing and sport fishing. Nonetheless, it has not seen the development of larger-scale tourist infrastructure.
- *The Shrouded Forest*, which contains the last vestiges of an ecosystem endangered by its division into unsustainable parcels and by timbering and mining activities. Most of this region is a Biosphere Reserve. A national park was established in the most densely forested region, southeast of Pingimanjaro. Among the many benefits of this ecosystem are that it regulates water flow in the river basin, it protects the communities north of Lake Chimaeras from landslides, and provides scenic beauty.
- The Menhir Desert, an arid region in the western part of the country.

Flora and Fauna: rare ghost shark, seals and whales along the coast, eagles, reptiles, felines.

History: The most widely held theory holds that Konfundesian society descended from the ancient civilization of the Sumerostanis. Humali Arkat III, the current monarch of Konfundesia, considers himself a direct descendent of Sumerostani civilization.

The historical nucleus of Sumerostan and its principal archaeological antiquities are located in what is today's Akinonia, on the peninsula between Astonishing Bay and the Etruria Bay. Studies carried out by the School of Archaeology of the University of Estambay indicate that Sumerostani civilization had much in common with the Tilapi people, who inhabit the islands of the Takong Delta, and claim to have been the originators of the Sumerostani culture. This view is upheld by the royal court in Konfundesia, which generally supports demands made by the Tilapi against the Akinonian government in Palmyra.

Political Organization: Konfundesia is a constitutional monarchy divided into five autonomous regions by the provisions of its 1932 Constitution. Domestically, the monarchy is a force for cohesion, uniting the country's different ethnic groups and its original provinces, which are now known as autonomous regions. Looking outward, it represents the country on the international stage.

The king opens parliamentary sessions and invests the prime minister with his authority as head of government. Despite this limited participation in governmental functions, the

monarch is widely respected and even venerated by the majority of the population.

Konfundesian domestic politics are defined by a two-party system. The social democrats, organized as the Konfundesian Liberal Party, are currently in a governing coalition with the Green Party. The opposition is composed of conservative groups organized into the Konfundesian Union.

Territorial Organization: Authority is decentralized. The country is divided into five autonomous regions: Harpooners, Metis, Upper Mumbara, Chimaeras, and Tarambana.

Major Cities: The main Konfundesian cities in the Takong River Basin are:

- **Confluence**, the capital city. With nearly 2 million inhabitants, it is the kingdom's largest city. It is strategically important due to its location at the confluence of two rivers, the Takong and the Mumbara. Through this port city people, goods, and services arrive and depart from the kingdom.
- **Estambay**, the second largest cities with a population of more than 1 million. An important port, it is located at the center of Astonishing Bay and is the gateway to the Tarpon Canal, connecting the Fathomless Sea with the Takong River. It serves as the principal point for ingress and egress of sea and river freight transport. Construction is underway to make Estambay a deep-water port.
- **Harpooners**, an ancient coastal city located on Sunset Bay, now the center of the fishing industry.

- **Citadel of Metis**, in the Menhir Desert, the driest region of the country, has grown in importance in recent years due to the increased cultivation of cotton and the large-scale introduction of sugarcane and other crops for the production of biofuels.
- **Saline**, the capital of the Chimaeras Autonomous Region and an important city thanks to its location close to the border with Akinonia on the route that connects the capital cities of the two countries. It is in the country's major livestock area.

Civil Society: The constitution intends to promote public participation in the decision-making process through an organized civil society, nongovernmental organizations, universities, and research groups. It recognizes the rights of indigenous peoples to self-determination with respect to the use of their resources. Nevertheless, and despite the administrative decentralization of the country and of the management of natural resources, implementing citizen participation has been difficult. There is an NGO, with international sponsorship, organized to protect Chimaeras Lake from mining pollution.

Water/ environment-related Legislation: The 1994 amendments to the 1932 Constitution included a new article that established that "all persons have a right to a healthy and ecologically balanced environment appropriate for the development of life in all of its aspects."

The Kingdom lacks modern legislation pertaining to the natural environment.

Nevertheless in the last five years and with the technical assistance of several international organizations, the country has undertaken a

slow process of revising and amending its environmental legislation, attempting to identify overlapping jurisdictional and institutional powers and responsibilities as well as legislative lacunae.

The following laws serve as a basis for the management of natural resources:

- **General Law on Renewable Natural Resources of 1977**, which does not include specific provisions establishing instruments for tasks such as carrying out Environmental Impact Assessments (EIA), a deficiency that has generated criticism from various sectors.

- **Water Law of 1964**, which has a development orientation and does not provide for integrated water resources management. A new text providing for modernization has been debated in the national parliament for the last 10 years but has not been approved due to resistance from powerful groups that favor decentralizing water management and devolving authority to the municipalities of each of the autonomous regions, as well as those that favor privatizing services.

- **Forest Code of 1973** establishes that the national parks and protected areas are inalienable and categorizes the reforestation and preservation of wooded areas as a matter of national interest. This law includes a special provision that recognizes the existence of indigenous communities, and reaffirms, albeit incompletely, the constitutionally recognized right of these communities to self-determination with respect to their land and other resources.

