



Practical Guide to the Climagine Methodology for ICZM Practitioners



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Glossary

- **Amoeba Diagram:** A visual radar chart used to map the current and future states of indicators against their defined Band of Equilibrium.
- **Band of Equilibrium (BoE):** The "safe operating space" established by setting minimum and maximum sustainability thresholds for a given indicator.
- **Child Project 2.1 (CP 2.1):** A GEF MedProgramme project aimed at supporting ICZM implementation, climate resilience, and water security in Mediterranean coastal zones.
- **Climagine:** A systemic, participatory foresight methodology developed by Plan Bleu that engages local stakeholders to assess and plan the sustainable future of their coastal socio-ecological systems.
- **Coastal Zone:** The geomorphologic area on either side of the seashore defined by the complex interactions between marine and land environments and human activities.
- **DPSIR Framework:** An analytical model (Drivers, Pressures, State, Impact, Response) used to structure indicator selection and map socio-ecological relationships.
- **GEF MedProgramme:** A major regional programme focused on reducing transboundary environmental stresses and improving climate resilience across the Mediterranean.
- **Integrated Coastal Zone Management (ICZM):** A dynamic, continuous process designed to sustainably manage coastal zones by balancing ecological fragility with diverse human activities.
- **Nature-based Solutions (NbS) & Ecosystem-based Adaptation (EbA):** Approaches that utilize ecosystem conservation and restoration to help coastal communities adapt to climate change.
- **PAP/RAC & Plan Bleu/RAC:** Regional Activity Centres of the UNEP Mediterranean Action Plan (MAP) responsible for advancing sustainable coastal governance and executing the Climagine methodology.
- **Priority Sectors:** Key thematic areas—such as tourism, water, or waste—identified by stakeholders for targeted intervention in a Coastal Management Plan.
- **RACER Criteria:** A practical filter to ensure selected indicators are Relevant, Accepted, Credible, Easy to monitor, and Robust.
- **SMART Criteria:** A framework to verify that proposed indicators are Specific, Measurable, Achievable, Relevant, and Time-bound.
- **Soft Systems Methodology (SSM):** A method of inquiry grounded in soft systems theory, addresses complex, real-world situations characterised by ambiguity, subjectivity, and diverse stakeholder perspectives.
- **Sustainability Dimensions (SD):** Broad thematic challenges (e.g., governance, transportation) defined by stakeholders during initial workshops.
- **Sustainability Indicators (SIs):** Measurable variables used to assess the current state of a coastal area and project future scenarios.

1. Introduction & Context

1.1. What is Climagine?

Climagine is a systemic, **participatory foresight methodology** developed by Plan Bleu to support Integrated Coastal Zone Management (ICZM) and climate resilience in the Mediterranean. Originally adapted from the "**Imagine**" approach in 2012 to specifically address climate change and variability, it is designed to help local communities, regions, and countries develop actionable coastal adaptation and management plans. At its core, Climagine is a **tool for co-creating sustainable futures**. It bridges the gap between complex scientific diagnostics and local realities by bringing together diverse stakeholders, from national authorities and scientists to civil society, local communities, and the private sector. The fundamental philosophy of Climagine is to treat every participant as an "expert at their own level".

