



TAMLAR RANGE GOVERNANCE SIMULATION HANDBOOK

Version 1.0 – August 2022

Credit

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The Handbook is for use with the *Tamlar Engine* a spreadsheet created in the open source software Libreoffice Calc (libreoffice.org) that contains all algorithms for calculating and tracking progress during the simulation. The *Tamlar Engine*, also published under a Creative Commons License is available on the *Mountains Connect* website (mountains-connect.org). It is recommended to always cite the Handbook and the Engine together.

The suggested reference for the Engine is: Balsiger, Jörg, and Stéphanie Reusse. 2022. *Tamlar Range Governance Simulation Engine. Version 12.0*. Geneva: Research Hub for Environmental Governance and Territorial Development, University of Geneva.

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1. INTRODUCTION

Simulations use a participatory approach to analyze a specific issue with a precise learning objective. Simulations can help participants placed in a given situation to become aware of dynamics and relationships, different stakes, and the consequences of the decisions being made.

Simulations provide an innovative setting to immerse participants in a defined and realistic space-time in which they have to make decisions and develop and implement a regional collaboration instrument.

This **Tamlar Range** simulation takes place in a fictional region, inspired by real-world relationships and dynamics with the mountain range extending over five countries. Each country must face not only the immediate impacts of their collective engagement in regional negotiations, national priorities, and climatic and economic events that occur during the game but also improve their capacity to adapt to climate change. The game takes place between 2022 and 2034.

The participants find themselves in this fictional universe, governed by real-world dynamics. They face unexpected events, which can be both positive and negative. Thus, through negotiations, in decision-making, resource management, and consideration of short- and long-term consequences, they have to find a balance between the different issues to reach the objective of the simulation, to increase their adaptive capacity.

The simulation does not refer to any existing territory. Insights from analyses of mountain range governance experiences from around the world have been used to create the **Tamlar Range**.

The objective of this simulation is to collaborate and negotiate with neighboring countries that share the mountain range and to develop a regional instrument in order to confront and adapt to climate change.

In this simulation, participants are called upon to:

- Make strategic decisions for their fictional country
- Manage their resources
- Collaborate and negotiate with other countries to defend the interests of their fictional country and increase together their adaptive capacity
- Elaborate a regional instrument

2. MOUNTAIN SIMULATION

Mountains are home to diverse societies and fragile ecosystems that are under serious threat. The impact of climate change is more pronounced in mountainous regions than in most other regions. Mountains provide many ecosystem services, from water supply and purification, to biodiversity, wildlife habitats, CO₂ sequestration, regulation of flooding, and food production. Changes in mountain ranges are happening more quickly and with much more impact than elsewhere and are affecting life around the world.

To deal with the consequences of these impacts, societies must increase their adaptive capacity, and they need to work together to do so.

The simulation intends to alert participants to climate change impacts described in the last IPCC report and to simulate the interdependencies and importance of regional collaboration to face them.

The objectives of this simulation start from this urgency.

Examples of regional objectives

- Protect ecosystems to safeguard water quantity and quality
- Guarantee the food supply
- Create wealth (economic development)
- Attract tourism
- Reduce pollution
- Collect data to help to limit the impacts of climate change
- Increase the adaptive capacity of societies

Public policies must facilitate cooperation between countries.

Simulation objectives:

- Illustrate governance interdependence and complexity
- Experience the consequences of collective decisions
- Facilitate collaboration for adaptive governance
- Take action under uncertainty

The simulation evolves around decisions and events, and the scenario takes shape according to not only the choices of the participants at the national level, but also to the results of their negotiations at the regional level.

All stakeholders are represented in the simulation and roles are assumed by all participants. Participants are not attributed a specific role, but the team should remember to address different points of view.

Several sectors are identified, and participants need to take all of them into consideration. Each stakeholder must be heard and included in decision-making.

Negotiation take place at several levels: within a country and at the regional level, bilaterally or multilaterally, through regional mechanisms.

3. MOUNTAIN RANGE GOVERNANCE: SEVEN DIMENSIONS

- Territoriality
- Institutional formality
- Sectoral integration
- Vertical coordination
- Civil society participation
- Science-policy interface
- Funding arrangements

The videos produced for the *Mountains Connect* website (www.mountains-connect.org) provide an overview of these dimensions. Thanks to the theoretical and practical contributions of some 30 experts from around the world who have shared their insights and experiences, the videos serve as a basis for reflection during the simulation and for harmonizing knowledge. They serve simultaneously as tools, references to which to return in case of doubt or need, and guides for developing a regional instrument of collaboration.

The following issues, among others, are discussed in these videos:

- Which territory should be considered and how can it be defined?
- What kind of collaboration should be established? At what institutional level should adaptation issues be integrated into mountain regions?
- How can different levels of governance, include civil society be engaged? How can local communities be engaged?
- How can expertise be taken into account? Which expertise should be considered? How can information be disseminated?
- How can efforts be financed? What should be financed? By whom?

Supporting documents: *Mountain Connect* videos (mountains-connect.org), Seven dimensions (Annex 10)

4. STAKEHOLDERS

Each country is composed of a team of participants who represent general stakeholder groups from the following sectors:

- Tourism
- Economic development
- Agriculture
- Government
- Research and education
- Civil society

5. SIMULATION STRUCTURE

While this simulation involves realistic and complex dynamics, it is nevertheless possible to elaborate a governance instrument in one day.

The approaches to climate change adaptation and risk prevention and reduction proposed in the simulation are based on interactions between existing structures and must be able to unfold within the parameters set by the simulation.

Decisions and choices follow mainly from the participants' own experience and knowledge. They are based on their understanding of climate change in mountain regions as well as the development of regional instruments and tools. Participants apply their professional and academic expertise to the simulation.

Over the course of the simulation, participants are thus called upon to make choices and decisions that impact several sectors, including :

- Agriculture
- Water
- Energy
- Tourism
- Education
- Health
- Transport

5.1 Region

The setting of the simulation is a mountain region: the **Tamlar Range**. This mountain range covers all or parts of five countries.

Supporting document:
Tamlar Range map (Annex 13)

5.2 Countries

Each country is identified by a recognizable color and flag.



Geography and demographics

The five countries vary in size, resources, demographic profiles, energy sources, and wealth—sometimes considerably.

Each country is defined by a demographic, geographic, economic and social profile that includes the country's:

- Geographical position in the Tamlar Range
- Territorial size
- Share of national territory that is mountainous
- Population size
- Share of the population that resides in the mountain region

This profile is determined before the start of the game and does not change during the game.

Country	Capital	Map location	Territory (relative, baseline = 1)	Territory in mountain region (% of national territory)	Population (relative, baseline = 1)	Population in mountain region (% of national population)
Sarid	Diras	Northwest	3	60	3	70
Kitar	Ratik	Southwest	5	10	15	10
Talis	Silat	Southeast	4	35	5	25
Ethara	Thara	Northeast	3	30	4	40
Miria	Airim	Center	1	100	1	100

Energy profile

Each country has an energy profile. Four types of energy have been selected: solar, hydro, wind and oil. The first three are classified as renewable energy sources and the last as a non-renewable fossil energy source.

The energy profile evolves during the simulation as a result of investments in renewable energy or unforeseen events.

The relative weight of each energy source is represented as a percentage of a non-quantified total of 100. When a country buys or chooses a renewable energy structure (solar farm, reservoir or windmill) it will decrease the portion of fossil energy by the same amount.

When a country sells a renewable energy source, the share of fossil energy in the energy mix again increases.

	Fossil			Solar (%)	Hydro (%)	Wind (%)
	Total (%)	Imported (%)	domestic production (%)			
Sarid	70	20	50	10	0	20
Kitar	40	30	10	30	10	20
Talis	20	20	0	10	50	20
Ethara	60	60	0	10	20	10
Miria	10	10	0	0	90	0

Resources

Each country enters the simulation with a defined amount of resources. All countries have the same kinds of resources so as to facilitate comparison and cooperation; however, the quantities they have at the beginning of the simulation are not the same.

These resources are counted in units. The unit is not defined.

The resources available in each country can be consulted at any time by all participants.

- **Money:** Expressed in the regional currency of the **ramlat (rml)**, the monetary reserve goes up and down as a result of purchases, sales, and events. At the beginning of each round, the reserve is adjusted.

Baseline adjustment at the beginning of the round:

At the beginning of rounds 2 and 3 (in t7 and t15), each country receives the equivalent of 10% of its Sustainability Index (which represents the sum of the country's non-monetary resources).

- **Knowledge**
 - Knowledge creation: everything that concerns education and research
 - Knowledge application: everything that concerns the use of knowledge, for instance through the deployment of technology
- **Well-being** is separated into two types:
 - Individual well-being concerns health, health care and quality of life (including nutrition, access to education, happiness, etc.)
 - Collective well-being concerns communities and describes the population's trust in its government, territorial and social cohesion (including participatory processes, decentralization, ...)
- **Agricultural resources** concern domestic production. The simulation does not take imports into account.

Agricultural production is divided into three main categories:

 - “Crops” represent all vegetable and fruit production (cereal crops, legumes, oilseeds, vegetables and fruit production)
 - “Grapes” primarily represents viticulture, i.e. wine making
 - “Animal” represents livestock (cows, goats, sheep), the production of dairy products (milk, cheese, eggs, etc.), and the use of animals in agriculture (ploughing, forestry, etc.)
- **Water** is a resource that integrates the notions of quantity and quality

- **Biodiversity**, as a national resource, represents the quantity and variety of genes, species, and ecosystems

All resources change during the simulation, with increases and decreases having an impact on other resources.

Initial resource endowments:

	ACI	Money	Knowledge			Well-being		
			Total	creation	applicat ion	Total	individual	collective
Sarid	170	35	30	10	20	35	15	20
Kitar	280	100	25	10	15	30	20	10
Talis	185	40	30	20	10	25	15	10
Ethara	220	60	35	15	20	45	25	20
Miria	235	50	60	20	40	50	25	25

AI: Adaptive capacity index : Sum of all resources

	Agricultural production				Water	Biodiversity
	Total	Crops	Grapes	Animals		
Sarid	30	10	10	10	25	15
Kitar	60	25	25	10	45	20
Talis	45	20	0	25	30	15
Ethara	40	35	5	0	20	20
Miria	25	10	10	5	40	10

Supporting documents: Country profile comparison (Annex 11), Country profiles (Annex 12)

6. INFORMATION GIVEN TO THE PARTICIPANTS

Participants are assigned to a country. Participants' real countries of origin are not linked to their Tamlar Range country.

Each participant receives information about the region and detailed information about his or her country (data, resources).

At the beginning of the simulation, participants must (re)familiarize themselves with the specifics of their country, especially its location in the Tamlar Range, its demographic, socio-economic and energy profiles, as well as its initial resource endowment.

7. SIMULATION OBJECTIVE

The objective of the simulation is to negotiate a regional instrument. While working towards this goal, countries must manage their resources and care for their people so as to increase their adaptive capacity.

To achieve this goal, participants have **four types of actions** available:

- Redefining allowances or resources
- Buying domestic assets
- Investing in regional assets
- Contributing to the elaboration of a regional instrument

Internal, bilateral or regional negotiations are used to define the importance of each type of asset, to buy or sell assets, to agree on the purchase of regional assets, and to define the terms of a regional instrument.

The ultimate objective of the simulation is to become aware of and experiment with the key governance elements in regional cooperation to combat climate change: sharing knowledge, strengthening capacities, ensuring regional coordination involving all stakeholders, and providing the means to develop tools and communication.

In building and negotiating a common instrument, the following issues must be considered:

- Nature protection
- Economic parameters
- Political parameters
- Ensuring a good quality of life
- Ensuring cross-border management

Supporting documents: Regional assets (Annex 4), Asset impact matrix (Annex 6), Regional market worksheet (Annex 7), Regional instrument worksheet (Annex 9), Seven dimensions (Annex 10), Country profiles (Annex 12), *Mountain Connect* videos (mountains-connect.org)

8. SIMULATION PROCESS

The simulation takes place on one day and is played in three rounds (it can be played over a longer period of time but the coaching time line would then have to be adjusted accordingly). Each round represents the equivalent of four years. The simulation thus lasts 12 total years. When played in 2022, the simulation ends in 2034 and the three rounds are as follows:

Round 1: 2022 to 2025

Round 2: 2026 to 2029

Round 3: 2030 to 2034

Each round has the same structure and includes:

- > A big event (only in rounds 2 and 3) that affects all countries, which must then react and respond to it.
- > One event that will be drawn at random. Each country draws a different event card.
- > Time for in-country consultations to decide on how to allocate resources that will:
 - prepare the country for climate change
 - respond to events
 - prepare for negotiations with other countries
 - prepare a regional instrument
- > Time for negotiations at the regional market and at the political forum for a regional instrument.
- > Plenary moments for official statements.
- > A moment of debriefing with the simulation moderators.

8.1 Newsflash

After the event cards are drawn in the countries, all coaches receive news of what has happened in the other countries (news dissemination is most easily organized with the use of smartphones). Coaches read the news so that each team knows what is happening to their neighbors and understands what impact this will have on their resources. This may provide clues for the possible direction those countries will support in the political forum or regional market.

8.2 Regional market

Before going to the regional market, each country must decide what to purchase, and check the requirements needed for a regional asset.

Teams choose one or more delegates to represent them at the regional market. They decide how autonomous their delegate(s) will be in the negotiations, the amount of money their delegates may spend, and how they are going to communicate with their teams once they are in the regional market.

If the prerequisites are not met for purchasing a regional asset (i.e. the purchase of one or more specific assets is not completed), the delegates have to consult their country to determine who is going to buy the missing assets. They may have to go back to their country or send a message to validate the purchase. When all countries have committed to purchasing the necessary national assets, the purchase of the regional asset is then validated.

Delegations also negotiate the share of the cost of a regional asset.