To a greater or lesser extent, each of the autonomous regions has developed its own legislation relative to natural resources, which in some regions, is more advanced than the national legislation. Although the management of natural resources is decentralized, various matters are decided in the capital, particularly inter-jurisdictional questions like those involving water resources.

Water-Related Administrative Structure: The institutional framework for the management of natural resources is under the authority of the Ministry of Sustainable Development, the Environment, and Energy, based in the national capital. Nonetheless, each of the autonomous regions has its own authority of the environment and/or natural resources.

Weaknesses of Legal and Policy Framework: Although the Kingdom has been modernizing its environmental laws, it has not yet achieved consistency between the new laws and the administrative set up. Thus administrative regulations do not always reflect the intent of the new laws.

International Agreements: The Kingdom of Konfundesia belongs to the United Nations and is a party to the most important of the multilateral environmental conventions including the Convention on Biological Diversity, United Nations Framework Convention on Climate Change, World Health Organization, Convention on Wetlands of International Importance, Convention Concerning the Protection of the World Cultural and Natural Heritage, Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Convention on the Conservation of Migratory Species of Wild Animals, and the

United Nations Convention on the Law of the Sea.

Water-Related Issues: Alleged pollution of Chimaeras Lake by mining wastes; threats to marine mammals from dredging in Astonishment Bay; disputes with Akinonia over issues related to the Tarpon Canal and the expansion of the Papyrus Dam; need for irrigation water in the Menhir Desert.

Energy: The energy sector is managed by the Konfundesian Electric Agency of (KEA), an autonomous state body organized within the Ministry of Agriculture, Livestock, and Fishing. Most of the country's energy is hydroelectric and is generated at the Gudi Dam, located on the upper Takong River downstream from its confluence with the Tarambana and Desperation Rivers. In the context of economic expansion, the energy sector has felt pressure to seek alternative sources, one of which is the expanding biofuels sector, which is experiencing rapid growth in the Metis and Upper Mumbara Autonomous Regions. Another option is the construction of the proposed **Edara Dam** on the upper Mumbara, which would be about the same size as the **Gudi Dam**. It would serve both to provide electrical energy and to control flooding during the seasonal ice melt. Environmentalists and much of civil society have pointed out the possible negative effects of this project on the environment, however, particularly in the southernmost wooded areas of the Shrouded Forest.

Transportation/Infrastructure: Ten years ago the government inaugurated the Tarpon Canal, a direct aquatic route between the Fathomless Sea and the Takong River. The canal was a project of the Second National Development Plan (NDP II).

By facilitating navigation between the sea and the river, it has become one of the most important factors in the kingdom's economic performance.

Since the canal opened, the city of **Estambay** has become the country's most important port, and work has now begun to make it a **deep water port**. However, this successful economic expansion has not come free of problems. The city's population has grown considerably due to migration from the countryside, and the city has not been able provide its many new inhabitants with sufficient housing or jobs.

The road system is inadequate and incomplete, covering only the southern part of the river basin. There are proposals to build a highway between the cities of Saline and Estambay and another to connect Estambay with the capital. Highways are administered by the Konfundesian Secretariat of Highways (KSH), although in recent years half of the system has been ceded in concession to a private firm in response to recurrent deficits incurred by the sector.

Its **railroads** were once a point of pride for the Kingdom of Konfundesia, but they are now in inexorable decline. The poor condition of passenger and freight lines as well as passenger stations and freight terminals nearly led to their being shut down, a fate that was avoided thanks to the pressures of the Green Party and the opening of a line of credit to save the sector from ruin. The government now proposes to renovate and maintain existing rail lines, particularly for passenger transportation.

Economy: Konfundesia is a developing country. With a diversified economy based on farming,

livestock production, fishing, and tourism, it has the greatest purchasing power in the region. Its principal economic activities are farming and livestock production, which are practiced in the autonomous regions of Upper Mumbara, Metis, and Chimaeras. Its main crops are cotton, wheat, potatoes, manioc, tobacco, and sugarcane.

Agriculture: Agriculture brings in the highest share of GDP. The main crops grown for export are cotton, wheat, potatoes, manioc, and tobacco. Sugarcane is currently being widely developed for use in the incipient but growing biofuel industry, especially along the middle reach of the Takong.

The government has proposed a "Development and Irrigation Plan for the Greater Menhir Arid Region" (DIPGMAR) to irrigate the cotton crops on the periphery of the desert.

Much of the country's livestock production is concentrated in the area bordered on the west and south by the Takong River, on the east by the Sambara, and on the north by Chimaeras Lake.

Additionally, a mountain community inhabits the upper valley of the Takong River, where they predominantly live on free-range livestock. The natural landscapes of these mountains, however, are increasingly being cleared for conversion to pasture, which is a major **land use change** activity.

Mining: The mining sector is not highly developed. Recently, the country proposed mineral exploration by private consortia in the Upper Mumbara and Tarambana Autonomous Regions.

Tourism: The principal tourist destinations are Chimaeras Lake and the Shrouded Forest area, particularly Purple Eagle National Park and Mount Pingimajaro. The tourism sector has grown for the last 15 years and now constitutes an important source of foreign exchange for the country, although not to the degree hoped for by the Ministry of Tourism, which has endeavored to attract private-sector financing for its improvement and expansion.