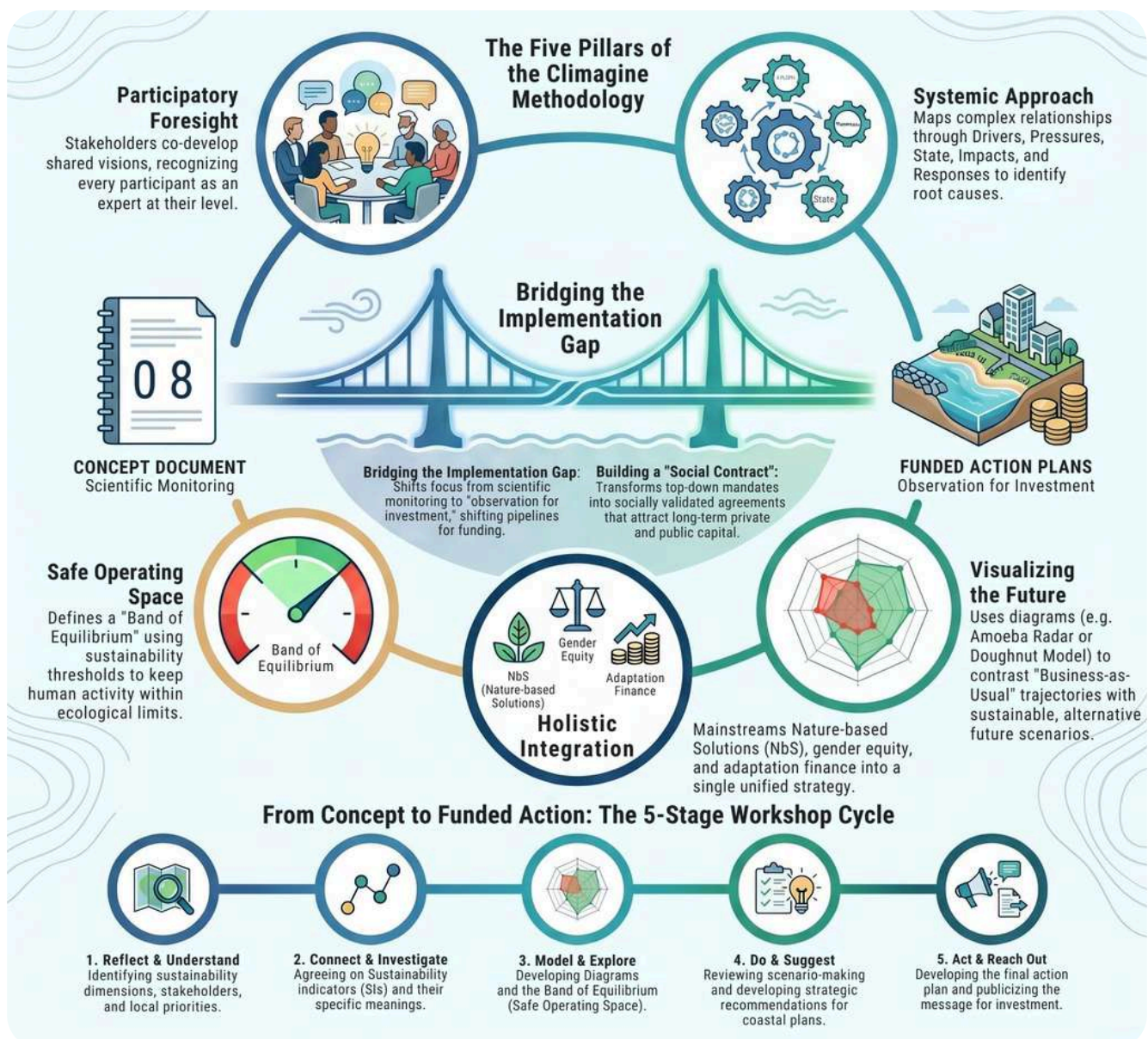


Figure 1. The Five Pillars of the Climagine Methodology

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Climagine goes beyond linear forecasting by integrating Soft Systems Methodology (SSM) to explore future scenarios. It helps stakeholders move from divergent views to a shared, sustainable vision for their coastal socio-ecological systems, answering "What do we do if...?" questions to design resilient strategies. It utilizes analytical models like the Drivers, Pressures, State, Impact, Response (DPSIR) framework to map complex relationships between human activities, economic pressures, and the environment. This ensures that problems are directly translated into actionable, measurable solutions. The process identifies specific Sustainability Indicators (SIs) to measure progress. Through workshops, stakeholders collaboratively define a "Band of Equilibrium" (BoE) for each indicator, establishing clear minimum and maximum sustainability thresholds that determine the safe operating limits for the environment. To ensure decision-maker buy-in, complex indicator data is translated into intuitive visual tools, such as Amoeba (Radar) diagrams or the simplified "Doughnut" model. These visuals clearly illustrate the magnitude of change required by comparing unsustainable "Business-as-Usual" (BAU) trajectories with sustainable alternative scenarios. Modern Climagine applications systematically mainstream crucial cross-cutting themes into the planning process from day one. This includes integrating gender-sensitive climate risk assessments, Nature-based Solutions (NbS), Ecosystem-based Adaptation (EbA), and the mobilization of coastal adaptation finance. Ultimately, Climagine is not just a tool for producing a technical document; it is a mechanism to bridge the "implementation gap". By anchoring the foresight process in local realities and securing early stakeholder ownership, it transforms top-down mandates into socially validated, ideally legally binding action plans that are ready for investment.

1.2. Key Lessons from the Field

Drawing from over a decade of implementations, from the foundational GEF MedPartnership pilots in [Croatia](#) and [Tunisia](#) to the recent GEF MedProgramme experiences in [Montenegro](#), [Morocco](#), and [Lebanon](#), Climagine has yielded critical, actionable lessons for practitioners. These insights are essential for navigating complex governance, managing data limitations, and ensuring long-term impact.

Building Local Ownership and Overcoming Institutional & Territorial Fragmentation



Drawing from over a decade of implementations, from the foundational GEF MedPartnership pilots in [Croatia](#) and [Tunisia](#) to the recent GEF MedProgramme experiences in [Montenegro](#), [Morocco](#), and [Lebanon](#), Climagine has yielded critical, actionable lessons for practitioners. These insights are essential for navigating complex governance, managing data limitations, and ensuring long-term impact.

In many coastal zones, the primary challenge is deep horizontal and vertical fragmentation, or a severe lack of local buy-in.

- The **Challenge**: In Montenegro's Boka Kotorska Bay, three municipalities shared the same bay but operated in administrative silos, leading to uncoordinated infrastructure and conflicting narratives. In Morocco's Tangier-Tetouan-Al Hoceima region, planners had to manage vast territorial disparities across a massive administrative area spanning two maritime facades.

- In Tunisia's Kerkennah archipelago, stakeholders were unaware of a pre-existing 2008 ICZM plan, demonstrating a lack of local ownership and implementation.
- The Actionable Lesson: Climagine must unify actors and secure high-level local backing. In Montenegro, the methodology successfully pushed stakeholders to look beyond administrative borders and treat the bay as a single, shared socio-ecological system. In Croatia's Šibenik-Knin County, securing the direct support of the local prefect resulted in a highly active coastal plan that won a climate adaptation award and remains active today. To empower local actors, practitioners must carefully choose workshop locations; in Tunisia, holding workshops locally rather than in the capital made community members feel less intimidated and improved the quality of their contributions. Furthermore, in Lebanon's Damour Basin, planners deliberately used natural hydrological boundaries (a 'source-to-sea' approach) instead of administrative ones. This strategy helped stakeholders treat the area as a single, shared socio-ecological space and significantly boosted local community engagement and ownership. Practitioners should advocate for formal inter-municipal coordination committees early in the process to ensure collective action.