Supporting documents: National and regional assets cards (Annexes 3 & 4), Regional market worksheet (Annex 7), Regional assets worksheet (Annex 8)

8.3 Political forum

Before going to the political forum, each country will have worked on the intentions and elements they want to include in the regional instrument.

Teams choose one or more delegates to represent them at the political forum. They also define the delegate's level of autonomy – the decision-making margin to give to the delegate(s). Delegates may need to consult their country during the negotiation process.

Supporting documents: Seven dimensions (Annex 10), Regional instrument worksheet (Annex 9)

8.4 Event cards

Random events

At the beginning of each round, countries draw an event card at random from three cards. The event card has both positive and negative consequences on the country's level of resources and adaptive capacity and may necessitate an update of the national and regional strategy in terms of what assets to purchase, what regional asset is important, and/or what kind of regional instrument to develop.

The conditions mentioned on the cards can multiply the resource gains and even have an impact on the resources of other countries.

Supporting document: Event cards (Annex 5)

Big event

The beginning of rounds 2 and 3 is marked by a major event that is announced in the plenary room. This big event impacts the entire mountain range. Its impact on resources is significant but the right combinations of national and regional assets can mitigate the consequences.

At this stage, participants receive a Presidential Brief that informs them of the impact and consequences on their resources and monetary reserves. These impacts can be found in the Tamlar engine.

Supporting document: Tamlar engine (mountains-connect.org)

8.6 Resource thresholds

Resources cannot fall below a certain threshold or breaking point. When one of a country's resources falls below the threshold, cascading impacts on other resources result.

Biodiversity threshold

If a country's biodiversity resources fall below one third of the initial endowment, consequences are felt, particularly in agricultural production (grapes and crops), which decline drastically.

Water threshold

If the country falls below two thirds of initial water resources, pronounced declines are experienced in animal and crop production. Individual well-being is also strongly affected by water stress.

Agriculture threshold

If the country falls below half of its agricultural production, the impacts are consequential on individual well-being (hunger, famine) and collective well-being (reduced confidence in the government, territorial withdrawal). The threshold is calculated based on the total of agricultural production and not on each type of production.

Well-being threshold

If the country falls below 40% (2/5) of its well-being, there are consequences for knowledge creation and monetary reserves. A population that is not doing well does not invest in education or research and the cost of health care increases.

Knowledge threshold

If the country's knowledge resources (knowledge production *or* application) fall below half of its initial endowment, there is a significant impact on the country's monetary reserves, which will decrease significantly due to this impoverishment in knowledge, and this will also have an impact on biodiversity, which will suffer from the use of techniques with a high destructive impact on fauna and flora that will in turn suffer from the lack of research, studies and biodiversity conservation projects.

Monetary reserve threshold

If the country depletes its monetary reserves, the knowledge sector and collective well-being are very strongly impacted. If the knowledge sector is too strongly impacted, repercussions are to be expected for biodiversity.

A country that has no cash flow can no longer invest in any assets, neither national nor regional.

8.7 National assets

Countries can purchase assets that help increase adaptive capacity to climate change. Assets that increase adaptation and resilience can limit negative impacts.

The asset cards contain different elements:

- monetary cost and minimum cost, as well as sale conditions
- short descriptions
- the positive and negative impacts of the asset on resources
- the potential issues or challenges associated with the asset
- the mitigating or multiplying effect of the asset

The price of assets is expressed as a percentage of the country's monetary reserves. Assets have a minimum fixed cost however, so that a country whose budget is too small cannot continue to buy assets at prices that become excessively low.

The mitigating and multiplying effects define how certain assets may reduce the impact on the resources of the events.

Supporting documents: Asset impact matrix (Annex 6), National and Regional assets cards (Annexes 3 and 4)

8.8 Regional assets

Some prerequisites need to be met to purchase a regional asset. One such prerequisite could be that a minimum of two or three countries must have a specific asset, or perhaps that there is a minimum level of a certain resource at a regional level. Another prerequisite could be that no country is below a certain minimum resource level.

Regional crop research institute

- Two countries have a university
- No country is below the minimum knowledge creation and knowledge application level.

Regional renewable energy research center

- Three countries have a university
- No country is below the minimum knowledge creation and knowledge application level.
- Two countries have a reservoir or a solar farm.

Regional early-warning system

- Two countries have a national fiber network
- Two countries have a university

- No country is below the minimum level of knowledge creation and knowledge application
- Minimum of 50 units of regional collective well-being (sum of the national scores of countries seeking to invest in this asset).

Regional railway system

- Three countries have a reservoir or a solar farm
- Minimum of 60 units of regional knowledge application (sum of the national scores of countries seeking to invest in this asset)
- Minimum of 60 units of regional collective well-being (sum of the national scores of countries seeking to invest in this asset).

Regional protected area network

- Three countries have national parks
- No more than 50 units of regional animal production (sum of the national scores of countries seeking to invest in this asset).

Regional assets have important costs. During regional markets, countries decide what assets they want to invest in and how they will share the cost. A template guides the delegates through this process.

Supporting documents: Regional market worksheet (Annex 7), Regional assets worksheet (Annex 8)

Note: Only assets bought during these rounds are taken into consideration to access regional purchases. Assets implied in the initial energy profile do not count towards prerequisites.

8.9 Sale of assets

Conditions that apply to the sale of national assets

The sale price is half of the original purchase price. Positive impacts on non-monetary resources related to the asset are removed, but all negative effects caused by the initial purchase of the asset are maintained.

In case of the sale of a solar farm: the percentage of renewable energy gained at the time of purchase is lost and the share of fossil fuel in the energy mix increases.

The following assets cannot be sold or closed to release funds:

- Sustainable agriculture microcredit system
- Reservoir
- Irrigation modernization
- Weather eye

The following assets may be sold or closed to release funds:

- Universities
- National parks
- Local health centre network
- Institute of Democratic Practice (IDP)
- Water treatment plants
- Solar farms
- Ecotourism extension service
- Healthy forests hub

There are some assets of which countries can only have one each at any given time. For example, a country can have only one Local health center network (but it can have a Local health center network *and* an Institute for democratic practice).

Only one of each of the following can be had at a time:

- Sustainable agriculture microcredit system
- Local health center networks
- Institute for democratic practice
- Irrigation modernization
- Weather eye
- Ecotourism extension service
- Healthy forests hub
- All regional assets

Of all other national assets, countries can have more than one (for example two universities) but they may only acquire one of a kind per round.

8.10 Debriefing

A debriefing with the simulation moderators concludes each round. It takes place in the plenary room, and everyone participates.

The moderators provide an overview of the regional situation and give feedback on the decisions made, the impact on resources, the situation in each country, and the evolution of national and regional adaptive capacity.

9. ORGANIZATION

9.1 Rooms

The game requires several rooms and specific equipment.

- One large room for plenary sessions, i.e., the welcome, debriefing and regional negotiations
- Five break-out rooms: one room for each country. These are used for consultations, negotiations, drafting of intentions, the Tamlar Range map and resource bank.

The plenary room hosts the headquarters (HQ). Participants can come to HQ at any time to consult the overall situation and to learn about developments in the other countries.

9.2 Material

One computer integrates the evolution of the data during the game; one projector is needed to broadcast this information in real time.

- Tokens for resources, money, and energy sources (they are tokens of 1 and notes of 10)
- A country board (x 5) for participants to keep track of the evolution of the simulation, investments in national and regional assets, the energy profile as well as progress in adaptive capacity
- 2 pawns (x 5)
- National asset cards (7 x 12 cards)
- Regional asset cards (7 x 5 cards)
- Event cards (5 x 19 cards)

9.3 Moderators and coaches

There are two simulation moderators. They collect the data transmitted by the coaches and integrate it into the Tamlar engine in order to follow the evolution of the situation in each country and at the regional level.

There are seven coaches: two in the plenary to moderate the regional market and the regional political forum, respectively, and five to accompany the national teams in the breakout rooms.

Coaches are present in each team to facilitate negotiations, refocus discussions, monitor time, and transmit relevant information to the central office.

The coach has several responsibilities:

- facilitating discussions and negotiations by recalling issues, objectives and constraints
- animating discussions and reviving them if debates stagnate or cease
- ensuring that everyone can speak and be heard, and that discussions are conducted in a caring and respectful manner
- keeping time and ensuring the transition from one stage of the simulation to the next
- transmitting all decisions taken in the breakout rooms to HQ: cards drawn, assets purchased, assets sold, etc.
- keeping a summary record of the consultation and negotiation sessions
- explaining elements related to the rules of the simulation and its design (such as the consequences of a particular decision like a drastic reduction in certain resources or the indirect impact of an asset purchase)

The coach has a checklist, which he/she follows throughout the simulation.

Supporting document: Regional instrument worksheet (Annex 9)

Coaches follow up on participants' decisions by recording them in the Tamlar engine. Resources are automatically adjusted.

The coach also has the task of ensuring that decisions are made collectively, transparently, and explicitly, for example by asking for explanations or justifications or intentions of a particular decision. The participants must be able to explain their decisions at any time, validate them, and record them in a logbook.

The coach can draw attention to the evolution of resources or the proximity of thresholds.

Coaching charter

The coach must be benevolent at all times and must:

- listen, never judge or comment upon a proposal

- encourage speaking up
- avoid giving his or her opinion
- avoid providing any strategic advice for the simulation or revealing any information about the outcome or elements that are not known to the participants

Supporting documents: Coaching objectives and charter (Annex 1), Coaching timeline (Annex 2)

9.4 Logbook

Keep a team log. One participant takes notes that include:

- objectives,
- decisions, and
- feelings

10. TIMELINE

The game is played in three rounds, each with the same structure.

Time per round:

- Round 1: 120 minutes
- Round 2: 105 minutes
- Round 3: 105 minutes

A spreadsheet called Tamlar engine is used to compile all information and generate impact calculations. The simulation moderator at HQ updates and manages this file, which is hidden from the participants, but allows them to follow the impact and consequences of each of the country's decisions.

The coaches have the same version of the Tamlar engine that allows them to enter the decisions made by the participants as they evolve through the simulation along the timeline. In contrast to the moderators, the country coaches use the engine only for the country they coach.

Each piece of information entered in the file generates calculations automatically and indicates the impact on resources and adaptive capacity.

The coach announces to the participants the impact on resources.

If the team loses resources, the participants must give resource tokens back to the coach. If they gain resources, the coach gives them additional tokens. All resources are organized on the board.

The assets and events also indicate an increase or decrease in adaptive capacity.

According to these elements, the participants move their pawn up or down the adaptive scale. One arrow means one step, two arrows two steps, and the arrows give the direction (up, down or no change).

The band on the far left of the board allows coaches to move a pawn on this slider to indicate to participants where they are situated in the simulation and the steps that are remaining.

Supporting document:
Coaching timeline (Annex 2)

11. REGIONAL INSTRUMENT

Coaches coach accompany the preparation of the political forum. The regional instrument is discussed in the political forum and incorporates the seven mountain range governance dimensions explained in the *Mountains Connect* videos:

- Territory
- Sectoral integration
- Institutional formality
- Science policy interface
- Vertical coordination
- Civil society participation
- Funding

The preparation is split into two moments to help structure the instrument.

The regional instrument must establish:

- > the perimeter of the area under consideration and the criteria for defining it (=> Video 1: Locating mountains for governance)
- > the institutional setup for governance (=> Video 2: Crafting collaboration and Video 4: Vertical cooperation)
- > financing (=> Video 7: Financing sustainable mountain development)

- > the role of civil society (=> Video 5: Including civil society)
- > the role of scientists (=> Video 6: Bringing science and policy together)
- > priority themes (=> Video 3: Policy integration)

Supporting documents: Regional instrument worksheet (Annex 9), Seven dimensions (Annex 10), Mountains connect videos (mountains-connect.org)

ANNEXES

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- 12 Country profiles
- 13 Tamlar Range map
- 14 Country board (example of Sarid, see Materials on mountains-connect.org for printable versions of all five country boards)

Annex 1: Coaching objectives and charter



Coaching objectives

The coach is in charge of a team. He/she guides it through the game. He/she facilitates the negotiations, refocuses the discussions, monitors the time, enters the relevant elements in the central form.

The coach has several tasks:

- facilitates discussions and negotiations by focusing on the issues, objectives and constraints.
- facilitates and revives discussions if the debate gets bogged down, loses momentum or stops.
- ensures that the floor is shared, that everyone can speak and be heard, and that debates are conducted in a caring and respectful manner.
- is the guardian of the schedule and of the smooth articulation between the different stages of the game.
- transmits the important elements to the central office by filling in the online form: decisions, drawn cards, asset purchases, etc.
- takes the minutes of the consultations and negotiation sessions.
- asks participants, if needed, to develop and explain their decisions and/or consequences of an event.

The coach is responsible for getting participants to think about a range of issues, if they do not take up these issues themselves: decisions taken for the benefit of the region must be made on the basis of robust and coherent considerations.

The coach also has the task of making the decisions made explicit, asking for the explanation and justification or intention of such a choice. Participants should be able to explain their decisions at any time, validate them, and record them in a logbook.

Preparation of a regional instrument

The coach encourages to follow the template for the development of a regional instrument. The regional instrument will be discussed in the regional meetings.

First round: Territoriality / Institutional formality and vertical coordination / sectoral integration

Second round: Science-policy interface and civil society participation / Funding arrangements

Questions he/she may ask :

- > what will be the delimitation: administrative, problematic, economic?
- > information collection: who collects the data, where, and for whom?
- > what will be the scientific input (on demand? permanent?)
- > what will be the role of civil society? (advisory, decision-making, implementation)
- > final instrument: will it be declaratory or binding?

The coach manages decisions and records all decisions made in the electronic form.

- purchases made by the teams
- redistribution of agriculture
- events drawn at random

Resources are automatically adjusted.

He/she acts as the bank during the entire simulation. The team buys assets and announces the reallocation of agricultural resources to him/her. The coach gives and takes resources when an asset or an event impacts them.