AKINONIA

Size: 123,745 km²

Boundaries: Borders on the north with Derumalia, on the west with the Kingdom of Konfundensia and on the south and east with the Fathomless Sea.

Capital: Palmyra

Population: 9.5 million

GDP per capita: US\$4,200

GPD Composition by Sector: agriculture 70%; industry 10%; services 20%.

Agricultural Products: oilseeds, tobacco, fruit, and ornamental plants.

Industries: mining, fishing and fish processing, timber.

Services: tourism.

Natural Resources: minerals, timber, hydro power, fish.

Urbanization: 42%

Climate: Subtropical with wet and dry seasons in low lying areas. More temperate in the mountains.

Geography: Akinonia is flat except for the Tarambana Mountains in the northern

department of Upper Sambara. With the exception of Selachian Province, Akinonian soil is rich, even close to coastal areas. Among the primary geographical are the Shrouded Forest, the Adonis Swamp, the Seals Peninsula, the Tilapi Archipelago, and the Selachian Coast.

Most of the eastern section of the surviving woodlands of the **Shrouded Forest** is in Akinonia. This ecosystem is remarkable for its diversity of wild flora and fauna. Native species include endangered varieties of wild cats and birds of prey.

The **Adonis Swamp** is a giant wetland bisected by the Sambara River. Certain bird and mammal species, including felines, migrate between the swamp and the Shrouded Forest. The swamp has an impact on the volume and quality of water in the Sambara River.

The **Seals Peninsula** is flanked by Astonishment Bay and Etruria Bay. Two sites of interest are found on the peninsula: the central core of ancient Sumerostan, which is a World Heritage site, and Seals Peninsula National Park, with its protective regime for certain species of cetaceans and pinnipeds.

The four principal islands of the **Tilapi Archipelago** are Dusk Island, Harbinger Island, Daybreak Island, and Windy Island. The Tilapi ethnic group of about 300,000 people inhabits the archipelago.

Flora and Fauna: endangered wild cats and bird of prey, marine mammals (whales, seals).

History: The Tilapi people, believed by some to have founded Sumerostan, the great civilization that once dominated the entire basin, and the ancestors of the Konfundesians, now live on the archipelago of four islands located in the Takong Delta.

The bulk of the Sumerostanis migrated north, until they were rebuffed by the Palmyrians, a hostile mountain people, and forced to cede a large part of their territory: the area south of the Mumbara and Takong Rivers including the Seal Peninsula.

After winning this war, the Palmyrians, ancestors to the Akinonians, expanded rapidly to the south and established their first capital at Styropolis. In the mid-eighteenth century, an earthquake destroyed more than 60% of Styropolis and the capital was moved south to the site of Palmyra where the Kingdom of Akinonia was founded. It was governed under the principles of the 1884 Palmyra Pact, a royal declaration. The following decades were characterized by peaceful coexistence with indigenous and other neighboring groups. In 1959, there was no successor to the throne, which opened the way to the republican period.

Political Organization: The 1985 Constitution establishes that Akinonia is a democratic republic with a presidential system.

For many years Akinonia was a unitary state with a centralized government. In recent years, however, mainly because of pressure from civil society, policies that favor the decentralization of decision making have been introduced, and local governments have been given the power to regulate the use of natural resources, to establish protected areas, and increasingly to be consulted on decisions being made at the national level.

The current government is a coalition of socialist parties, most importantly the **Akinonian Workers Party** and the **Green Party**. In the one year that this coalition has been in power, it has broken with a conservative political tradition that lasted nearly 25 years by promoting citizen participation and overseeing the decentralization and democratization of state institutions. A constitutional amendment in 1998 allowed for the increased participation of indigenous and local groups in decision-making processes by providing them with a role in local environmental councils.

Civil Society: citizen participation has increased notably in the past several years, which has had a profoundly democratizing effect on the country and increased the transparency of its political institutions. Social, environmental, human rights, and indigenous affairs organizations have taken their place on the national political stage and promoted decentralization, especially by establishing and participating in more representative local councils with increased administrative authority. The major civil society organizations are Save Our Swamp, an environmental group focused on threats to the Adonis Swamp, and Tilapi Forever, an indigenous group that promotes sustainable economic development of the Tilapi people.

Territorial Organization: Akinonia is divided into six departments: Gloria, Paladins, Selachian, Sovereignty, Upper Sambara, and Victory. Victory and Sovereignty are located at random or outside the Takong basin.

Major Cities:

- **Palmyra**, the capital with a population of 1.5 million, is the country's principal economic center and its busiest port, with activity tripling in the last 10 years.

- **Styropolis** is the capital of Upper Sambara Department, located on the Sambara River near the border with Konfundesia, close to the Adonis Swamp and the mining belt of Argenta in the Tarambana Mountains. It was the center of Palmyrian society before Akinonia was founded at Palmyra and has become Akinonia's second most important city.

- **Alchemy** is the capital of Paladins Department, which is known for its agricultural and livestock areas. With a population of 250,000, it is the third largest city. It is located on the lower Sambara River and connected by a road bridge across the Sambara to the Konfundesian city of Saline. Downstream from Alchemy is the Papyrus Dam which prevents navigation to the sea. Both Alchemy and Styropolis are connected to the port city of Palmyra, below the dam, by road and railroad.