Managing Data Scarcity and "Expert Silos"



Climagine is not scale-neutral and must be adapted to the realities of data availability.

- The Challenge: In Tunisia, massive data gaps prevented the use of planned scientific models (RiVAMP), meaning standard Amoeba diagrams and quantitative indicators could not be produced. In Croatia, data collection for the Amoeba diagram was also highly difficult, while Lebanon faced severe data fragmentation and "expert silos".
- The Actionable Lesson: A lack of data should never paralyze the process. When quantitative models fail, pivot to qualitative frameworks. In Tunisia, practitioners successfully adapted by using a qualitative "Services-Threats-Solutions" (STS) approach based on local knowledge and GIS mapping. In Lebanon, a "Three Tiers of Data Evaluation" system was used to systematically categorize missing data as a strategic response action. Practitioners should also establish a dedicated local expert team early on (a key success factor in Croatia) to translate qualitative community ambitions into measurable proxy indicators.

Avoiding Common Pitfalls: The Implementation Gap and Loss of Momentum



Participatory workshops risk becoming static "foresight exercises" without concrete integration into statutory laws and budgets.

- The Pitfall: The most significant threat across all sites was the "Implementation Gap"—where recommendations remain theoretical because they lack dedicated financial resources or executive enforcement. Another frequent pitfall, noted especially in Croatia and Montenegro, was the decline of momentum and inconsistent participant attendance between workshops.

- The Actionable Lesson: Preparation and financial mapping are paramount. Before workshops begin, conduct pre-workshop interviews (which proved highly effective in mapping local capacities in Croatia) and Rapid Stakeholder Assessments (RSA). To secure implementation, practitioners must map existing funding mechanisms from Day 1. As demonstrated by the lack of implementation in Tunisia, a key recommendation is that future coastal plans must be explicitly linked to National Development Plans (e.g., 5-year plans) to unlock national funds. Furthermore, practitioners must actively involve the private sector (like insurance companies) to align actions with concrete investment portfolios. Finally, prevent the loss of momentum by using continuous monitoring mechanisms between sessions, such as short briefing notes, pre-workshop questionnaires, and online platforms.

1.3. Adapting to Your Context: Tailoring the Methodology

A fundamental lesson from over a decade of field implementations is that Climagine is not a rigid, scale-neutral template. Before beginning the workshop phases, practitioners must conduct a preliminary diagnosis (Phase 0) using tools like the Rapid Stakeholder Assessment (RSA) and a legal framework mapping to assess their specific territorial realities.

Based on this rapid assessment, the methodology must be aggressively tailored along three main axes: Data Availability, Governance Structure and Territorial Scale.

Data-Rich vs. Data-Poor Contexts

Data scarcity is a recurrent hurdle across Mediterranean coastal zones. To quickly assess your context, apply the 3-Tier Data Classification system to existing datasets: Tier 1 (reliable, validated data), Tier 2 (usable estimates), and Tier 3 (absent data).

- In a Data-Rich Context: Deploy the full analytical power of Climagine, using quantitative indicators, advanced modeling, full Amoeba (Radar) diagrams, and robust Cost-Benefit Analyses (CBA) to evaluate proposed adaptation measures.
- In a Data-Poor Context: Flexibility is key. If data is mostly Tier 2 or 3, pivot to qualitative frameworks. Instead of forcing local communities to grapple with complex, data-heavy Amoeba diagrams, split the process into two tracks. Use a "Community Track" relying on highly simplified, qualitative multiple-choice assessments (e.g., rating issues from 1 to 5) to capture local realities without requiring hard data. Meanwhile, the "Expert Track" can use the DPSIR (Drivers, Pressures, State, Impact, Response) framework to translate these qualitative problems into measurable proxy states, or explicitly categorize "data gathering" itself as a strategic, fundable priority response.

Centralized vs. Decentralized Governance Systems

The RSA and power mapping exercise will reveal who holds the actual mandate to implement coastal policies. The workshop design must reflect this power dynamic:

- **Centralized Systems (National Dominance):** In contexts where national authorities hold the power (e.g., Lebanon's National ICZM Strategy), grassroots workshops alone will fail to bridge the implementation gap. Practitioners must prioritize high-level institutional alignment early on. The goal here is to establish formal inter-ministerial coordination platforms and ensure that workshop outputs are explicitly integrated into statutory national policies and budgets.
- **Decentralized Systems (Municipal/Local Autonomy):** In contexts where local actors have autonomy but territories are fragmented (e.g., Montenegro's Boka Kotorska Bay, shared by three independent municipalities), the primary threat is administrative "silos". Here, Climagine must be used as a unifying, consensus-building platform. Workshops should focus heavily on grassroots stakeholder engagement and mandate the creation of formal inter-municipal coordination committees for shared resources (like waste and water infrastructure) to overcome territorial fragmentation.