Coach Charter

The coach

- ✓ must be benevolent at all times.
- ✓ listens, never judges or comments on a proposal.
- ✓ does not stress the group but facilitates.
- ✓ encourages people to speak out.
- ✓ does not give his/her opinion.
- ✓ does not give any strategic advice for the simulation and does not reveal any information about the rest of the simulation or about elements that are not known to the participants.

Annex 2: Coaching timeline

ROUND 1

10h00-12h00

40
minutes
COUNTRY
ROOM

CONTEXT :

The year is 2022. The elected government for the next 4 years is organizing a session/meeting to discuss how to improve adaptive capacity in the mountain region for the following years. This first meeting also aims to prepare a regional meeting where the 5 countries of the Tamlar range will have to prepare positions for the political delegation that will elaborate a REGIONAL INSTRUMENTS in Rounds 2 and 3.

INTRODUCTION - 15'

- ⇒ Recall the key features of the country: resources, budget, energy profile and develop the first postulates on the strengths and weaknesses of the country
- ⇒ Go through the assets and analyze their direct impacts on your country's resources

use **MATRIX**

CONSULTATION - 25'

- ⇒ Define key goals and objectives for the country and its collaboration in the region for the long term and decide on immediate investments
- ⇒ Restructure agriculture -if desired (20% can be redistributed)
- ⇒ Buy the first assets from the bank in each country

as a coach, you are the bank here

t0
initial
endowment
(read only)

t1
restructure
agriculture

t2
national asset
purchase 1

SEND picture
or information
to HQ

15

minutes

**COUNTRY
ROOM**

EVENT - 5'

An unforeseen event occurs in your country. It has consequences beyond your control and impacts various areas of your economy and society.

- ⇒ Draw a card at random from 3 cards.
- ⇒ Discover the immediate impacts on your country's resources

COACH:

- **GIVES resource tokens**
- **ADJUSTS adaptive capacity (and ENERGY profile if necessary)**
- **ASKS participant to withdraw resource tokens**

CONSULTATION - 10'

- ⇒ Discuss for 10 minutes consequences of this event
- ⇒ Check or adjust the investment strategy, which may change according to recent events

**COACH reads flashnews
coming from other countries**

t3

event card
impact

TRANSMIT to
HQ which card
has been drawn

FLASH NEWS
coming in from
other countries

10 minutes
COUNTRY
ROOM

PREPARE REGIONAL MARKET – 10'

- ⇒ Prepare for sale (if needed)
- ⇒ Prepare second round of national purchases

Sales are at half the purchase price

Sales and purchases are decided here, but are implemented (with impact on resources) at the end of the MARKET

DELEGATE: ECONOMIC DELEGATION

- ⇒ Delegate 1-2 members from your country to the REGIONAL MARKET
- ⇒ Determine his/her role in your country (government, local representative, ...)
- ⇒ Determine his/her mandate: what will he/she negotiate, what will he/she propose to buy as regional assets, what strategy will your country pursue.

use REGIONAL MARKET

Countries can decide whether the delegates have full authority

how much money they can invest

if they have to come back and chat with the group

(they may also set up a WhatsApp group)

**20
minutes**

**COUNTRY
ROOM**

COUNTRY ROOM – 20’

The team members who remain in the room prepare for the **REGIONAL INSTRUMENT**.

The objective is to build a regional governance instrument to increase the adaptive capacity of mountain regions to climate change.

- ⇒ Discussion about what kind of instrument they want to develop for a cross-border governance tool, and what are their priorities

In this first round, the first dimensions are addressed

use **7 DIMENSIONS**

use **INSTRUMENT**

**Possible return of delegates to validate new
investments**

to make the purchase of regional assets possible

E-MAIL
ALERT
(sound)
inviting
delegates to the
plenary

**20
minutes**

**PLENARY
ROOM**

PLENARY ROOM – 20’

REGIONAL MARKET

- ⇒ Delegates present in 2 minutes the priorities and strategy of his/her country.

use **REGIONAL MARKET**

- ⇒ Delegates can decide to buy or sell national assets
- ⇒ They jointly purchase regional assets and/or plan purchases for future rounds

use **REGIONAL ASSET**

If prerequisite for purchasing regional assets are not met, delegates can return to their country to decide together whether they are prepared to make the necessary investments to purchase a regional asset.

t4
national asset
sale
t5
national asset
purchase 2
t6
regional asset
purchase

**10
minutes
COUNTRY
ROOM**

REPORTING - 10'

- ⇒ Delegates return home and report on regional market
- ⇒ The team briefs the delegates on the first draft of the regional instrument.
- ⇒ You assess your assets, your resources and your monetary reserve at this stage

**20
minutes
PLENARY
ROOM**

DEBRIEFING - 20'

ROUND 2

13h30-15h15

**10
minutes
PLENARY
ROOM**

CONTEXT

The year is 2026.

The budget for the next 4 years has just been approved by the parliament and the money has been allocated to your monetary reserve. Impacts may also be seen on CROPS and GRAPES and on the ENERGY PROFILE, depending on regional asset purchases in Round 1.

BIG EVENT – 10'

- ⇒ A major event affects all countries in the TAMLAR RANGE.
- ⇒ You receive a presidential brief that shows how resources and monetary reserve have been impacted.

You receive a PRESIDENTIAL BRIEF

- ⇒ You return to your country and remove/add the impacted resources.

COACH:

- **GIVES resource tokens and**
- **ASKS participants to withdraw resource tokens**

t7
baseline
adjustment
(read only)

t8
big event
(read only)

20 minutes

**COUNTRY
ROOM**

CONSULTATION – 20'

⇒ In consultation with your country, decide which assets to purchase

use **MATRIX**

⇒ Strengthen the national strategy for the long term and decide on immediate investments

⇒ Restructure agriculture (max 20% can be moved)

⇒ Buy **national assets** from the bank in each country

as a coach, you are the bank here

t9

restructure
agriculture

t10

national asset
purchase 1

SEND picture
or information
to HQ

15

minutes

COUNTRY

ROOM

EVENT - 5'

An unforeseen event occurs in your country. It has consequences beyond your control and impacts various areas of your economy and society.

- ⇒ Draw a card at random from 3 cards.
- ⇒ Discover the immediate impacts on your country's resources and adaptive capacity

COACH:

- **GIVES resource tokens**
- **ADJUSTS adaptive capacity**
- **ASKS participant to withdraw resource tokens**

CONSULTATION - 10'

- ⇒ Discuss for 10 minutes the consequences of this event
- ⇒ Check or adjust the investment strategy, which may change according to recent events

**COACH reads flashnews
coming from other countries**

t11

event card
impact

transmit to HQ
which card has
been drawn

FLASH NEWS
coming in from
other countries

10 minutes
COUNTRY
ROOM

PREPARE REGIONAL MARKET

and INSTRUMENT FORUM – 10'

- ⇒ Prepare for sale (if needed)
- ⇒ Prepare second round of national purchases

Sales are at half the purchase price

Sales and purchases are decided here, but are implemented (with impact on resources) at the end of the MARKET

DELEGATE: ECONOMIC DELEGATION:

- ⇒ Prepare with your delegate(s) for the second REGIONAL MARKET
- ⇒ Re-define his/her role in your country (government, local representative, ...)
- ⇒ Re-define his/her mandate: what will he/she negotiate, what will he/she propose to buy as regional assets, what strategy will your country pursue.

use REGIONAL MARKET

Countries can decide whether the delegates have full authority

how much money they can invest

if they have to come back and chat with the group

DELEGATE: POLITICAL DELEGATION

- ⇒ Delegate a member (or more) from your country to the POLITICAL FORUM to elaborate a REGIONAL INSTRUMENT
- ⇒ Determine his/her role in your country (government, local representative, ...)
- ⇒ Determine his/her mandate and decision-making autonomy

use INSTRUMENT

use 7 DIMENSIONS

**20
minutes**

**PLENARY
ROOM**

PLENARY ROOM – 20’

REGIONAL MARKET

Delegate present in 2 minutes their priorities and strategy

use **REGIONAL MARKET**

- ⇒ Delegates can purchase or sell national assets
- ⇒ They jointly purchase regional assets and/or plan purchases for future rounds

use **REGIONAL ASSET**

If prerequisite for to purchasing regional assets are not met, delegates can return to their country to decide together whether they are prepared to make the necessary investments to purchase a regional asset

E-MAIL
ALERT
(sound)
inviting
delegates to the
plenary

t12
national asset
sale

t13
national asset
purchase 2

t14
regional asset
purchase 2

**20
minutes**

**PLENARY
ROOM**

POLITICAL FORUM – 20’

First meeting of delegates at the POLITICAL FORUM.

- ⇒ Delegates present in 2 minutes the priorities and stakes for the regional governance instrument
- ⇒ Discussion and development of the first part of a draft

**20
minutes**

**COUNTRY
ROOM**

COUNTRY ROOM – 20’

The team members who remain in the room prepare the second part of the **REGIONAL INSTRUMENT**:

- ⇒ They address the next dimensions to elaborate a regional governance instrument
- ⇒ They define their priorities and strategy

In this second round, the next dimensions are addressed

use **7 DIMENSIONS**

use **INSTRUMENT**

**10
minutes
COUNTRY
ROOM**

REPORTING - 10'

- ⇒ Delegate returns home and report on regional forum and on regional market
- ⇒ The team briefs the delegates on the second part of the regional instrument.
- ⇒ You assess your assets, your resources, your adaptive capacity and your monetary reserve at this stage

**20
minutes
PLENARY
ROOM**

DEBRIEFING - 20'

ROUND 3

15h30-17h15

**10
minutes**

**PLENARY
ROOM**

CONTEXT

The year is 2030.

The budget for the next 4 years has just been approved by the parliament and the money has been allocated to your monetary reserve.

BIG EVENT – 10'

- ⇒ A major event affects all countries in the TAMLAR RANGE.
- ⇒ You receive a presidential brief that shows how your resources have been impacted.

You receive a PRESIDENTIAL BRIEF

- ⇒ You return to your country and remove/add the impacted resources.

COACH:

- **GIVES** resource tokens and
- **ASKS** participants to withdraw resource tokens

t15

baseline
adjustment
(read only)

t16

big event
(read only)

**20
minutes
COUNTRY
ROOM**

CONSULTATION – 20'

⇒ In consultation with your country, decide which assets to purchase

use **MATRIX**

⇒ Strengthen the national strategy for the long term and decide on immediate investments

⇒ Restructure agriculture (max 20% can be moved)

⇒ Buy **national assets** from the bank in each country

as a coach, you are the bank here

t17

restructure
agriculture

t18

national asset
purchase 1

SEND picture
or information
to HQ

15

minutes

**COUNTRY
ROOM**

EVENT – 5'

An unforeseen event occurs in your country. It has consequences beyond your control and impacts various areas of your economy and society.

- ⇒ Draw a card at random from 3 cards.
- ⇒ Discover the immediate impacts on your country's resources and adaptive capacity

COACH:

- **GIVES resource tokens**
- **ADJUSTS adaptive capacity**
- **ASKS participant to withdraw resource tokens**

CONSULTATION - 10'

- ⇒ Discuss for 10 minutes the consequences of this event
- ⇒ Check or adjust the investment strategy, which may change according to recent events

**COACH reads flashnews
coming from other countries**

t19

event card
impact

transmit to HQ
which card has
been drawn

FLASH NEWS
coming in from
other countries

10 minutes
COUNTRY
ROOM

PREPARE REGIONAL MARKET

and POLITICAL FORUM – 10'

- ⇒ Prepare for sale (if needed)
- ⇒ Prepare next round of national purchases

Sales are at half the purchase price

Sales and buy occur during MARKET

DELEGATE: ECONOMIC DELEGATION

- ⇒ Prepare with your delegate(s) for the third REGIONAL MARKET
- ⇒ Re-define his/her role in your country (government, local representative, ...)
- ⇒ Re-define his/her mandate: what will he/she negotiate, what will he/she propose to buy as regional assets, what strategy will your country pursue.

use REGIONAL MARKET

Countries can decide whether the delegates

have full authority

how much money they can invest

if they have to come back and chat with the group

DELEGATE: POLITICAL DELEGATION

- ⇒ Prepare with your delegate(s) for the second POLITICAL FORUM to elaborate a REGIONAL INSTRUMENT.
- ⇒ Determine his/her role in your country (government, local representative, ...)
- ⇒ Determine his/her mandate and decision-making autonomy

use INSTRUMENT

use 7 DIMENSIONS

**20
minutes**

**PLENARY
ROOM**

PLENARY ROOM – 20'

REGIONAL MARKET

⇒ Delegates present in 2 minutes their priorities and strategy.

use REGIONAL MARKET

⇒ Delegates can buy or sell national assets

⇒ They jointly purchase regional assets and/or plan purchases for future rounds

use REGIONAL ASSET

If prerequisite for purchasing regional assets are not met, delegates can return to their country to decide together whether they are prepared to make the necessary investments to purchase a regional asset

POLITICAL FORUM

Second meeting of delegates for the REGIONAL INSTRUMENT.

The instrument must be finalized during this forum.

⇒ Delegates present in 2 minutes the priorities and stakes for the regional governance instrument

⇒ Discussion and development of the final part of the instrument

E-MAIL
ALERT
(sound)
inviting
delegates to the
plenary

t20
national asset
sale

t21
national asset
purchase 2

t22
regional asset
purchase

**20
minutes**

**COUNTRY
ROOM**

COUNTRY ROOM – 20'

The team members who remain in the room prepare the press conference

**10
minutes
COUNTRY
ROOM**

REPORTING – 10'

- ⇒ Delegate returns home and report on regional forum and on regional market
- ⇒ You brief him/her on the first draft of your regional instrument.
- ⇒ You assess your assets, your resources and your monetary reserve at this stage

**20
minutes
PLENARY
ROOM**

LAST BASELINE ADJUSTMENT

DEBRIEFING – 20'

t23
last baseline
adjustment
(read only)

Annex 3: National assets



Solar farm

COST 10% of monetary reserve

Minimum cost in ramlats: 3 rml

Only one solar farm can be acquired per round

Can be sold for 50% of the purchase price

Description

Provides renewable energy. Changes the energy profile of the country, increasing the share of solar energy by 20 percentage points and reducing the share of imported fossil energy by 20 percentage points.