- **Etruria** is the capital of the Department of Gloria and Akinonia's only coastal city. The tourism industry has given new life to the city

after a long period of dormancy. It is now the port of entry for tourists visiting the archipelago, the archaeological site of Sumerostan, and all the other destinations on the Seals Peninsula.

Water/Environment-Related Legislation:

Constitutional amendments in 1998 declared that all inhabitants of Akinonia have the right to a healthy environment, and required the state to ensure that the country's natural environment and natural resources be protected. Later, the right of aboriginal peoples to self-determination was recognized, as were their forms of social organization and their right to administer their affairs in keeping with their own traditions.

Akinonia has a **General Law on the Environment**, approved in 2001 to provide a legal framework for compliance with the 1998 constitutional amendment. The law provided new instruments for managing environmental affairs and established the **National Ministry of the Environment** and the **National Secretariats of Environmental Management, Wildlife, Forests, Water Resources, and Coasts and Fishing Resources** as well as local **Environmental Councils** with authority over a wide range of related matters. The General Law on the Environment also provides a legal framework for the implementation of the **Environmental Impact Assessments (EIA)** for all activities and processes that might impact the environment in any significant way. It also includes provisions for a system of **Payments for Ecosystem Services (PES)**. So far, the PES system has been implemented only in a pilot project to ameliorate the effects of deforestation in the Tarambana Mountains and maintain a constant flow of water into the Adonis Swamp.

While the General Law on the Environment requires the monitoring and control of sources of water pollution and establishes the need to preserve ecosystems, particularly those related to fresh and coastal waters, Akinonia does not have legislation specifically focused on water resources.

The **1994 National Forest Law** focuses on the conservation, improvement, restoration, and growth of the country's forest resources through the rational use and management of forests and the appropriate development and integration of forest-based industries.

The **1995 National Wildlife Law** regulates all activities related to wildlife management including permits, licenses, hunting seasons, prohibitions, and wildlife protection, as well as the management of the national system of protected areas.

Water-Related Administrative Structure: National **Ministry of the Environment** and the **National Secretariats of Environmental Management, Wildlife, Forests, Water Resources, and Coasts and Fishing Resources** as well as local **Environmental Councils** with authority over a wide range of related matters were established by the General Law on the Environment.

Weaknesses of Legal and Policy Framework: The policy framework is generally consistent, but the government is very new and inexperienced so ministers do not always take advantage of their full powers.

International Agreements: Internationally, Akinonia is a member of the United Nations and a party to the most important multilateral agreements on the environment including the Convention on Biological Diversity, United Nations Framework Convention on Climate Change, World Health Organization, Convention on Wetlands of International Importance, Convention on the Conservation of Migratory Species of Wild Animals, and the United Nations Convention on the Law of the Sea. With regard to water resources, the country has signed the Convention on the Law of Non-Navigational Uses of International Watercourses.

Water Issues:

Adonis Swamp: The mining and agriculture carried out in the Department of Upper Sambara threaten the swamp, which is a Ramsar site. The Green Party is pushing for the establishment of protected areas in the Department of Upper Sambara.

Shrouded Forest: The ecosystem is threatened by political division (two countries with two different systems of oversight and management); extractive activities such as logging, which moves ever deeper into the forest; and mining. The proposal to grant new mining concessions, particularly within or near the Shrouded Forest, has met with the opposition of environmentalists and other sectors of civil society.

Seals Peninsula: Dredging a channel through Astonishment Bay to the deep water port city of Estambay is a profound threat to the cetaceans of the Seals Peninsula. Moreover, clearing of

mangroves and tidal flats for these navigation improvement works significantly weakens the capacity of these coastal ecosystem to protect from storm surges and sea level rise.

Tilapi ethnic group is indigenous to the region (probably the ancestral group to the people of Konfundesia) and now consists of some 300,000 people whose traditions include fishing and collecting mollusks. In recent years their traditional way of life has been threatened by tourist development, particularly new hotels in the western part of the delta and on the Selachian Coast, which have led to the introduction of the money economy and alien and unfamiliar social and cultural practices. The Tilapi have a small tourist industry of crafts and tours, which they feel is often overwhelmed by the private tourism industry.

Dams: The Papyrus Dam, a run-of-the-river dam, is being enlarged and proposals to construct a new dam on the Sambara River 75 km upstream from the city of Styropolis has met with opposition from Save Our Swamp and locals who say it will ruin the Adonis Swamp. Konfundesia opposes the enlargement of the Papyrus Dam because it already interferes with operation of the Tarpon Canal.

Energy: The energy sector is in the hands of **Electrical Services of Akinonia (ESA)**, a mixed-capital enterprise in which the state retains the majority share. The sector is under serious scrutiny by environmental groups and has recently been harshly criticized for significant irregularities in the provision of electrical and water service.