Small vs. Large Territorial Scales



- **Small/Homogeneous Areas:** Practitioners can use generalized plenary sessions and develop a single, unified set of indicators for the entire planning area.
- **Large/Heterogeneous Regions:** For massive administrative regions spanning diverse contexts (e.g., Morocco's Tangier-Tetouan-Al Hoceima region, covering two maritime facades), a unified approach will dilute local specificities. Practitioners must use sub-regional clustering or geographically distinct "geo-zones", creating localized indicator subsets to ensure that provincial realities and disparities are not overlooked in the final regional plan.

2. Step-by-Step Implementation Guide

In the following chapter the Climagine methodology is explained step-by-step. Please note that this is done based on the experience from the GEF MedPartnership and the GEF MedProgramme which was implemented in the frame of the ICZM and Coastal Plan development. However, the methodology can be used in diverse contexts.

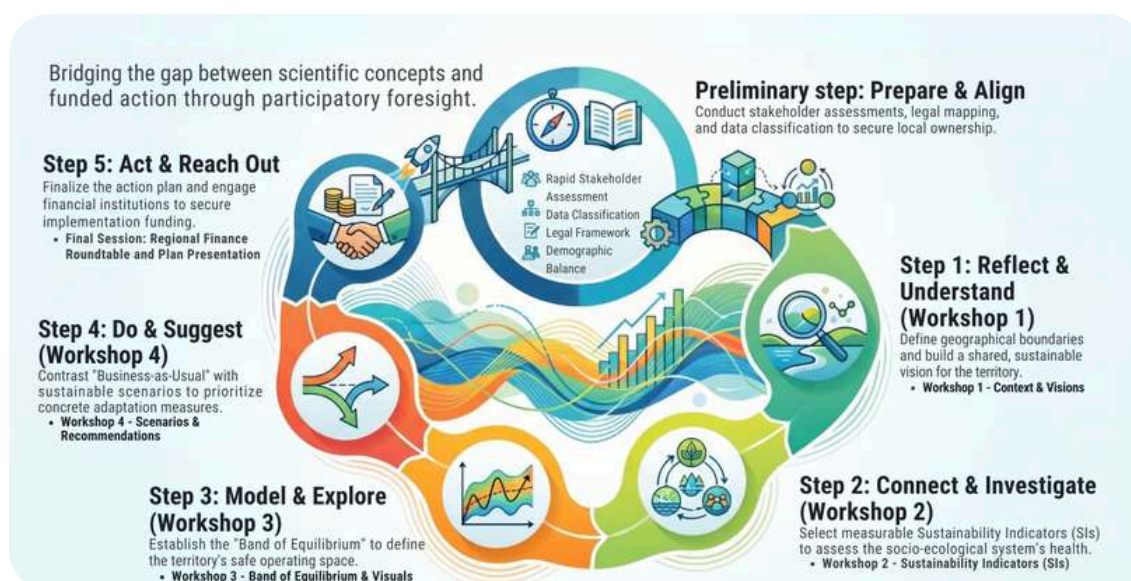


Figure 2. The Climagine workshop cycle.

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Also the provided structure is a proposition for the Climagine process. A vital part of the transfer and adoption of the methodology is to adapt certain parts to the local context of application, ensuring that the methodology is not treated as a rigid, scale-neutral template, but rather a flexible framework that responds to local realities, available data, and governance capacities.

2.1. Preliminary step: Prepare & Align

A critical lesson from over a decade of implementations is that the success of Climagine relies heavily on an extensive preparatory phase. Before organizing the first workshop, practitioners must lay the groundwork to secure local ownership, assess data realities, and ensure that the process will lead to legally binding and funded actions.

Mapping Stakeholders and Analyzing Power Dynamics (RSA)



To prevent dominant institutional voices from hijacking the process, practitioners must conduct a Rapid Stakeholder Assessment (RSA).

Action: Use a Power Analysis Matrix to map each stakeholder's level of influence, interest, and anticipated role (e.g., inform, consult, involve, collaborate).

Demographic Balance: Similarly, gender-sensitive climate risk assessments should be conducted before the first Climagine workshop. These assessments support the mainstreaming of gender aspects into the process from the start. Ensure the meaningful integration of women and representation across all age groups (from youth to the elderly) in all invitations. If demographic balance is not secured from day one, there is a high risk that the workshops will follow the wrong track.

Pre-engagement: Send a pre-workshop questionnaire to invited participants to map their priorities and ask them to bring available data and reports to the first session.

Securing the Legal Framework and Early Funding Alignment



A major pitfall is formulating recommendations that fall outside the jurisdiction of the participating actors or lack financial backing.

Legal Mapping: Conduct a legal and institutional framework analysis to clearly map local legal mandates. This ensures that all proposed interventions will fall strictly within the jurisdiction of the competent authorities responsible for their implementation.

Financial Alignment: To bridge the "implementation gap," conduct a rapid financial capacity assessment. Map existing funding mechanisms and engage private sector stakeholders (such as real estate developers and insurance companies) and financial institutions early on, ensuring that future actions can be aligned with concrete investment portfolios.

Tool: Using the "Climagine Indicator Library"¹ and Data Classification

Asking participants to build complex sustainability indicators from scratch consumes excessive time and exhausts stakeholders.

The Indicator Library: Instead of starting from zero, use the "Climagine Indicator Library", a database of generic indicators designed to cover approximately 75% of standard needs while aligning with broader Mediterranean frameworks like IMAP and the Mediterranean Strategy for Sustainable Development (MSSD).

3-Tier Data Classification: Before selecting indicators, systematically pre-classify existing local data into three tiers to identify gaps early:

Tier 1: Reliable, validated data.