Resource impact

Positive impact on KNOWLEDGE APPLICATION, INDIVIDUAL WELL-BEEING and COLLECTIVE WELL-BEING. However, BIODIVERSITY suffers from the impacts of construction and operation.

Mitigating/multiplying effect

Reduces expenses for energy imports, reduces dependence on external energy sources.

Usefulness for regional projects

Advantage for creating regional renewable energy knowledge and infrastructure.

ADAPTIVE CAPACITY 



Sustainable Agriculture microcredit system

COST 5% of monetary reserve

Minimum cost in ramlats: 2 rml

Only one Sustainable Agriculture microcredit system can be acquired

Cannot be sold

Description

Farmers gain well-being and resilience through a decentralized and accessible microcredit system. Community solidarity is strengthened.

Resource impact

Positive impact on KNOWLEDGE APPLICATION, INDIVIDUAL WELL-BEING, COLLECTIVE WELL-BEING and AGRICULTURAL PRODUCTION (CROPS, GRAPES and ANIMALS).

Mitigating/multiplying effect

Can act as a risk buffer when facing severe climatic events or natural disasters.

Can facilitate absorption and equitable distribution of international funding for sustainable mountain development.

Allows for greater resilience and improved living conditions of mountains farmers.

ADAPTIVE CAPACITY 



University

COST 10% of monetary reserve

Minimum cost in ramlats: 3 rml

Only one university can be acquired per round

Can be sold for 50% of the purchase price

Description

Contributes to knowledge creation and transfer as well as skills development. Supports the economy through technological innovation and the application of knowledge and skills. Enables the country to gain international visibility and status.

Resource impact

Positive impact on KNOWLEDGE CREATION, KNOWLEDGE APPLICATION and COLLECTIVE WELL-BEING

Mitigating/multiplying effect

May amplify impacts on knowledge creation or knowledge application.

Usefulness for regional projects

Can be an advantage for establishing regional knowledge projects.

ADAPTIVE CAPACITY 



National park

COST 10% of monetary reserve

Minimum cost in ramlats: 3 rml

Only one national park can be acquired per round

Operations can be suspended to recover 50% of the purchase price

Description

Helps to preserve and promote biological diversity. May also be used for tourism and recreation or for historical or scientific interest. Can play a role in regional socioeconomic development through job creation and revenue generation.

Resource impact

Positive impact on INDIVIDUAL WELL-BEING, WATER and BIODIVERSITY.

Negative impact on CROP PRODUCTION, ANIMAL PRODUCTION and COLLECTIVE WELL-BEING (possible constraints on traditional resource uses by local residents, e.g. agriculture, pastoralism or hunting).

Mitigating/multiplying effect

Can amplify positive impacts on biodiversity and knowledge valorization.

May increase income when international funding is involved.

Usefulness for regional projects

Can be an advantage for establishing a REGIONAL PROTECTED AREA SYSTEM.

ADAPTIVE CAPACITY 



Reservoir

COST 15% of monetary reserve

Minimum cost in ramlats: 6 rml
Only one reservoir can be acquired per round
Cannot be sold

Description

Can serve multiple purposes: storing and supplying water for irrigation, industry or human consumption; flood control; power generation and power storage; navigation; water regulation; tourism and recreation.

When used to produce electricity, the energy profile of the country evolves: the share of hydro power increases by 30 percentage points, while the share of imported fossil energy decreases by 30 percentage points.

Resource impact

Positive impact on KNOWLEDGE APPLICATION, COLLECTIVE WELL-BEING and WATER.
Negative impact on BIODIVERSITY.

Mitigating/multiplying effect

May be an asset during drought.

Usefulness for regional projects

Can be of advantage for establishing a REGIONAL RENEWABLE ENERGY RESEARCH CENTER..

ADAPTIVE CAPACITY 



Local Health Center Network

COST 10% of monetary reserve

Minimum cost in ramlats: 3 rml

Only one local health center network can be acquired

Operations can be suspended to recover 50% of the purchase price

Description

Improves the health and well-being of the population.

Boosts the responsiveness of the health sector in crisis situations or during and after natural disasters. Also improves territorial cohesion and trust in government.

Resource impact

Positive impact on KNOWLEDGE CREATION, INDIVIDUAL WELL-BEING and COLLECTIVE WELL-BEING.

Mitigating/multiplying effect

When a catastrophe occurs, a health center network facilitates rapid reaction, treatment and care for victims.

Usefulness for regional projects

Through its positive impact on territorial trust, a health center network can be an advantage for the acquisition of infrastructures similarly requiring such trust (REGIONAL EARLY WARNING SYSTEM, REGIONAL RAILWAY SYSTEM).

ADAPTIVE CAPACITY 



Institute of Democratic Practice (IDP)

COST 5% of monetary reserve

Minimum cost in ramlats: 2 rml

Only one IDP can be acquired

Operations can be suspended to recover 50% of the purchase price

Description

Fosters and maintains a participatory and decentralized system for facilitating the participation of local representatives and civil society organizations in political decision making. Also carries out research on local and crossborder governance.

Resource impact

Positive impact on COLLECTIVE WELL-BEING as it contributes to territorial cohesion and solidarity.

Mitigating/multiplying effect

Can help reduce tensions and conflicts surrounding divisive issues as well as during or after crises. Can foster trust in government, legitimate its decisions, and promote local and regional participation in government programmes.

ADAPTIVE CAPACITY 



Water treatment plant

COST 10% of monetary reserve

Minimum cost in ramlats: 3 rml

Only one water treatment plant can be acquired per round

Can be sold for 50% of the purchase price

Description

Facility for treating wastewater after it leaves homes and businesses through sewage pipes. Involves disinfection to restore drinking water quality and is therefore an essential public health tool.

Resource impact

Positive impact on INDIVIDUAL WELL-BEING, WATER and BIODIVERSITY.

Mitigating/multiplying effect

Provision of good quality water can help prevent illness and pollution, improve health and well-being.

ADAPTIVE CAPACITY 



Irrigation modernization

COST 15% of monetary reserve

Minimum cost in ramlats: 4 rml

Only one irrigation modernization can be implemented

Cannot be sold

Description

Improves the redistribution of water to where it is needed, enables agricultural development, reduces production losses, and increases yield. Brings stability to a region and combats water waste.

Resource impact

Positive impact on AGRICULTURAL PRODUCTION (CROPS, GRAPES and ANIMALS) and WATER.

Mitigating/multiplying effect

Meets international standards and facilitates the award of international grants, funding and labeling.

ADAPTIVE CAPACITY 



Weather Eye

COST 15% of monetary reserve

Minimum cost in ramlats: 3 rml
Only one weather eye can be acquired
Cannot be sold

Description

This modern meteorological monitoring and forecasting system facilitates quick and early reaction during and after severe weather events. It is also an important planning tool for the agriculture and energy sectors.

Resource impact

Positive impact on KNOWLEDGE CREATION, KNOWLEDGE APPLICATION and COLLECTIVE WELL-BEING.

Mitigating/multiplying effect

Can reduce the negative impact of a range of climate-related events.

Usefulness for regional projects

Facilitates the implementation of knowledge-intensive regional projects.

ADAPTIVE CAPACITY 



Ecotourism extension service

COST 10% of monetary reserve

Minimum cost in ramlats: 4 rml

Only one ecotourism extension service can be acquired

Operations can be suspended to recover 50% of the purchase price

Description

Supports the development of responsible travel to natural areas that conserves the environment, sustains the well-being of local people and entails interpretation and education. Involves participatory science and values traditional ecological knowledge.

Resource impact

Positive impact on KNOWLEDGE APPLICATION, COLLECTIVE WELL-BEING and BIODIVERSITY.

Mitigating/multiplying effect

Amplifies other nature protection agreements and funding.

ADAPTIVE CAPACITY →



Healthy forests hub

COST 10% of monetary reserve

Minimum cost in ramlats: 3 rml

Only one healthy forests hub can be acquired

Operations can be suspended to recover 50% of the purchase price

Description

Integrated research, training and education initiative focused on sustainable forest management in uplands areas.

Resource impact

Positive impact on KNOWLEDGE APPLICATION, INDIVIDUAL WELL-BEING, COLLECTIVE WELL-BEING, WATER and BIODIVERSITY.

Negative impact on CROP PRODUCTION.

Mitigating/multiplying effect

Enables a wide range of synergies with initiatives related to sustainable land use, nature protection and disaster risk management.

ADAPTIVE CAPACITY 

Annex 4: Regional assets



Regional crops research institute

COST 70 rml

Description

Interdisciplinary research facility that specializes in developing climate proof crop varieties and climate smart agricultural practices.

Prerequisites

Two countries with a UNIVERSITY.

No country below the floor for KNOWLEDGE CREATION and KNOWLEDGE APPLICATION.

Resource impact

- Positive impact on KNOWLEDGE CREATION and APPLICATION
- Positive impact on COLLECTIVE WELL-BEING
- Positive impact on AGRICULTURAL PRODUCTION (crop +++, grapes++, animal +)
- Positive impact on WATER
- Positive impact on BIODIVERSITY

Mitigating/multiplying effect

Advantage during pest event.

Baseline adjustment

20% increase of CROP PRODUCTION for all countries participating in the Regional crops research institute.

ADAPTIVE CAPACITY 



Regional renewable energy research center

COST 110 rml

Description

Center of innovation for the development, testing and deployment of established and new renewable energy with a focus on potentials in mountain regions. Supports research, training and education, and extension services.

Prerequisites

Three countries with a UNIVERSITY.

No country below the floor for KNOWLEDGE CREATION and KNOWLEDGE APPLICATION.

Two countries with a RESERVOIR or a SOLAR FARM.

Resource impact

→ Positive impact on KNOWLEDGE CREATION and APPLICATION

→ Positive impact on INDIVIDUAL and COLLECTIVE WELL-BEING

Mitigating/multiplying effect

Creates synergies with other renewable energy initiatives or events.

Baseline adjustment

Each participating country receives an extra 10 ramlats.

Each participating country can adjust its energy profile by transferring 20 percentage points from fossil to renewable sources.

ADAPTIVE CAPACITY ↗



Regional early warning system

COST 80 rml

Description

Advanced system for hazard detection, monitoring and forecasting; risk analysis and incorporation of risk information in emergency planning and warnings; dissemination of timely and authoritative warnings; and community planning and preparedness.

Prerequisites

Two countries with a UNIVERSITY

No country below the floor for KNOWLEDGE CREATION and KNOWLEDGE APPLICATION

Minimum of 50 for regional COLLECTIVE WELL-BEING

Resource impact

- Positive impact on KNOWLEDGE CREATION and APPLICATION
- Positive impact on INDIVIDUAL and COLLECTIVE WELL-BEING
- Positive impact on ANIMAL PRODUCTION
- Positive impact on WATER

Mitigating/multiplying effect

Significant potential to reduce impact of weather-related disasters that become more frequent with climate change.

Baseline adjustment

Severe weather impact insurance premiums decline as a result of improved forecasting capabilities.

Each participating country receives an extra 10 ramlats.

ADAPTIVE CAPACITY 



Regional railway system

COST 90 rml

Description

Powered by the region’s renewable energy sources, new railway lines now connect all countries of the region, reducing pollution from road traffic, facilitating collaboration and exchange, and promoting trade.

Prerequisites

Three countries with a RESERVOIR or a SOLAR FARM.
Minimum of 60 for regional KNOWLEDGE APPLICATION.
Minimum of 60 for regional COLLECTIVE WELL-BEING.

Resource impact

- Positive impact on INDIVIDUAL and COLLECTIVE WELL-BEING
- Positive impact on GRAPES PRODUCTION
- Negative impact on BIODIVERSITY during construction

Mitigating/multiplying effect

Can be an advantage for organizing regional events or transporting newly accessible resources.

Baseline adjustment

Each participating country receives an extra 5 ramlats for each of the following regional assets in which it participates: REGIONAL CROPS RESEARCH INSTITUTE, REGIONAL RENEWABLE ENERGY RESEARCH CENTER and REGIONAL PROTECTED AREA NETWORK.

ADAPTIVE CAPACITY ↗



Regional protected area network

COST 60 rml

Description

Connecting existing parks and reserves promotes ecological connectivity that supports biodiversity by allowing wildlife to move freely to access food, water, shelter, and breeding habitat.

Prerequisites

Three countries with a NATIONAL PARK

No more than 50 for regional ANIMAL PRODUCTION

Resource impact

- Positive impact on KNOWLEDGE CREATION
- Positive impact on INDIVIDUAL WELL-BEING
- Positive impact on WATER
- Big positive impact on BIODIVERSITY
- Negative impact on COLLECTIVE WELL-BEING (because of resource use constraints)
- Negative impact on AGRICULTURAL PRODUCTION (CROPS and ANIMAL)

Mitigating/multiplying effect

Creates synergies with other nature conservation initiatives and helps reduce negative consequences of certain natural disasters.

Baseline adjustment

Each participating country that has a NATIONAL PARK receives an extra 5 ramlats.