The primary source of energy is hydropower. The **Papyrus Dam** on the lower Takong River provides 50% of the country's energy. The remainder is supplied by oil-fired power stations located in the principal urban areas. The use of imported oil has led the country and in particular the ESA to rethink energy policy and adopt an Energy Efficiency Plan (EEP) with three components:

- The enlargement of the Papyrus Dam to increase its generating capacity. This project is now underway after receiving a significant loan from the World Bank.
- The use of **wind energy**. Two pilot wind farms have been installed on the Seal Peninsula. These two installations (Sumerostan I and II) have been so productive that additional ones (Sumerostan III, IV, and V) have been proposed and approved after successful feasibility studies.
- The **Upper Sambara project**, which entails the construction of a hydroelectric dam some 75 km upstream from the city of Styropolis. This project has met with opposition from civil society and several political sectors, including some within the governing coalition. Nevertheless, a feasibility study has had positive results and funds have been made available for construction to proceed.

Energy self-sufficiency is an important issue for Akinonia, a country with an expanding economy. Thus these projects have continued to move forward despite significant opposition.

Transportation: Akinonia has two river ports (Styropolis and Alchemy) and one port with both river and sea access (Palmyra).

Palmyra is the country's principal port and is expected to become the major port in the region as a whole. Located 50 km from the mouth of the Takong, it is the principal point of ingress and egress from the country for freight, passengers, and tourists. Work on expanding this port, which will make it the most important port in the region, will begin within 12 months. The project will include building new terminals and making necessary changes such as the dredging of a deep channel for access by deep-draft vessels including cruise ships and cargo ships. This project is part of the **Operational Plan for Port Development in Akinonia (OPPDA)**, which also includes the modernization of river port facilities in Styropolis and Alchemy.

The country's main cities are interconnected by a **highway system** operated by a public-private joint venture called Highways of Akinonia, responsible to the Ministry of Transportation.

The country's **railroads** are operated by a state-owned enterprise (Railroads of Akinonia - RA) and carry both freight and passengers. A privately financed project was recently approved to construct a new rail line from Palmyra to the Seals Peninsula by way of Etruria.

Economy: The economy of Akinonia is based on agriculture, timber, fishing, and fish packing, and tourism.

Agriculture: Agriculture is concentrated in the departments of Gloria, Paladins, Sovereignty, and Upper Sambara (above all on the eastern bank of the Sambara River), and focused on

oilseeds, tobacco, fruit, and ornamental plants, all for export. Plantations in

At the same time, many farmers have switched to soybean production to meet strong demand on the world market. According to the most recent studies, this could compromise the competitiveness of the agricultural sector in the medium-term by limiting diversification and promoting monoculture. The most current impact of these plantations, however, is overexploitation of groundwater resources from the **Chimaeras-Sovereignty Aquifer**.

Forestry: Timbering is concentrated in the Department of Upper Sambara. Over the last 10 years, Akinonia has adopted incentives to establish forest plantations to protect the Shrouded Forest. Environmentalists believe that this policy has incentivized the use of high-yield species, but also increased water consumption, which has led to the extraction of significant volumes of water from the upper Sambara basin and which, in the short term, will have a significant negative effect on wetlands.

Fishing: Deep-sea fishing is well developed. The country has several fish processing facilities on the Selachian Coast, where products are prepared for export.

Mining: Mining plays an important role in Akinonia's economy: silver, copper, and gold deposits in Upper Sambara were exploited by the early Palmyrians. Akinonia recently awarded new mining concessions to private companies. Mining operations are regulated by national legislation.

Tourism: Natural features attractive to domestic and international tourism include the Adonis Swamp, the Seals Peninsula, and the Tilapi Archipelago. Akinonia has successfully exploited these areas by providing incentives for private tourist industry development, by building more efficient transportation infrastructure including ports and airports, and by instituting policies attractive to high-end consumers from outside the country.

Annex 3 – Non-cooperation scenarios

List of water use activities, planned or current – these can also be characterised as individual “conflict scenarios” under a non-cooperation regime:

1. Land use change in the upper Takong River Basin (current)

The **mountain** community of Konfundesia derives benefits from converting high-elevation forest and native grassland and shrubs to pastures for livestock. Conversion of these landscapes leads to siltation of dam reservoir storage through erosion.

The costs associated with decreased water storage capacity and soil conservation are borne by the **hydropower** sector and the **environment** of Akinonia.

2. Mining in the Tarambana Mountains (current)

The **city** of Styropolis in Akinonia derives benefits from mining in the nearby Tambara Mountains, and so does the **mining** sector.

The costs associated with increased pollution to the Adonis Swamp are borne by the **rural** settlements and the **environment** on both sides of the border. These costs extend onto the **tourism** sector around the Chimaeras Lake.

3. Tourism (conservation) around the Chimaeras Lake (current)

The **environment**, including biodiversity, in Konfundesia derives benefits from conservation activities around the **Chimaeras Lake**, and so does **tourism**.

The costs associated with maintaining acceptable levels and quality of water in Lake Chimaeras are borne by the **mining** sector in Akinonia, by the **city** of Styropolis in terms of lost revenues from metallurgy, and by the **forestry** sector in Akinonia in terms of lost revenues from timbering.

4. Hydropower production at Edara Dam (planned)

The **hydropower** sector and the **city** of Estambay in Konfundesia would derive benefits from the building of the Edara Hydroelectric Dam.