Tier 2: Usable estimates.

Tier 3: Absent data.

Another important factor to keep in mind in this phase are the **facilitator** selection criteria. To effectively manage unequal power dynamics and ensure all voices are heard, practitioner teams should focus on the following components on facilitation. Lead facilitators should be objective, external experts trained in the Climagine process, possessing strong empathy and no vested interests in the territory's planning outcomes. Additionally, a neutral external facilitator (who manages the process and group dynamics) could be paired with local experts (who strictly provide technical clarifications and contextual knowledge) for facilitation.



Quick Checklist for the Preliminary Phase:

- ☐ Conduct the Rapid Stakeholder Assessment (RSA), including analysis of power dynamics
- ☐ Verify demographic balance (gender and age) for the participant list
- ☐ Conduct a gender-sensitive climate risk assessment
- ☐ Map local legal mandates and overlapping institutional frameworks
- ☐ Map existing funding mechanisms and identify private sector/financial actors to invite
- ☐ Apply the 3-Tier data classification to existing reports to spot data gaps
- ☐ Send a survey prior to the workshop (e.g., using pre-workshop questionnaires to map local needs and allow participants to come prepared with relevant data)

¹ This library of generic indicators is not yet developed, but could be the object of future activities and projects from Plan Bleu, where this Climagine Library of Generic Indicators could be developed.



Common Pitfalls to Avoid:

- **Failing to verify data availability before starting**, leading to reliance on fragmented or non-existent data for the indicators
- **Allowing dominant institutional actors** to overshadow minority or local community perspectives, especially if demographic representation is not secured
- **Proceeding without identifying existing legal boundaries** and overlapping institutional mandates, leading to future implementation roadblocks

2.2. Preliminary step: Prepare & Align

WORKSHOP 1: Understanding the context - gaining insights into locally defined concerns.

The primary goal of Workshop 1 is to set the stage, define the exact scope of the intervention, and build a unified, sustainable vision for the coastal territory. It moves participants from fragmented, sector-specific complaints toward a shared understanding of the local socio-ecological system.

Defining Geographical Boundaries and Baseline Diagnostics



Geographical Boundaries and Baseline Diagnostics

A frequent mistake in participatory planning is asking communities to brainstorm without a factual baseline, which often leads to uninformed debates.

- **The Baseline Presentation:** Before any group work begins, the project team must present a scientific diagnostic of the area, prominently including the gender-sensitive climate risk assessment. This data must be translated into non-technical language and visual aids (e.g., maps, photos) so that diverse audiences, from farmers to political leaders, can fully understand the stakes.
- **Defining System Boundaries:** Administrative borders rarely match environmental realities. At the very beginning, practitioners must explicitly define the geographical boundaries of the system. Whenever possible, advocate for natural boundaries, such as a "source-to-sea" hydrological basin (as successfully implemented in the Damour River Basin, Lebanon), which forces stakeholders to see how upstream actions (like agriculture) directly impact downstream coastal zones.

"The Coastal Management Plan is an integrative and strategic document complementary to other plans, that comprises a sustainability vision and climate change adaptation actions."

Ivan Sekovski (PAP/RAC)



Time	Actions
1:00 hour	Plenary: Presentation of Scientific Diagnostics , including the gender-sensitive climate risk assessment. This must be done <i>before</i> the brainstorming sessions to ground the debate in robust evidence and avoid intensifying discussions on environmental challenges without a factual baseline. Information should be translated into non-technical language using visual aids to accommodate diverse audiences.
2:00 hours	Group: Create the Vision & Identify Challenges • Define the sustainability visions for the area (e.g., through the collaborative creation of "Rich Pictures" or emotional storytelling to break the ice, sweep in all concerns, conflicts, and ideas). • Identify the key challenges and issues relevant to coastal development and climate change adaptation while explicitly defining the system boundaries (e.g., administrative borders vs. natural source-to-sea basin limits) to ensure consistent discussions.
0:30 minutes	Plenary: Present Visions & Challenges The facilitator's role here is crucial: they must weave these individual narratives into a single, cohesive group vision (e.g., " <i>Boka Kotorska as an example of culture and nature living in harmony</i> ").
2:00 hours	Group: Sustainability Dimensions, Actions & Data Check • Prioritise and classify the raw key challenges and issues identified under broader general themes (biodiversity, transportation, i.e., <i>Sustainability Dimensions</i>). • Discuss the key challenges and select main actions to address them. • Systematic NbS & Gender Integration: Ensure Nature-based Solutions (NbS) criteria and gender considerations are systematically filtered into the actions from Day 1. Do not treat them as standalone topics; instead, force the linkage (e.g., <i>Challenge -> Proposed Action -> NbS Criterion -> Gender Impact</i>). • Note the availability of data for selected actions/solutions using a 3-Tier classification system (Tier 1: reliable, Tier 2: estimates, Tier 3: absent) to explicitly target data gaps early.
0:45 minutes	Plenary: Synthesis Present sustainability dimensions and main actions to address challenges. Sum up the overarching sustainability dimensions.

Table 1 : Proposed Structure for the Group Activity in Workshop 1



What we would propose: Organise a training on Nature-based Solutions (NbS) and Ecosystem-based Adaptation (EbA) back-to-back to the first Climagine approach. In this way you can make sure that concepts of ecosystem-based adaptation are understood and potential NbS indicators could be integrated from the beginning. Two regional trainings on NbS and EbA have been conducted in Montenegro and Morocco. You can find more information on these trainings in Plan Bleu's report [here](#).