ADAPTIVE CAPACITY ↗

Annex 5: Event cards



EVENT

Landslide destroys road, isolating small town

CONSEQUENCES

Gain

None

Loss

MONETARY RESERVE: 5% decrease
INDIVIDUAL WELL-BEING: 10% decrease
COLLECTIVE WELL-BEING: 10% decrease
BIODIVERSITY: 5% decrease

Other impact

ENERGY PROFILE: 20% Increase of WIND,
20% decrease of FOSSIL

MITIGATING FACTORS

National assets

LOCAL HEALTH CENTER NETWORK: 50% impact reduction on INDIVIDUAL WELL-BEING and COLLECTIVE WELL-BEING

INSTITUTE OF DEMOCRATIC PRACTICE: 50% impact reduction on COLLECTIVE WELL-BEING

WEATHER EYE: 50% impact reduction on INDIVIDUAL WELL-BEING, COLLECTIVE WELL-BEING, and MONETARY RESERVE

HEALTHY FORESTS HUB: 50% impact reduction on MONETARY RESERVE and BIODIVERSITY

Regional assets

CO-FOUNDER of **REGIONAL EARLY WARNING SYSTEM:** 50% impact reduction on INDIVIDUAL WELL-BEING and COLLECTIVE WELL-BEING

ADAPTIVE CAPACITY 



International investor constructs wind farm

CONSEQUENCES

Gain

MONETARY RESERVE: 10% increase
KNOWLEDGE CREATION: 10% increase

Loss

COLLECTIVE WELL-BEING: 10% decrease
BIODIVERSITY: 10% decrease

Other impact

ENERGY PROFILE: 20% Increase of WIND,
20% decrease of FOSSIL

MITIGATING FACTORS

National assets

UNIVERSITY: additional 50% impact increase on KNOWLEDGE CREATION

INSTITUTE OF DEMOCRATIC PRACTICE: eliminates negative impact on COLLECTIVE WELL-BEING

WEATHER EYE: additional 50% impact increase on MONETARY RESERVE

Regional assets

CO-FOUNDER of REGIONAL RENEWABLE ENERGY

RESEARCH CENTER: 5% increase on KNOWLEDGE CREATION for each country

ADAPTIVE CAPACITY 



Mega forest fire breaks out

CONSEQUENCES

Gain

None

Loss

- MONETARY RESERVE: 10% decrease
- INDIVIDUAL WELL-BEING: 10% decrease
- COLLECTIVE WELL-BEING: 10% decrease
- WATER: 10% decrease
- BIODIVERSITY: 10% decrease

MITIGATING FACTORS

National assets

SUSTAINABLE AGRICULTURE MICROCREDIT SYSTEM:

50% impact reduction on MONETARY RESERVE, INDIVIDUAL WELL-BEING and COLLECTIVE WELL-BEING

RESERVOIR: 50% impact reduction on MONETARY RESERVE and WATER

WATER TREATMENT PLANT: 50% impact reduction on INDIVIDUAL WELL-BEING and WATER

WEATHER EYE: 50% impact reduction on all resources

HEALTHY FORESTS HUB: 50% impact reduction on INDIVIDUAL WELL-BEING, COLLECTIVE WELL-BEING and MONETARY RESERVE

Regional assets

CO-FOUNDER of REGIONAL EARLY WARNING SYSTEM:

75% impact reduction on INDIVIDUAL WELL-BEING and COLLECTIVE WELL-BEING

CO-FOUNDER of REGIONAL PROTECTED AREA NETWORK:

50% impact reduction on BIODIVERSITY

ADAPTIVE CAPACITY 



EVENT

Water polluted from illegal pesticide use

CONSEQUENCES

Gain

None

Loss

INDIVIDUAL WELL-BEING: 20% decrease

WATER: 15% decrease

BIODIVERSITY: 10% decrease

MITIGATING FACTORS

National assets

LOCAL HEALTH CENTER NETWORK: 50% impact reduction on INDIVIDUAL WELL-BEING

WATER TREATMENT PLANT: 50% impact reduction on WATER

Regional assets

PARTNER of **REGIONAL CROPS RESEARCH INSTITUTE:** 50% impact reduction on WATER

ADAPTIVE CAPACITY



Sustainable forest promotion program arrives at full operation after 20 years

CONSEQUENCES

Gain

- MONETARY RESERVE: 5% increase
- KNOWLEDGE APPLICATION: 5% increase
- WATER: 10% increase
- BIODIVERSITY: 10% increase

Loss

None

MITIGATING FACTORS

National assets

- NATIONAL PARK:** additional 50% impact increase on BIODIVERSITY
- HEALTHY FORESTS HUB:** additional 50% impact increase on MONETARY RESERVE

Regional assets

CO-FOUNDER of **REGIONAL RENEWABLE ENERGY RESEARCH CENTER:** 50% impact increase on KNOWLEDGE APPLICATION

CO-FOUNDER of **REGIONAL PROTECTED AREA NETWORK:** 10% increase of BIODIVERSITY for all countries

ADAPTIVE CAPACITY 



EVENT

Major storm impacts crop harvest

CONSEQUENCES

Gain

BIODIVERSITY: 5% increase

Loss

MONETARY RESERVE: 5% decrease

INDIVIDUAL WELL-BEING: 10% decrease

CROP PRODUCTION: 20% decrease

MITIGATING FACTORS

National assets

SUSTAINABLE AGRICULTURE MICROCREDIT SYSTEM:

(additional) 50% impact reduction on CROP PRODUCTION

WEATHER EYE: (additional) 50% impact reduction on CROP PRODUCTION

Regional assets

CO-FOUNDER of **REGIONAL EARLY WARNING SYSTEM:**

50% impact reduction on CROP PRODUCTION

ADAPTIVE CAPACITY 



EVENT

High Altitude Medical Center opens

CONSEQUENCES

Gain

MONETARY RESERVE: 5% increase
KNOWLEDGE CREATION: 10% increase
KNOWLEDGE APPLICATION: 5% increase

Loss

None

MITIGATING FACTORS

National assets

UNIVERSITY: 50% impact increase on KNOWLEDGE CREATION

ADAPTIVE CAPACITY →



EVENT

Railway tunnel construction finalized

CONSEQUENCES

Gain

- MONETARY RESERVE: 5% increase
- KNOWLEDGE APPLICATION: 10% increase
- COLLECTIVE WELL-BEING: 10% increase
- BIODIVERSITY: 10% increase

Loss

- INDIVIDUAL WELL-BEING: 5% decrease

MITIGATING FACTORS

National assets

UNIVERSITY: 5% increase of KNOWLEDGE CREATION

Regional assets

CO-FOUNDER of REGIONAL RAILWAY NETWORK:
50% impact increase on BIODIVERSITY for all countries

ADAPTIVE CAPACITY ↗



International mobilization to support indigenous environmental defenders results in constitutional reform formalizing indigenous property title

CONSEQUENCES

Gain

- KNOWLEDGE CREATION: 5% increase
- KNOWLEDGE APPLICATION: 5% increase
- COLLECTIVE WELL-BEING: 10% increase
- BIODIVERSITY: 10% increase

Loss

None

MITIGATING FACTORS

National assets

- UNIVERSITY: 50% impact increase on KNOWLEDGE CREATION
- INSTITUTE OF DEMOCRATIC PRACTICE: 50% impact increase on COLLECTIVE WELL-BEING

ADAPTIVE CAPACITY 



New international environment and health organization strategy makes available regional funding for mountain populations

CONSEQUENCES

Gain

- MONETARY RESERVE: 5% increase
- KNOWLEDGE CREATION: 5% increase
- KNOWLEDGE APPLICATION: 5% increase
- INDIVIDUAL WELL-BEING: 5% increase
- COLLECTIVE WELL-BEING: 5% increase
- CROP PRODUCTION: 5% increase

Loss

None

Other impact

All countries benefit

MITIGATING FACTORS

National assets

SUSTAINABLE AGRICULTURE MICROCREDIT SYSTEM:

50% impact increase on CROP PRODUCTION

UNIVERSITY: 50% impact increase on KNOWLEDGE CREATION

INSTITUTE FOR DEMOCRATIC PRACTICE: 50% impact increase on INDIVIDUAL WELL-BEING

IRRIGATION SYSTEM: 50% impact increase on COLLECTIVE WELL-BEING

ECOTOURISM EXTENSION SERVICE: 50% impact increase on INDIVIDUAL WELL-BEING

Regional assets

CO-FOUNDER of REGIONAL CROPS RESEARCH

INSTITUTE: 50% impact increase on CROP PRODUCTION

ADAPTIVE CAPACITY 



Rare animal species placed on red list, generating conservation funding

CONSEQUENCES

Gain

MONETARY RESERVE: 5% increase
KNOWLEDGE CREATION: 5% increase
BIODIVERSITY: 10% increase

Loss

INDIVIDUAL WELL-BEING: 10% decrease
CROP PRODUCTION: 5% decrease
ANIMAL PRODUCTION: 5% decrease

MITIGATING FACTORS

National assets

HEALTHY FORESTS HUB: 50% impact increase on biodiversity

Regional assets

REGIONAL PROTECTED AREA NETWORK: 50% impact increase on MONETARY RESERVE and BIODIVERSITY

ADAPTIVE CAPACITY 



Funding released for national research program on food security in mountain regions under climate change

CONSEQUENCES

Gain

MONETARY RESERVE: 5% increase
KNOWLEDGE CREATION: 10% increase
CROP PRODUCTION: 10% increase

Loss

None

MITIGATING FACTORS

National assets

WEATHER EYE: 50% impact increase on MONETARY RESERVE and CROP PRODUCTION

Regional assets

CO-FOUNDER of REGIONAL CROP RESEARCH INSTITUTE: (additional) 50% impact increase on CROP PRODUCTION

ADAPTIVE CAPACITY 



EVENT

Transboundary UNESCO Biosphere Reeserve established

CONSEQUENCES

Gain

- MONETARY RESERVE: 5% increase
- KNOWLEDGE CREATION: 5% increase
- INDIVIDUAL WELL-BEING: 5% increase
- BIODIVERSITY: 15% increase

Loss

- COLLECTIVE WELL-BEING: 5% decrease
- ANIMAL PRODUCTION: 10% decrease

Other impact

All countries benefit

MITIGATING FACTORS

National assets

- NATIONAL PARK:** 50% impact increase on BIODIVERSITY
- INSTITUTE FOR DEMOCRATIC PRACTICE:** eliminates negative impact on COLLECTIVE WELL-BEING
- ECOTOURISM EXTENSION SERVICE:** 50% impact increase on MONETARY RESERVE
- HEALTHY FORESTS HUB:** 50% impact increase on MONETARY RESERVE

Regional assets

- REGIONAL PROTECTED AREA NETWORK:** (additional) 50% impact increase on BIODIVERSITY

ADAPTIVE CAPACITY 



Large carnivore incidents reduce tourist numbers

CONSEQUENCES

Gain

None

Loss

MONETARY RESERVE: 10% decrease
COLLECTIVE WELL-BEING: 5% decrease
ANIMAL PRODUCTION: 5% decrease

MITIGATING FACTORS

National assets

SUSTAINABLE AGRICULTURE MICROCREDIT SYSTEM:

50% impact reduction on ANIMAL PRODUCTION

NATIONAL PARK: 50% impact reduction

on MONETARY RESERVE

ECOTOURISM EXTENSION SERVICE: additional 50%

impact reduction on MONETARY RESERVE

ADAPTIVE CAPACITY →



EVENT

Illegally constructed residential developments destroyed in flood

CONSEQUENCES

Gain

None

Loss

MONETARY RESERVE: 5% decrease

INDIVIDUAL WELL-BEING: 10% decrease

MITIGATING FACTORS

National assets

WEATHER EYE: 50% impact reduction on MONETARY RESERVE

ADAPTIVE CAPACITY 



Winter Olympics candidacy approved

CONSEQUENCES

Gain

MONETARY RESERVE: 10% increase
KNOWLEDGE APPLICATION: 10% increase
COLLECTIVE WELL-BEING: 5% increase

Loss

WATER: 10% decrease
BIODIVERSITY: 5% decrease

MITIGATING FACTORS

Regional assets

CO-FOUNDER of REGIONAL RAILWAY NETWORK:
50% impact increase on KNOWLEDGE APPLICATION

ADAPTIVE CAPACITY →



EVENT

New lithium mining commences

CONSEQUENCES

Gain

- MONETARY RESERVE: 10% increase
- KNOWLEDGE CREATION: 5% increase
- KNOWLEDGE APPLICATION: 5% increase

Loss

- INDIVIDUAL WELL-BEING: 10% decrease
- COLLECTIVE WELL-BEING: 5% decrease
- WATER: 5% decrease
- BIODIVERSITY: 5% decrease

MITIGATING FACTORS

National assets

- UNIVERSITY: 50% impact increase on KNOWLEDGE APPLICATION
- NATIONAL PARK: 50% impact reduction on BIODIVERSITY
- WATER TREATMENT PLANT: 50% impact reduction on WATER

Regional assets

- CO-FOUNDER of REGIONAL RAILWAY NETWORK: 50% impact increase on MONETARY RESERVE
- CO-FOUNDER of REGIONAL PROTECTED AREA NETWORK: additional 50% impact reduction on BIODIVERSITY

ADAPTIVE CAPACITY →



Sustainable mountain food label created

CONSEQUENCES

Gain

MONETARY RESERVE: 5% increase
COLLECTIVE WELL-BEING: 5% increase
CROP PRODUCTION: 5% increase
BIODIVERSITY: 5% increase

Loss

None

MITIGATING FACTORS

National assets

SUSTAINABLE AGRICULTURE MICROCREDIT SYSTEM:

50% impact increase on CROP PRODUCTION

IRRIGATION MODERNIZATION: 50% impact increase on COLLECTIVE WELL-BEING

HEALTHY FORESTS HUB: 50% impact increase on MONETARY RESERVE and COLLECTIVE WELL-BEING