The costs associated with the reduced flows would be borne by:

- the **hydropower** sector in Akinonia – in particular the Papyrus Dam found downstream;
- the **agricultural** sector in Konfundesia but also in Akinonia due to decreased flows for riverine habitats and saline water intrusion at the delta downstream;
- riverine ecosystems (i.e. the **environment**) in both countries, which in Akinonia translates into costs for the **tourism** and **fishing** sectors due to reduced sediment (beach replenishment) and nutrient (fishery support) supply as well as in terms of threatened **cultural** (historical) sites due to increased erosion.

5. Biofuel expansion in the Metis Region (planned)

The **agriculture** sector in Konfundesia would derive benefits from a biofuel expansion in the Metis Region as well as the **city** of Styropolis in Akinonia where energy security for transport is expected to increase as a result of trade of this biofuel stock.

The costs associated with the reduced flows to grow the biofuel crops would be borne by the **hydropower** sector of Akinonia downstream. Other costs will be borne by the **tourism** and **fishing** sectors due to increased land-based pollution issues around the coast e.g. from fertilizers being carried downstream.

6. Forestry in the upper Sambara River Basin (current)

The **forestry** community of Akinonia derives benefits from exploiting the forest maintained in the upper Sambara basin but it does not yet do so commercially (to an extent compensate for lost revenues in the Shrouded Forest that is a protected area). This forest, however, is comprised of non-native species that do not support rainfall generation, water infiltration or runoff downstream.

The costs associated with the decreased water supply and aquifer recharge downstream are borne by the **agriculture** sector that pumps irrigation water for commercial plantations of soybean in Eastern Akinonia as well as the **rural** settlements and the **environment** on both sides of the border in the Adonis Swamp.

7. Hydropower production at Upper Sambara Dam (planned)

The **hydropower** and **mining** sectors in Akinonia, and the **city** of Styropolis with its metallurgic industry, would derive benefits from the building of the Upper Sambara Dam in the form of electricity generated.

The costs associated with degraded ecosystem health and livelihoods from reduced flows to the Adonis Swamp would be borne by the **rural** settlements and by the **environment** on both sides of the border. There also are costs associated with the reduced flows that are borne by the respective national **agriculture** sectors on each side of the river.

8. Aquifer overpumping for irrigated soybean plantations in Eastern Akinonia (current)

The **agriculture** sector of Akinonia derives benefits from pumping water from the Chimaeras-Sovereignty Aquifer for irrigation. Overpumping, however, has depleted the water table that has caused levels to go down in both the Chimaeras Lake and Adonis Swamp, as the Aquifer stretches from Eastern Akinonia to the Chimaeras region of Konfundesia. This evidently has costs for the **tourism** sector in Konfundesia as well as the **environment** and the **rural** settlements in these particular regions that are dependent on the water differential for recreational activities, wildlife support and livelihood-related uses e.g. artisanal fisheries and weaving materials. There also are costs associated with reduced flows that are borne by the **agriculture** (livestock) sector of Konfundesia on the right bank of the Sambara that is forced to only irrigate fields for fodder from surface water when streamflow is not low.

9. Expansion of Papyrus Dam for hydropower (planned)

The **hydropower** sector and the **city** of Styropolis in Akinonia would derive benefits from expanding the **Papyrus reservoir**.

The costs associated with the flooding of the area upstream of the dam would be borne by the barge transport sector (**navigation**) and **city** of Estambay in Konfundesia in terms of restricted operations for the Tarpon Canal and increased water-related diseases, respectively. The costs associated with the reduced flows downstream of the reservoir would be borne by the **tourism** and **fishing** sectors due to reduced sediment (beach replenishment) and nutrient (fishery support) supply as well as in terms of threatened **cultural** (historical) sites due to increased erosion.

10. Deep water port construction and navigation improvement works in Astonishment Bay

Dredging of the mouth of the Tarpon Canal and clearing of mangroves and tidal flats would derive benefits for the freight transport sector (**navigation**) in Konfundesia in terms of improved operations for the Tarpon Canal.

The costs associated with the loss of coastal habitat would be borne by the **city** of Estambay in Konfundesia in terms of decreased protection from storm surges and sea level rise and by the ecosystems (**environment**) on both sides of the border.

11. Tourism (conservation) in Gloria

The **tourism** sector and the **environment** in Akinonia derive benefits from the conservation of the Gloria coast.

The costs associated with maintaining acceptable levels of water quality and sediment supply are borne by the **hydropower** sector in both Konfundesia and Akinonia in terms of reduced water abstractions.

12. Wind power in Seals Peninsula (planned)

The **city** of Styropolis in Akinonia would derive benefits from expanding a wind farm in the Seals Peninsula in terms of power generated. This however has a negative impact on the value the **cultural** (historical) sites of the Sumerostan civilization and the investment therefore needs to be more efficient.