Quick Checklist for Step 1:

- ☐ Set the stage using tailored communication strategies for different stakeholders (from experts to farmers and local municipalities)
- ☐ Establish and understand the local and regional context by acknowledging existing overlapping mandates and fragmented governance
- ☐ Present scientific diagnostics to inform the participants before any group work begins to prevent discussions from drifting into purely theoretical or uninformed complaints
- ☐ Map stakeholders' vision of the area using creative and inclusive tools like "Rich Pictures"
Agree on the key issues and priorities
- ☐ Identify sustainability dimensions and begin framing them within the DPSIR methodology
- ☐ Select actions to address key challenges while explicitly integrating NbS and climate risk criteria into the proposed solutions
- ☐ Begin forming a local group of experts to later help translate these ambitions into measurable indicators
- ☐ Map missing stakeholders (e.g., private sector, heritage protection, finance/investment sector) and define strategies to engage them in Workshop 2 (e.g., [workshop report 1 for Damour](#))
- ☐ Provide gender and demographic statistics (participants, speakers) to ensure continuous representativeness and inclusive decision-making

GROUP 1

Sustainability Vision: "Boka Kotorska as an example of culture and nature living in harmony."

Key challenges

- **Construction:** devastation of space due to inadequate construction practices
- **Depopulation** in villages and rural areas
- **Education:** promoting environmental education of the general public and at all levels
- **Extreme weather events**
- **Tourism:** putting constraints on cruising tourism
- **Transport:** developing more sustainable transport infrastructure
- **Waste:** Inadequate waste management

Priority actions

- **Education:** implementation of adequate education in schools and raising awareness
- **Emergencies:** establishing a Regional Centre for Emergencies (weather, extreme events, maritime incidents)
- **Enforcing regulations:** undertaking stronger inspection controls (spatial planning/urbanisation, grey economy, tourism...)
- **Infrastructure:** modernisation and expansion of communal infrastructure and infrastructure in the coastal hinterland, providing support for the adaptation of existing development projects (buildings, homes, etc.)
- **Supporting local food systems:** valorisation and promotion of agricultural products
- **Sustainable growth:** balancing nature conservation and economic development
- **Tourism:** extension of the touristic season, harmonising touristic offer with accommodation capacities, balancing the cruising industry (constraints on the number and size of vessels)
- **Transport:** efficient use of Tivat airport (low-cost companies as a means to decrease the impact of single point tourism, e.g. from cruising), regulating internal maritime traffic, implementing public maritime transport and other sustainable means of transport such as cable cars, rental bicycles and scooters and building road bypasses

Sustainability Dimensions: governance, education, protection of nature, sustainable tourism, transportation

Figure 3. Example of results from one group (Montenegro) for Workshop 1.



Project Team

(to do before the next workshop:)

- ☐ Experts rework overarching dimensions and send results to participants for validation/or let them validate this during the second workshop.
- ☐ Translate these aspects of sustainability into a list of quantitative and qualitative indicators
- ☐ Linking sustainability dimension to priority sectors of the Coastal Plan
- ☐ Provide tailored communication materials and present the scientific diagnostic baseline to stakeholders to avoid intensifying discussions on environmental challenges without robust evidence.
- ☐ Ensure Nature-based Solutions (NbS) and gender criteria are systematically filtered into the priority sectors from day one, rather than treating them as standalone focuses
- ☐ Begin framing issues using the DPSIR (Drivers, Pressures, State, Impact, Response) framework, embedding Climagine indicators within a systemic methodology



Common Pitfalls to Avoid:

- **Non-representative stakeholder group**
- **Failing to explicitly define geographical and governance boundaries** (e.g., river basin "source-to-sea" vs. administrative borders), leading to fragmented discussions where participants focus only on their strict administrative borders.
- **Overcomplicating the language** and using heavy academic terms with local communities instead of simplified, relatable visual storytelling.

2.3. Step 2: Connect & Investigate

WORKSHOP 2: Agreeing on Sustainability Indicators (SIs) to assess their meanings, and agreeing with stakeholders on their acceptable, sustainable values.

The main goal of Workshop 2 is to transition from the broad Sustainability Dimensions identified in Workshop 1 to specific, measurable, and actionable Sustainability Indicators (SIs) for each priority sector. Because indicator selection forms the backbone of the entire planning process, this step must systematically filter out unmeasurable ideas while retaining local relevance.

Selecting Actionable Sustainability Indicators (SIs)



A major pitfall is asking participants to build complex indicators from a blank page, which exhausts stakeholders and consumes excessive time. Instead, practitioners should use a Two-Step Co-creation Approach:

- 1. Stakeholder Shortlisting (The "What"):** Provide participants with the Climagine Indicator Library² (a pre-compiled list covering ~75% of standard Mediterranean metrics, aligned with IMAP and MSSD). Stakeholders select and rank the indicators most relevant to their local realities. For this current Guide, we advise practitioners to refer to the [IMAP](#) and [MSSD](#) indicators, as well as the indicators available in the [Plan Bleu Observatory](#) as an immediate starting point. The complete development of this Climagine Indicator Library will be proposed as a specific activity in a follow-up project.
- 2. Expert Refinement (The "How"):** Behind the scenes, technical experts refine these selections using the DPSIR framework (Drivers, Pressures, State, Impact, Response). To ensure the strategy remains actionable, experts must deliberately steer indicators away from "Driving Forces" (e.g., global population growth, which is too broad to control locally) and focus strictly on actionable Pressure, State, and Impact indicators.