Regional assets

CO-FOUNDER of **REGIONAL CROPS RESEARCH**

INSTITUTE: (additional) 50% impact increase on CROP PRODUCTION

ADAPTIVE CAPACITY 

Annex 6: Asset impact matrix



	COST		Knowledge (education, research, technology sector)		Well-being (health, territorial cohesion, trust in government)		Agricultural production			Water (quantity, quality)	Biodiversity	Adaptive capacity
NATIONAL assets	COST IN %	Minimum cost in rmlts										
 Sustainable microcredit agricultural system	5%	2										
 University	10%	3										
 National Park	10%	3										
 Reservoir	15%	6										
 Local health center network	10%	3										
 Institute of democratic practice	5%	2										
 Water treatment plant	10%	3										
 Irrigation modernization	15%	4										
 Solar farm	10%	3										
 Weather eye	15%	3										
 Ecotourism extension service	10%	4										
 Healthy forests hub	10%	3										
			Knowledge (education, research, technology sector)		Well-being (health, territorial cohesion, trust in government)		Agricultural production			Water (quantity, quality)	Biodiversity	Adaptive capacity
REGIONAL assets	COST IN RMLTS											
 Regional crops research institute	70											
 Regional renewable energy research center	110											
 Regional early warning system	80											
 Regional railway	90											
 Regional protected area network	60											
			Knowledge (education, research, technology sector)		Well-being (health, territorial cohesion, trust in government)		Agricultural production			Water (quantity, quality)	Biodiversity	Adaptive capacity

Annex 7: Regional market worksheet

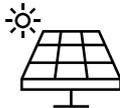


REGIONAL INTENTIONS - MARKET

Country presentation (key features)

Main strengths and weaknesses

National assets bought (stick labels)

<p>Sustainable microcredit agricultural system</p> 	<p>Reservoir</p> 	<p>Water treatment plant</p> 	<p>Weather eye</p> 
<p>University</p> 	<p>Local health center</p> 	<p>Irrigation modernization</p> 	<p>Ecotourism extensive service</p> 
<p>National Park</p> 	<p>Institute of democratic practice</p> 	<p>Solar farm</p> 	<p>Healthy forest hub</p> 

Our priorities:

--

Our intentions at the regional level :

--

Notes :

--

Annex 8: Regional assets worksheet



REGIONAL ASSET – funding agreement

REGIONAL ASSET

ASSET	COST
REGIONAL CROPS RESEARCH INSTITUTE	70

COST SHARING

COUNTRY	Participation	Comment
SARID		
KITAR		
ETHARA		
MIRIA		
TALIS		
TOTAL		

REGIONAL ASSET

ASSET	COST
REGIONAL RENEWABLE ENERGY RESEARCH CENTER	110

COST SHARING

COUNTRY	Participation	Comment
SARID		
KITAR		
ETHARA		
MIRIA		
TALIS		
TOTAL		

REGIONAL ASSET

ASSET	COST
REGIONAL EARLY WARNING SYSTEM	80

COST SHARING

COUNTRY	Participation	Comment
SARID		
KITAR		
ETHARA		
MIRIA		
TALIS		
TOTAL		

REGIONAL ASSET

ASSET	COST
REGIONAL RAILWAY	90

COST SHARING

COUNTRY	Participation	Comment
SARID		
KITAR		
ETHARA		
MIRIA		
TALIS		
TOTAL		

REGIONAL ASSET

ASSET	COST
REGIONAL PROTECTED AREA NETWORK	60

COST SHARING

COUNTRY	Participation	Comment
SARID		
KITAR		
ETHARA		
MIRIA		
TALIS		
TOTAL		

Annex 9: Regional instrument worksheet



REGIONAL INSTRUMENT - FRAMEWORK

TO PREPARE THE REGIONAL INSTRUMENT, THE FOLLOWING DIMENSIONS ARE USED AS A FRAMEWORK // EACH DIMENSION MUST BE ADDRESSED AND REGULATED

COUNTRY ROOM
Round 1: preparation of the first 4 dimensions
Territoriality
Institutional formality & Vertical coordination
Sectoral integration
COUNTRY ROOM
Round 2: preparation of the remaining 3 dimensions
Science-policy interface & Civil society participation
Funding arrangements
COUNTRY ROOM
Round 3: preparation of the 3 minutes press conference

PLENARY ROOM
PLENARY ROOM
Round 2: development at regional level of the instrument on the first 4 dimensions
Territoriality
Institutional formality & Vertical coordination
Sectoral integration
PLENARY ROOM
Round 3: development of the instrument on the remaining 3 dimensions and finalization
Science-policy interface & Civil society participation
Funding arrangements
+ FINALIZATION

Annex 10: Seven mountain range governance dimensions

7 GOVERNANCE DIMENSIONS

Territory

Delimitation criteria for mountain territory

- Political-administrative boundaries
- Ecosystem boundaries
- Problem-oriented with specific issues, e.g. climate change adaptation

Key lessons

- > Fixed boundaries establish clarity
- > There can never be a “perfect” boundary
- > Boundaries involve trade-offs between openness and closure
- > (Sub-)National actors such as municipalities, NGOs and scientists need to work together

Sectoral Integration

First approach to policy integration

Mountain range conceived as single space

- Problem and solution spaces for specific issues are transnational, multiple, and overlapping
- Issues are addressed by actors organized at the level of the mountain range
- Policy integration happens through these actors

Second approach to policy integration

Mountain range as a collection of jurisdictions

- Policy integration occurs at the level of the individual jurisdiction, often under national governments
- Transboundary coordination proceeds through institutions of mountain range governance

Key lessons

- > Where a mountain range is seen as a single space:
 - Key role for regional actors
 - Recognition of transboundary dynamics
 - Territorial approaches to public Policy
- > Where a mountain range is seen as a set of jurisdictions:
 - Policy integration occurs through existing structures
 - Transboundary issues are less readily recognized
 - Administrative fragmentation may jeopardize policy integration

Institutional formality

Organization of collaboration

high-level decisions / resolutions
program / project focus

Responsibility for coordination

- national level vs. subnational level
- executive vs. public administration
- combinations, involving civil society

Key lessons

- > High-level institutionalization
special leverage but lengthy processes
- > Programme/project focus
broad participation but funding dependency and high transaction costs
- > Executive responsibility
international cooperation perspectives but subject to political priorities or international cooperation; elective turnover
- > Public administration
relative stability but risk of suboptimal policy integration

Science policy interface

Key factors

The organization of knowledge production

- The policy side of the interface
- The relationship between scientists and policy-makers

Variations in science-policy interfaces

- How scientists organize
- How transboundary coordination is structured
- How relationships work

Key lessons

Evidence-based mountain range governance is facilitated where

- > credible, legitimate and relevant sources of knowledge exist
- > goals and structures are shared
- > interactions are regular and continuous

Vertical coordination

Situations requiring special attention

1. Coordination between national and regional level involving formal instruments
 - Foreign ministries lead on strategic issues
 - Line ministries lead on sectoral issues
2. Role of local authorities
 - Transnational agreements where devolution permits
 - Programs or projects where subnational governments or cities cannot conclude cross-border agreements

Key lessons

- > In vertical coordination, making sure that the roles and responsibilities of national actors and regional institutions are clear is crucial for the stability and serenity of collaboration.
- > Similarly, defining the involvement of local or provincial authorities can help create a level playing field for the participation of local actors and ensure that lessons from the ground move up to inform strategy at the regional level and thereby contribute to sustainable mountain development.

Civil society participation

Degree of formalization

- high or low

Nature of state – society relation

- collaborative or contentious

Level of professionalisation / formal structures

- high or low

Key lessons

- > Where participation is very formal the involvement of civil society organizations may be more regular and legitimate but this is limited to established organizations.
- > Where state-society relations are collaborative, civil society organizations are typically involved but their role may be pushed towards implementing decisions, rather than making them.
- > Finally, civil society participation in mountain range governance requires an effective participation, legitimate processes and accountability.

Funding

- > Governance mechanisms
- > Sharing arrangements
- > Governance outputs

Key considerations

- Funding typically exists already but is only tied to individual sectors
- Domestic implementation of regionally agreed goals fosters policy integration
- Funding for regional actions or governance innovation can be found through global instruments

Key lessons

- > Sustainable mountain development requires additional funding
- > More efficient use of existing resources can lead to bigger impacts
- > Funding for governance institutions and regular exchange is crucial

Annex 11: Country profile comparison



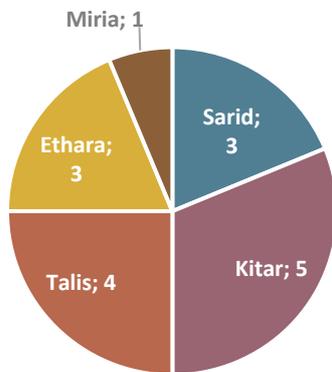
COUNTRY INFORMATION

5 COUNTRIES : Sarid, Kitar, Talis, Ethara, Miria
 1 MOUNTAIN RANGE: Tamlar range

TERRITORY AND POPULATION

Country	Capital		Territory	% of territory in mountain region	Population	% of population in mountain region
Sarid	Diras	Northwest	3	60%	3	70%
Kitar	Ratik	Southwest	5	10%	15	10%
Talis	Silat	Southeast	4	35%	5	25%
Ethara	Thara	Northeast	3	30%	4	40%
Miria	Airim	Center	1	100%	1	100%

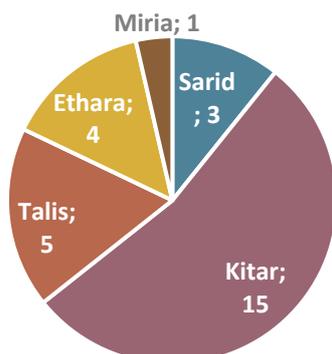
TERRITORY



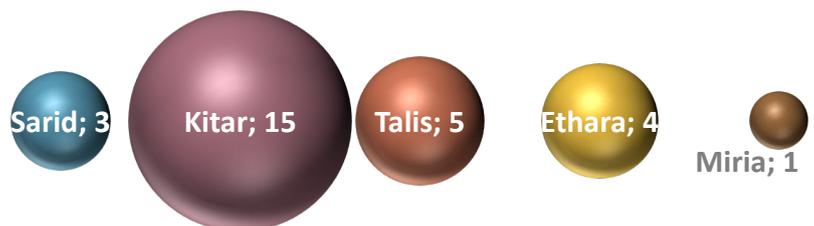
COUNTRY SIZE



POPULATION



COUNTRY POPULATION



ENERGY PROFILE

Country	Capital	Fossil	fossil imported	fossil domestic production	Solar	Hydro	Wind
		TOTAL					
Sarid	Diras	70	20	50	10	0	20
Kitar	Ratik	40	30	10	30	10	20
Talis	Silat	20	20	0	10	50	20
Ethara	Thara	60	60	0	10	20	10
Miria	Airim	10	10	0	0	90	0

6 MAIN RESOURCES

. **MONEY** : ramlats (rml)

. **KNOWLEDGE**:

- KNOWLEDGE CREATION: high education, research
- KNOWLEDGE APPLICATION: technology sector

. **WELL-BEING**:

- INDIVIDUAL WELL-BEING: health, education, happiness
- COLLECTIVE WELL-BEING: territorial cohesion, trust in government

. **AGRICULTURAL PRODUCTION**:

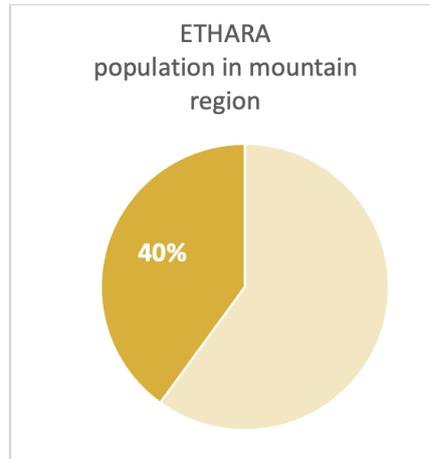
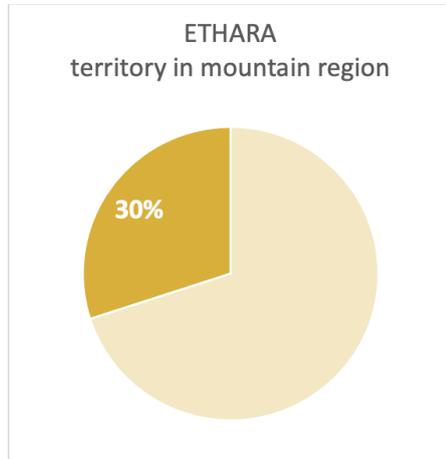
- CROPS: crop, fruits, vegetables
- GRAPES: wine
- ANIMAL: meat and dairy

. **WATER**: quantity and quality

. **BIODIVERSITY**: quantity and quality

Resource endowments														
	SI	Money	Knowledge (education, research, technology sector)			Well-being (health, territorial cohesion, trust in government)			Agricultural production			Water (quantity, quality)	Biodiversity	
			TOTAL	Knowledge creation	Knowledge application	TOTAL	Individual	Collective	TOTAL	Crops	Grapes			Animal
Sarid	170	35	30	10	20	35	15	20	30	10	10	10	25	15
Kitar	280	100	25	10	15	30	20	10	60	25	25	10	45	20
Talis	185	40	30	20	10	25	15	10	45	20	0	25	30	15
Ethara	220	60	35	15	20	45	25	20	40	35	5	0	20	20
Miria	235	50	60	20	40	50	25	25	25	10	10	5	40	10

Annex 12: Country profiles



. **GDP :** **220**

. **MONEY :** **60 ramlats (rml)**

. **KNOWLEDGE:**

- KNOWLEDGE CREATION: high education, research **15**
- KNOWLEDGE APPLICATION: technology sector **20**