Annex 4 Values of benefits and costs in a benefit sharing approach

Konfundesia

KONFUNDESIA	Desired benefits	Beneficiary	What Konfundesia could do (measures)	Benefits to K (in US\$ million or indication of benefit realized as appropriate)	Cost to K (in US\$ million)	What Akinonia could do (From Konfundesia's point of view)	Cost to A (in US\$ million)
Tangible Economic benefits	Hydropower generation for Konfundesia	Hydropower sector in Konfundesia	Build the Edara dam and power plant	500	500		200 = 40x5 (reduced environmental flows and impact on econ. Activities / 40 each sector + environment)
	Hydropower revenue from sales to Akinonia	Hydropower sector in Konfundesia	Enlarge hydropower capacity at Edara dam	300	100	Purchase its electricity from Hydropower in K	340 = 300 (energy purchase) + 40 (10 to each sector + environment from reduced flow)
	Tarpon Canal navigation	Konfundesia's City of Estambay		100 (saved maintenance costs)	0	Drain the Papyrus reservoir	100
	Reduction in disease vectors from Papyrus Reservoir. Savings in health care costs	Konfundesia's Cities of Estambay and Confluence (Health sector in Konfundesia)		200	0	Drain the Papyrus reservoir	100 as above
	Riverine habitats protected in K	Environment in Konfundesia	Reoperate Edara Dam to improve environmental flows	75	125		0

	Additional cropland around former Papyrus reservoir	Agricultural sector in Konfundesia		150	40 (cropland restoration)	Restore the river system where once was the Papyrus reservoir	100
	Income from bio-fuels in Metis	Agriculture, fisheries & hotelier sectors in Akinonia	Build irrigation storage at Edara dam	150 (50 each)	100		40 = 10x4 (10 each to agriculture, fisheries & hotelier sectors + environment from reduced flow)
Intangible noneconomic benefits	Electricity self-sufficiency	Konfundesia	Build the Edara dam and power plant	Yes	See above (500)		See above (200)
	Fuel self-sufficiency	Konfundesia	Build irrigation storage at Edara dam	Yes	See above (100)		See above (50)
	Peace and cooperation	Konfundesia	All of the above	Yes	All of the above		All of the above

Akinonia:

Akinonia	Desired benefits	Beneficiary	What Akinonia could do (measures)	Benefits to A (US\$ million or indication of benefit realized as appropriate)	Cost to A (in US\$ million)	What Konfundesia could do (From Akinonia's point of view)	Cost to K (in US\$ million)
Tangible Economic benefits	Hydropower generation	Hydropower sector in Akinonia	Expand Papyrus Dam	300	300		350 = 300 (Tarpon canal maintenance and disease vectors) + 50 from reduced flow (20 fisheries & hotelier sector each + 10 for the environment)

			Or: Purchase power from Edara dam in Konfundesia	300 (saved construction costs)	300 (from lost revenues from not expanding Papyrus dam)	Expand hydropower capacity and sell power to Akinonia	100 (enlarge Edara dam capacity)
	River navigation to upstream cities	Hoteliers and fisheries in Akinonia	Remove Papyrus dam	150 (75 each sector)	100		0
	Fisheries revenues	Fisheries in Akinonia		100	0	Reoperate Edara dam to improve environmental flows	125
	Tourism revenues	Hoteliers in Gloria (Akinonia)		150	0	Reoperate Edara dam to improve environmental flows	125 (as above)
	River delta, including water levels at religious site, protected in A	Environment and cultural sites in Akinonia		75	0	Reoperate Edara Dam to improve environmental flows	125 (as above)
	Additional cropland	Agricultural sector in Akinonia	Restore the river system where once was the Papyrus reservoir	50	40 (cropland restoration)		60 (cropland restoration)
	Preferential electricity rates	Agriculture, fisheries & hotelier sectors in Akinonia		150 (50 each)	40 = 10x4 (10 each to agriculture, fisheries & hotelier sectors + environment from reduced flow)	Build irrigation storage at Edara dam	100
Intangible noneconomic benefits	Electricity self-sufficiency	Akinonia	Expand Papyrus Dam	Yes	See above (300)		See above (300)

	Conservation of cultural sites	Akinonia		Yes	See above (0)	Reoperate Edara Dam to improve environmental flows	See above (125)
	Peace and cooperation	Akinonia	All of the above except expand Papyrus Dam	Yes	All of the above except from expanding Papyrus Dam		All of the above except from expanding Papyrus Dam

Annex 5 (for Facilitators) Exercise Handout: Negotiating an Agreement on Benefit Sharing

You are a member of your country's delegation tasked with negotiating an agreement for Benefit sharing between Konfundesia and Akinonia in the Takong basin. Recall that you have worked with your counterpart riparians to establish that the Base Case of non-cooperation was *not* advantageous to most stakeholders in either country.

The attached Table A provides a detailed listing of the benefits that each country seeks to achieve, their specific beneficiaries, and measures each country can take to achieve those benefits.

There is now a *possible agreement* for cooperation on a set of projects and water management solutions, which you are weighing:

POSSIBLE AGREEMENT between Konfundesia and Akinonia to share benefits from the Mumbara River:

- **Konfundesia** will construct the Edara Dam on the Mumbara River with an enlarged hydropower capacity. It will negotiate a long-term agreement with Akinonia to provide it with power from this dam.
- **Akinonia** will remove the Papyrus Dam and drain the Papyrus Reservoir

Your task as a member of your country delegation is to determine whether the possible agreement is of interest to your country. In doing so, you will seek to:

- Maximize tangible and intangible benefits for your country
- Minimize costs
- Maximize the number of stakeholders coming out better off in your country

In order to proceed with this Possible Agreement, the parties have commissioned a study to provide an estimated valuation of benefits and costs to be incurred by each country, shown in Table 1 below. (For details on benefits and costs per activity, refer to Table A).