Time	Actions
0:20 minutes	Plenary: Recap & Linkage Present the overarching Sustainability Dimensions validated in Workshop 1 and explain how they link to the priority sectors of the Coastal Management Plan.
2:00 hours	Group: Indicator Co-Creation & Filtering • Select Indicators: Using the predefined "Climagine Indicator Library," groups select 3 key indicators per sustainability dimension/sector. • Filter: Apply the RACER criteria and 3-Tier Data Classification to evaluate the feasibility of the chosen indicators (by experts). • Define Thresholds: Begin discussing preliminary acceptable values (thresholds of sustainability) for these indicators.
0:40 minutes	Plenary: Presentation & Debate Each group presents their 3 key indicators per sector. Facilitators cross-check for synergies and overlapping metrics between groups

Table 2. Proposed Structure for the Group Activity in Workshop 2

² Please note, that this is a recommendation from the Technical Workshop conducted in February 2026. The Climagine Indicator Library does not exist as such today, but could be developed in the frame of future application of the methodology.

GROUP 1

Sustainability Dimensions: SUSTAINABLE TOURISM AND AGRICULTURE

Challenges/Indicators

Responsible planning in terms of developing the touristic offer

- Suppression of poaching and illegal fishing
- Linking the touristic offer with agricultural production (establishing cooperation agreements)
- Greater representation of domestic products in the offer of hotels, restaurants, and retail chains and encouraging invisible exports
- Developing and promoting products with added value (e.g., through protected name and origin certifications)

Strengthening cooperation between all touristic structures (horizontal-vertical connections)

- Local tourism organizations (LTOs)
- National tourism organization (NTOs)
- Specialized agencies (special tourist offers)

Supporting the diversification of agriculture with emphasis on strengthening human capacities

- Involving women (aim for 50% of formal workforce) and youth in the sector
- Education (doorstep marketing)

3 Key indicators

- Use of local agricultural products in the tourism sector (as % of total uptake)
- Number of clusters in the agricultural/tourism sectors (at least 10)
- Number of women in the tourism/entrepreneurship sectors (at least 50% of woman)

Linked Sustainability Dimensions: governance, education, sustainable tourism, agriculture, gender

Figure 4. Example of results from one group (Montenegro) for Workshop 2.



Quick Checklist for Step 2:

- ☐ Introduce the Climagine Indicator Library to avoid starting from scratch
- ☐ Have groups select a set of 3 key indicators per priority sector
- ☐ Link sustainability dimensions with priority sectors of the Coastal Management Plan
- ☐ Experts evaluate each indicator using the RACER (Relevant, Accepted, Credible, Easy, Robust) grid and the FAIR (Findability, Accessibility, Interoperability, and Reuse of digital assets) principles for data.
- ☐ Categorize data availability using the 3-Tier system to target gaps
- ☐ Experts structure the selected indicators logically using the DPSIR framework

Tool: Applying RACER and the 3-Tier Data Classification

To systematically address the chronic problem of data scarcity in coastal zones, practitioners must evaluate every proposed indicator through a combined dual-filter grid before final validation:

- Filter 1: The RACER Criteria
 - Relevant: Does it directly measure the priority issue?
 - Accepted: Do local stakeholders understand and agree with it?
 - Credible: Is it scientifically unambiguous to non-experts?
 - Easy to monitor: Is the data collection financially and technically feasible?
 - Robust: Is the data reliable and resistant to manipulation?
- Filter 2: The 3-Tier Data Classification - Instead of abandoning a highly relevant indicator because data is currently missing, categorize it to define the immediate next steps:
- Tier 1 (Reliable): Validated data is readily available. Action: Use directly.
- Tier 2 (Estimates): Usable estimates or proxy data exist. Action: Use for the workshop models, but schedule formal monitoring.
- Tier 3 (Absent): No data exists. Action: Keep the indicator, but explicitly designate "data gathering/monitoring" as the very first funded, strategic Response measure in the final Coastal Plan.

The 3 Final Checks: Before validating the grid, apply three final yes/no filters to the selected indicator: Does it fall under a local Legal mandate? Does it reflect climate change impacts? Does it measure gender equity?



Project Team

(to do before the next workshop:)

- ☐ Submit the finalized stakeholder shortlist to technical experts for baseline data populating before Workshop 3
- ☐ Assess indicators using the RACER criteria (Relevant, Accepted, Credible, Easy, Robust) to ensure they are manageable and practical, especially in data-scarce contexts.
- ☐ Where applicable, separate expert tracks from general community tracks, using qualitative multiple-choice assessments for communities instead of complex analytical diagrams.



Common Pitfalls to Avoid:

- **"Blank Page Syndrome":** Asking non-experts to invent scientific indicators from scratch rather than adapting existing ones from the library
- **Ignoring the 3-Tier System:** Assuming data exists without checking, leading to the selection of "perfect" theoretical indicators that are practically impossible to monitor
- **Expert Silos:** Allowing scientific experts and legal experts to work separately, resulting in indicators that are ecologically sound but legally unenforceable
- **Drivers indicators:** Focusing too heavily on "Driving Forces" (e.g., global population growth) which are often too broad to control locally, instead of focusing on actionable "Pressure," "State," and "Impact" indicators.