. **WELL-BEING:**

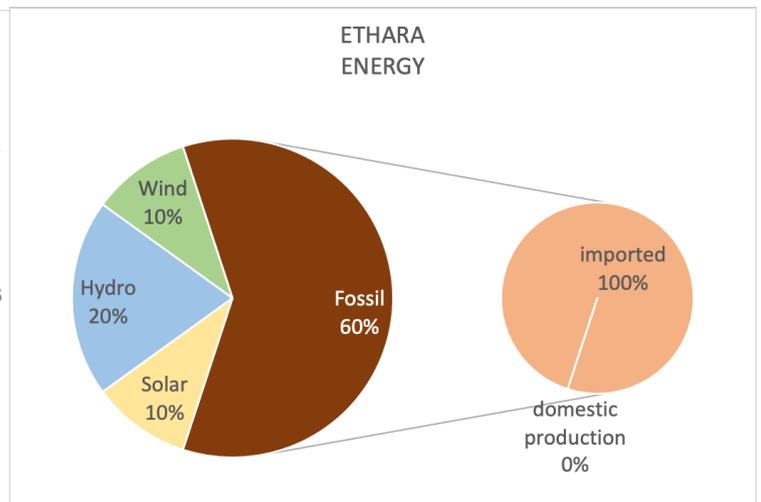
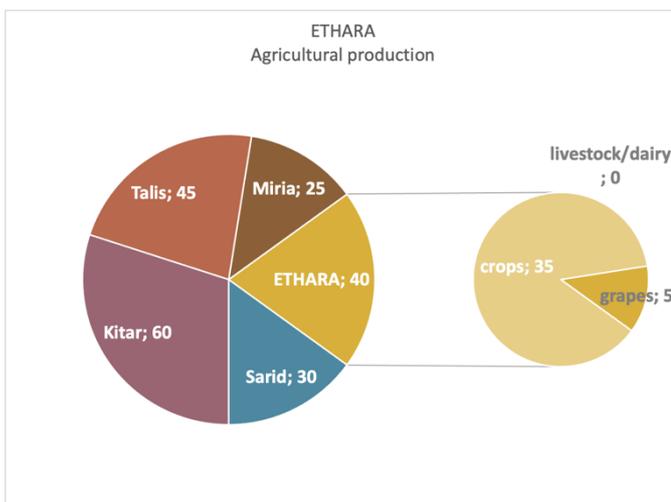
- INDIVIDUAL WELL-BEING: health, education, happiness **25**
- COLLECTIVE WELL-BEING: territorial cohesion, trust in government **20**

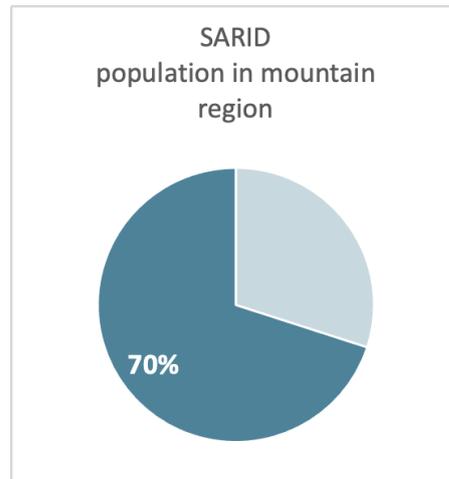
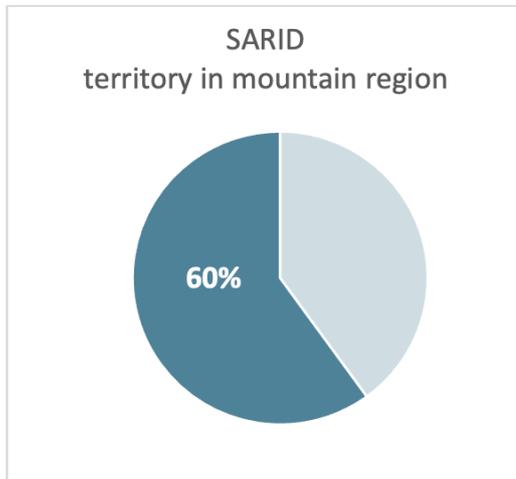
. **AGRICULTURAL PRODUCTION:**

- CROPS: crop, fruits, vegetables **35**
- GRAPES: wine **5**
- ANIMAL: meat and dairy **0**

. **WATER:** quantity and quality **20**

. **BIODIVERSITY:** quantity and quality **20**





. **GDP :** 170

. **MONEY :** 35 ramlats (rml)

. **KNOWLEDGE:**

- KNOWLEDGE CREATION: high education, research 10
- KNOWLEDGE APPLICATION: technology sector 20

. **WELL-BEING:**

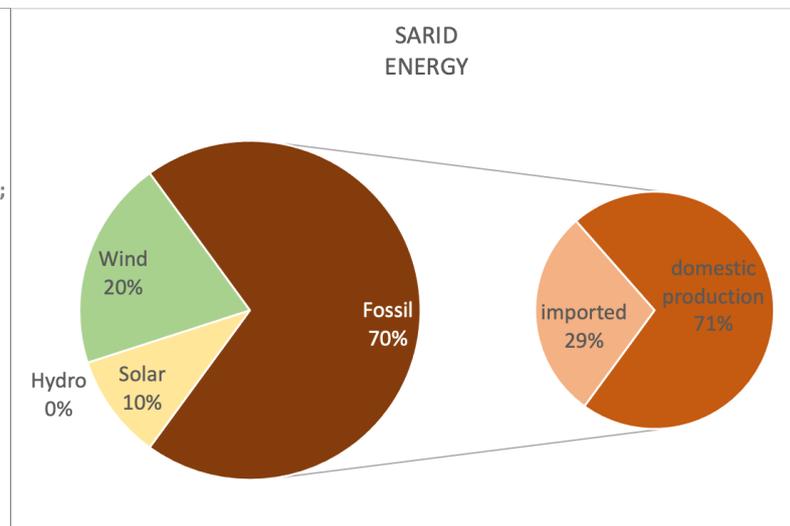
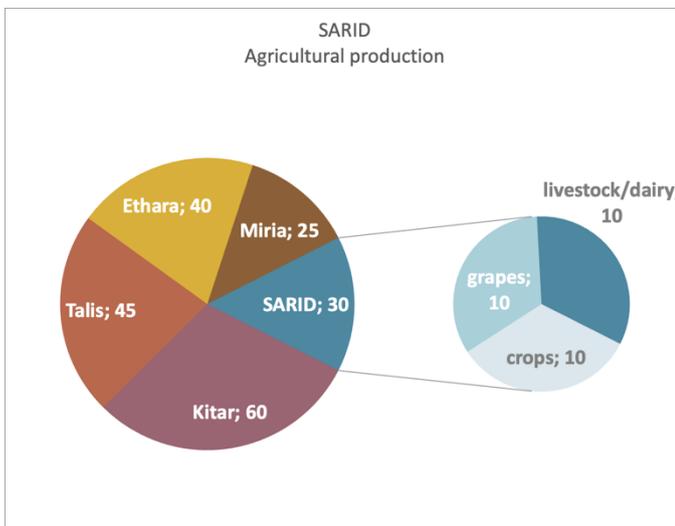
- INDIVIDUAL WELL-BEING: health, education, happiness 15
- COLLECTIVE WELL-BEING: territorial cohesion, trust in government 20

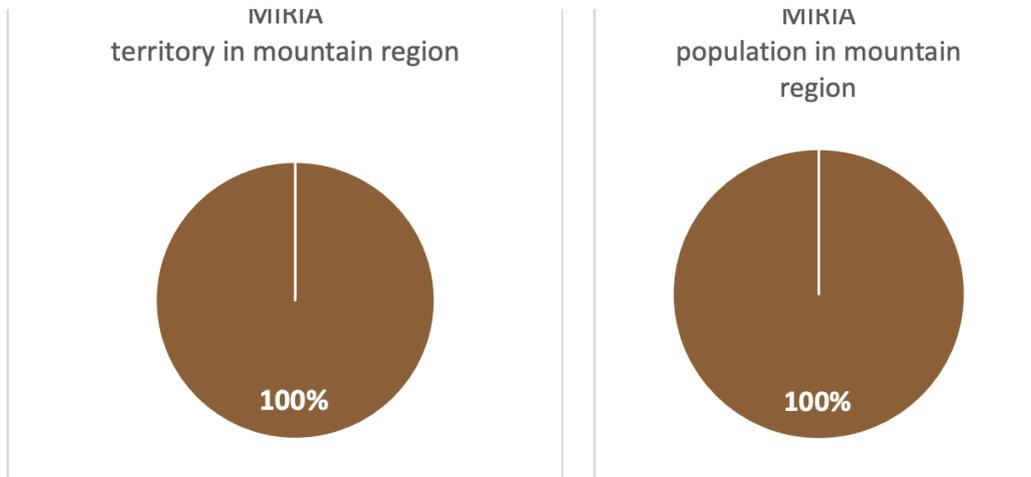
. **AGRICULTURAL PRODUCTION:**

- CROPS: crop, fruits, vegetables 10
- GRAPES: wine 10
- ANIMAL: meat and dairy 10

. **WATER:** quantity and quality 25

. **BIODIVERSITY:** quantity and quality 15





. GDP : 235

. MONEY : 50 ramlats (rml)

. KNOWLEDGE:

- KNOWLEDGE CREATION: high education, research 20
- KNOWLEDGE APPLICATION: technology sector 40

. WELL-BEING:

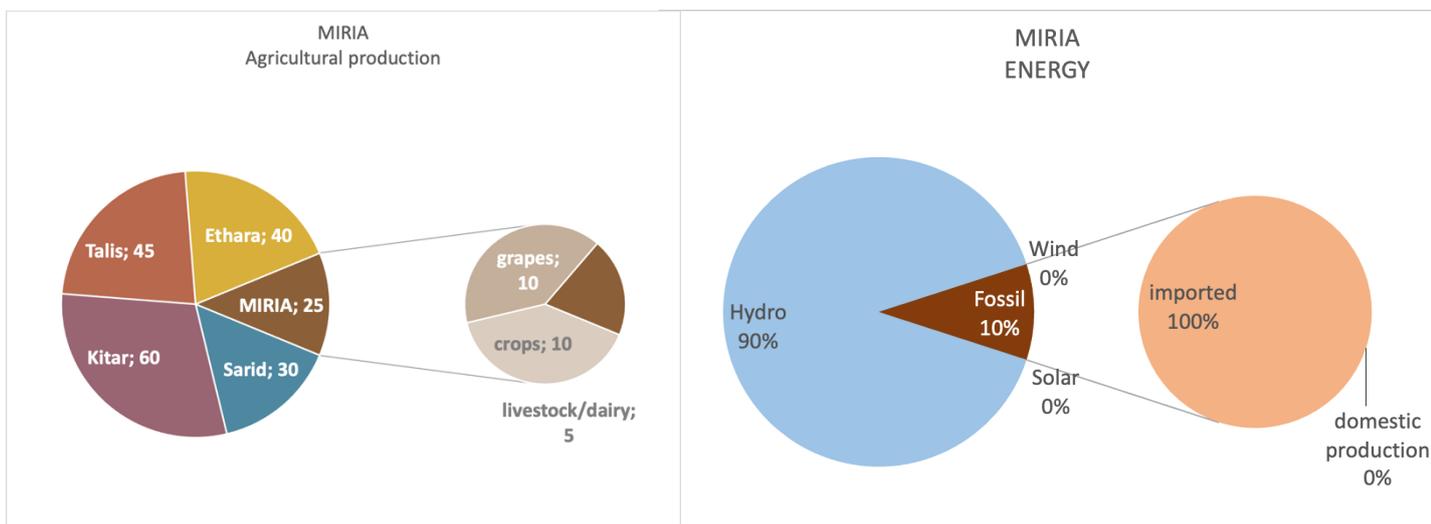
- INDIVIDUAL WELL-BEING: health, education, happiness 25
- COLLECTIVE WELL-BEING: territorial cohesion, trust in government 25

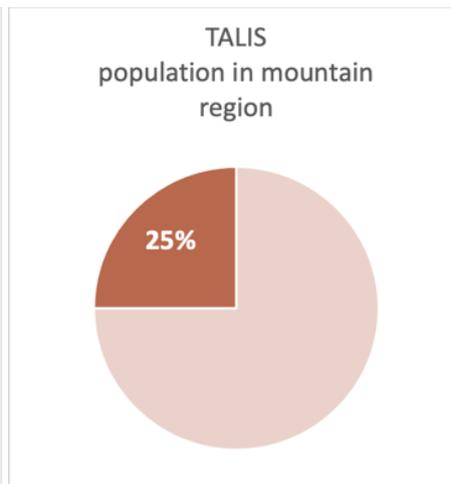
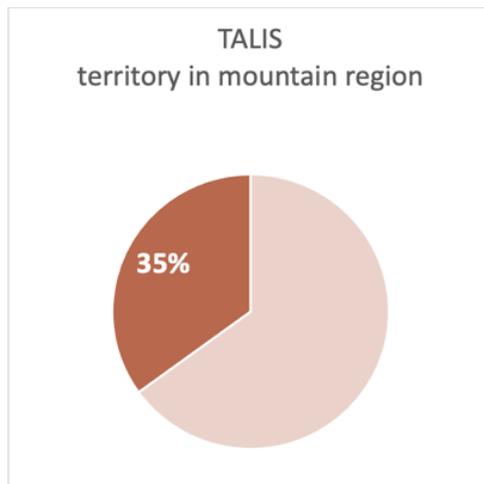
. AGRICULTURAL PRODUCTION:

- CROPS: crop, fruits, vegetables 10
- GRAPES: wine 10
- ANIMAL: meat and dairy 5

. WATER: quantity and quality 40

. BIODIVERSITY: quantity and quality 10





. **GDP :** **185**

. **MONEY :** **40 ramlats (rml)**

. **KNOWLEDGE:**

- KNOWLEDGE CREATION: high education, research **20**
- KNOWLEDGE APPLICATION: technology sector **10**