Table 1. Benefits and Costs to Konfundesia and Akinonia under Possible Agreement

	Konfundesia	Akinonia
Benefits	(6) Revenue to the hydropower sector from the sale of electricity (7) Electricity self-sufficiency for Konfundesia (8) Long-term contract and revenue for sale of hydropower to Akinonia	(5) Saved construction costs for the Papyrus Dam to provide electricity for the city of Styropolis (6) Savings from no operation and maintenance of Papyrus dam (7) River navigation to upstream cities

	(9) Lower maintenance costs for the Tarpon canal for the city of Estambay, due to the elimination of the Papyrus reservoir (10) Lower incidence of water-related disease for the city of Estambay, from elimination of Papyrus reservoir <i>Total benefits estimated at: \$ 1100</i>	(8) Environmental flows in Akinonia are improved from removal of Papyrus dam <i>Total benefits estimated at: \$480</i>
Costs	(3) Construction of EDARA dam (4) Cost of enlarged hydropower generation capacity <i>Total costs estimated at: \$600</i>	(6) Demolition of the Papyrus reservoir (7) Lost electricity revenue from the Papyrus Dam (8) Cost of electricity purchase from EDARA plant (9) Loss of environmental flows and corresponding economic and cultural benefits (10) Energy dependency (losing self-sufficiency) <i>Total costs estimated at: \$640</i>

Each delegation will convene to deliberate on the following questions before returning to the plenary for Round 1:

- In each country, which stakeholders stand to gain, and which stand to lose?
- Is this possible agreement satisfactory in light of these benefits and costs, and keeping in mind your country may seek additional benefits?
- What are some additional measures/actions that you would propose to make this a better agreement for stakeholders in your country?

During the negotiation, you are free to identify additional potential benefits, costs and compensation mechanisms to help yield better outcomes.

Annex 6 (for Participants) Exercise Handout: Negotiating an Agreement on Benefit Sharing

You are a member of your country's delegation tasked with negotiating an agreement for Benefit sharing between Konfundesia and Akinonia in the Takong basin. Recall that you have worked with your counterpart riparians to establish that the Base Case of non-cooperation was *not* advantageous to most stakeholders in either country.

The attached Table A provides a detailed listing of the benefits that each country seek to achieve, their specific beneficiaries, and measures each country can take to achieve those benefits.

There is now a *possible agreement* for cooperation on a set of projects and water management solutions, which you are weighing:

POSSIBLE AGREEMENT between Konfundesia and Akinonia to share benefits from the Mumbara River:

- **Konfundesia** will construct the Edara Dam on the Mumbara River with an enlarged hydropower capacity. It will negotiate a long-term agreement with Akinonia to provide it with power from this dam.
- **Akinonia** will remove the Papyrus Dam and drain the Papyrus Reservoir

Your task as a member of your country delegation is to determine whether the possible agreement is of interest to your country. In doing so, you will seek to:

- Maximize tangible and intangible benefits for your country
- Minimize costs
- Maximize the number of stakeholders coming out better off in your country

In order to proceed with this Possible Agreement, the parties have commissioned a study to provide an estimated valuation of benefits and costs to be incurred by each country, shown in Table 1 below. (For details on benefits and costs per activity, refer to Table A).

Table 1. Benefits and Costs to Konfundesia and Akinonia under Possible Agreement

	Konfundesia	Akinonia
Benefits	(1) Revenue to the hydropower sector from the sale of electricity (2) Electricity self-sufficiency for Konfundesia (3) Long-term contract and revenue for sale of hydropower to Akinonia (4) Lower maintenance costs for the Tarpon canal for the city of Estambay, due to the elimination of the Papyrus reservoir (5) Lower incidence of water-related disease for the city of Estambay, from elimination of Papyrus reservoir Total benefits estimated at: \$ 1100	(1) Saved construction costs for the Papyrus Dam to provide electricity for the city of Styropolis (2) Savings from no operation and maintenance of Papyrus dam (3) River navigation to upstream cities (4) Environmental flows in Akinonia are improved from removal of Papyrus dam Total benefits estimated at: \$480
Costs	(1) Construction of EDARA dam (2) Cost of enlarged hydropower generation capacity Total costs estimated at: \$600	(1) Demolition of the Papyrus reservoir (2) Lost electricity revenue from the Papyrus Dam (3) Cost of electricity purchase from EDARA plant (4) Loss of environmental flows and corresponding economic and cultural benefits (5) Energy dependency (losing self-sufficiency) Total costs estimated at: \$640

Each delegation will convene to deliberate on the following questions before returning to the plenary for Round 1:

- In each country, which stakeholders stand to gain, and which stand to lose?
- Is this possible agreement satisfactory in light of these benefits and costs, and keeping in mind your country may seek additional benefits?
- What are some additional measures/actions that you would propose to make this a better agreement for stakeholders in your country?

During **successive rounds**, you are free to identify additional potential benefits, costs and compensation mechanisms to help yield better outcomes.