. **WELL-BEING:**

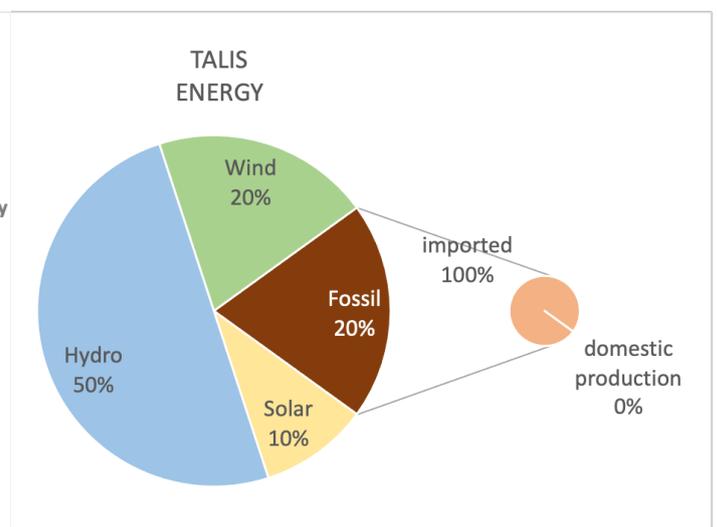
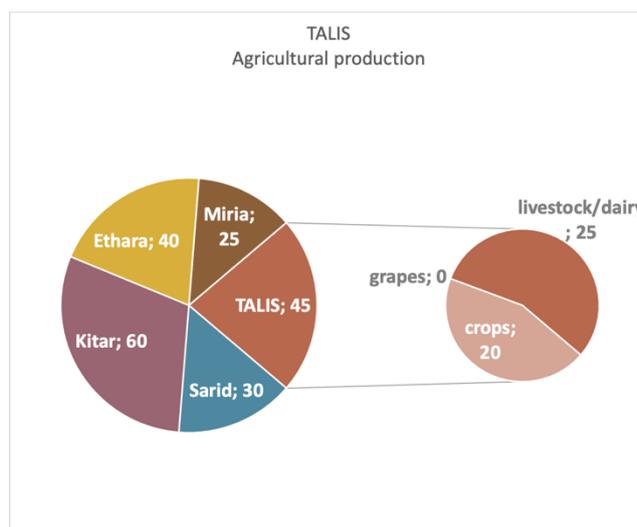
- INDIVIDUAL WELL-BEING: health, education, happiness **15**
- COLLECTIVE WELL-BEING: territorial cohesion, trust in government **10**

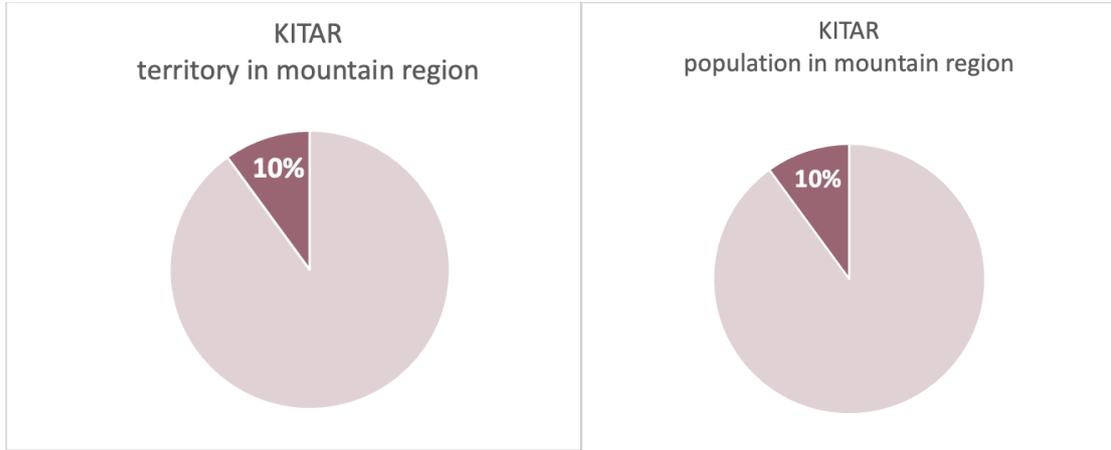
. **AGRICULTURAL PRODUCTION:**

- CROPS: crop, fruits, vegetables **20**
- GRAPES: wine **0**
- ANIMAL: meat and dairy **25**

. **WATER:** quantity and quality **30**

. **BIODIVERSITY:** quantity and quality **15**





. GDP : 280

. MONEY : 100 ramlats (rml)

. KNOWLEDGE:

- KNOWLEDGE CREATION: high education, research **10**
- KNOWLEDGE APPLICATION: technology sector **15**

. WELL-BEING:

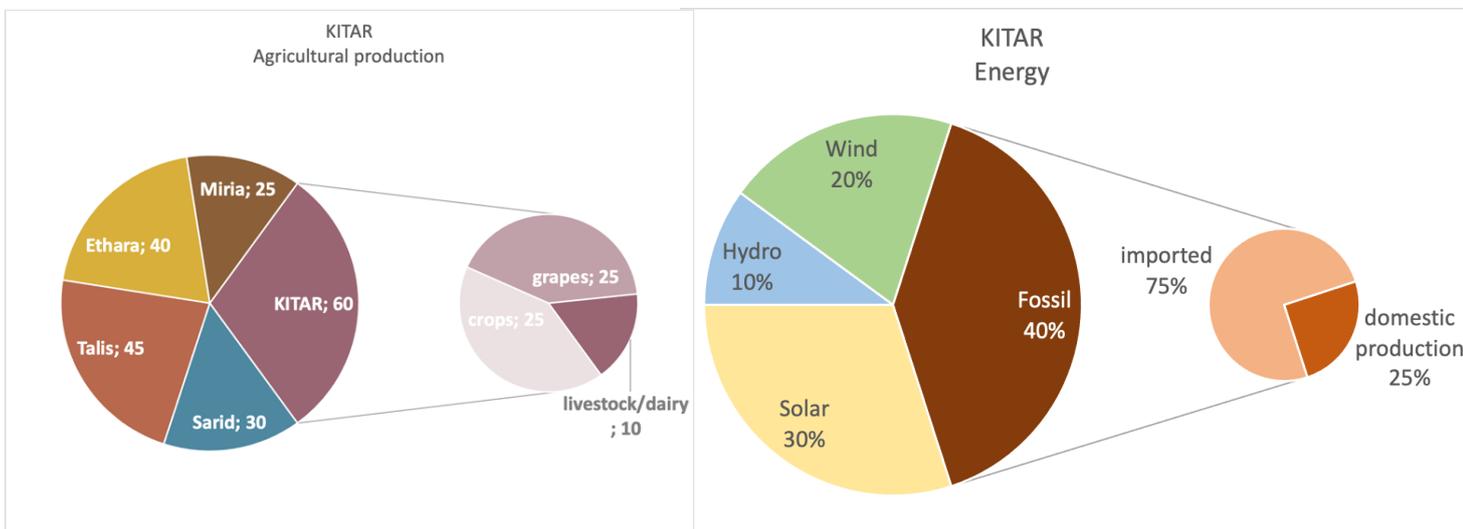
- INDIVIDUAL WELL-BEING: health, education, happiness **20**
- COLLECTIVE WELL-BEING: territorial cohesion, trust in government **10**

. AGRICULTURAL PRODUCTION:

- CROPS: crop, fruits, vegetables **25**
- GRAPES: wine **25**
- ANIMAL: meat and dairy **10**

. WATER: quantity and quality 45

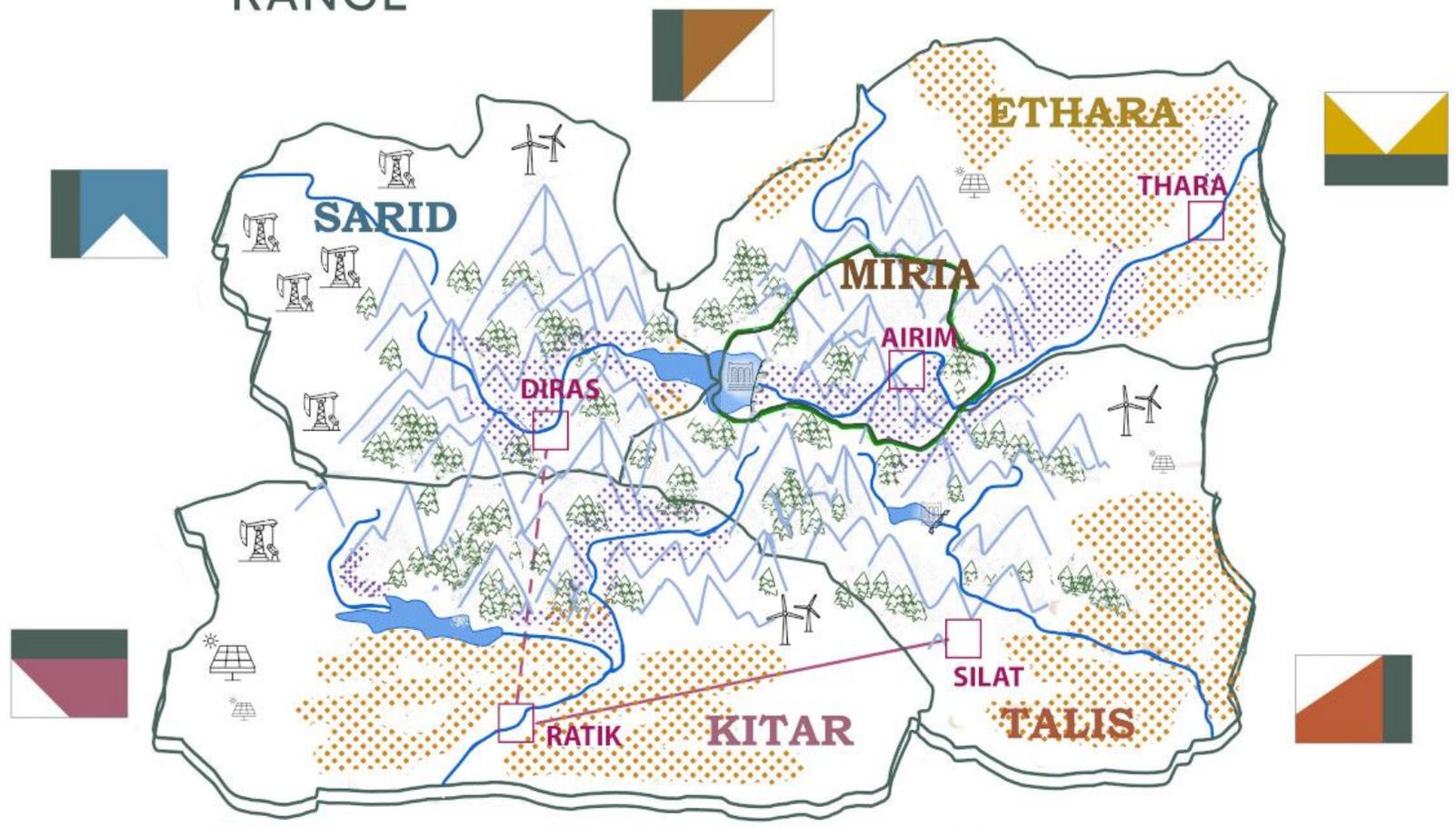
. BIODIVERSITY: quantity and quality 20



Annex 13: Tamlar Range map

tamlar

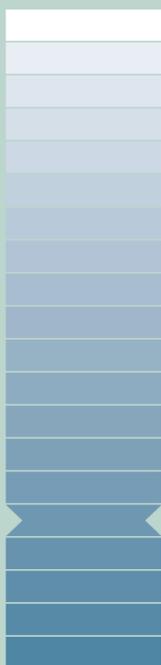
RANGE



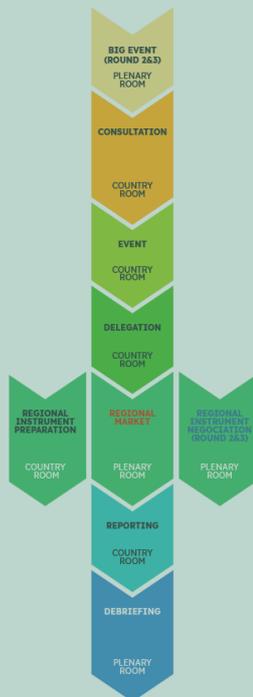
- railway (completed)
- railway (planned)
-  wind turbine
-  solar farm
-  reservoir
-  oil
-  crops, fruit, vegetables
-  grapes

Annex 14: Country board (example of Sarid, see Materials on mountains-connect.org for printable versions of all five country boards)

Adaptive capacity



Timeline

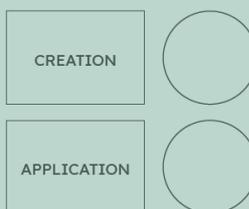


Resources

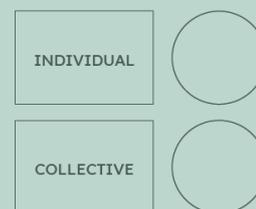
Monetary reserve



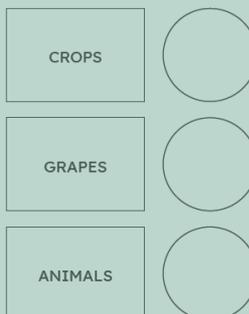
Knowledge



Well-being



Agriculture



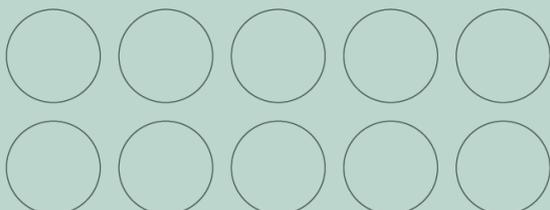
Water



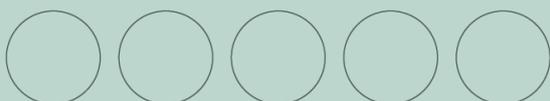
Biodiversity



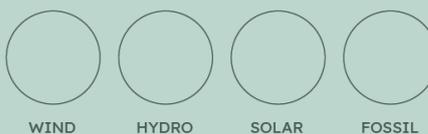
National assets



Regional assets



Energy



A country board