2.4. Step 3: Model & Explore

WORKSHOP 3: Developing the graphic Amoeba/Radar Diagram to represent the SIs. Making scenarios to reflect on their future evolution.

The primary goal of Workshop 3 is to establish the "safe operating space" for the coastal territory. It transitions the work from simply listing Sustainability Indicators (SIs) to defining the exact thresholds of what is acceptable and what is dangerous for the local socio-ecological system.

Defining the "Band of Equilibrium" (Safe Operating Space) instead of forcing stakeholders to debate highly precise scientific numbers (which often stalls the process in data-poor environments), practitioners must focus on defining acceptable ranges. This range is the Band of Equilibrium (BoE) or safe operating space.

The Band of Equilibrium (BoE) explained:

To standardize this, apply the **1-to-7** Climagine Sustainability Scale:

1 - 2 (Unsustainable by Default): Activities that are inherently destructive by their very nature (e.g., clearing protected natural areas for construction, illegal sand mining).

3 - 5 (The Band of Equilibrium): The safe operating space. Level 4 is the ideal sustainable target, while 3 and 5 represent the absolute minimum and maximum acceptable limits.

6 - 7 (Unsustainable by Excess): Good practices that have become destructive simply because their rate exceeds the system's regenerative capacity (e.g., extreme groundwater extraction causing saltwater intrusion, or over-tourism)



Colour	Number	Ranking of the SI on the Band of Equilibrium
	1	Unsustainable by default
	2	Low sustainability by default
	3	Lower sustainability threshold
	4	Sustainable
	5	Upper sustainability threshold
	6	Unsustainable by excess
	7	Very unsustainable by excess



Time	Actions
0:30 minutes	Plenary: Recap & Concept Introduction Experts present the refined, validated list of Sustainability Indicators from Workshop 2. The facilitator introduces the concept of the "Band of Equilibrium" (BoE)/ safe operating space using simple, non-technical language and visual aids.
2:00 hours	Group: Defining Thresholds (Dual-Track Approach) To avoid overwhelming participants, split the activity based on audience technical capacity: • Community Track (Qualitative): General stakeholders use, for example, simplified multiple-choice sheets to rate what they consider acceptable vs. unacceptable for each indicator, and to qualitatively assess the current state/value (e.g., "How severe is the current water scarcity, and is this level acceptable?") • Expert Track (Quantitative): Technical experts define the exact numerical minimum and maximum threshold values for each indicator to establish the BoE.
0:30 minutes	Plenary: Synthesis & Scenario Preparation Groups present their acceptable limits. The facilitator outlines the next step: translating these limits into visual "Business-as-Usual" (BAU) vs. "Sustainable" future scenarios.

Table 3. Proposed Structure for the Group Activity in Workshop 3



Quick Checklist for Step 3:

- ☐ Validate the final list of SIs with stakeholders
- ☐ Deploy the qualitative (e.g., multiple-choice) assessments for community stakeholders to capture on-the-ground realities and evaluate the current state.
- ☐ Determine and validate the current value of each indicator alongside its minimum and maximum sustainability thresholds.
- ☐ Elaborate the Band of Equilibrium and Amoeba or Doughnut diagrams (for experts and technical documents)
- ☐ Where data remains completely absent (Tier 3), explicitly rely on expert judgment or proxy indicators to prevent the process from paralyzing
- ☐ Hand over the validated thresholds and current values to the expert team to generate the final Amoeba/Doughnut diagrams

GROUP 1
Priority sector: SUSTAINABLE TOURISM

Challenges/Indicator	Current value	2030
The relationship between the number of inhabitants and the number of tourists / Odnos broja stanovnika i broja turista Prosječna godišnja razina korištenja vodnih bogatstava (in ratio/ %)	10,45	12
The relationship between the number of beds in collective accommodation and the number of residents / Odnos broja ležajeva u kolektivnom smještaju i broja stanovnika (u %)	6,39	5,9
Share of overnight stays in the region in the total number of overnight stays / Udio noćenja regije u ukupnom broju noćenja (u %)	34,27	38
Number of beds in collective accommodation per km of coast / Broj ležajeva u kolektivnom smještaju po km obale	51,98	120

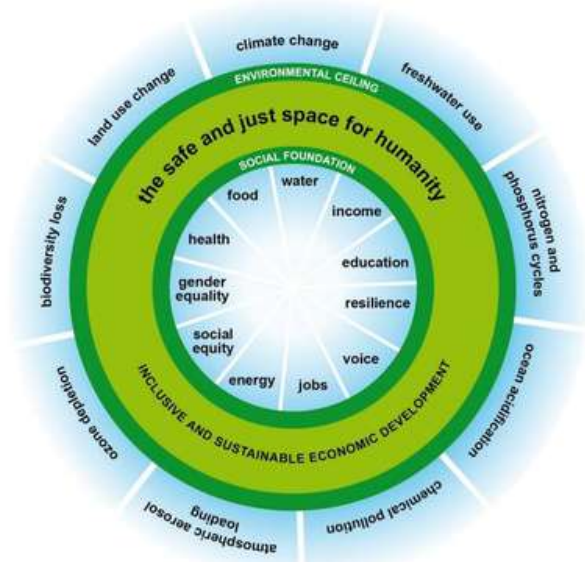
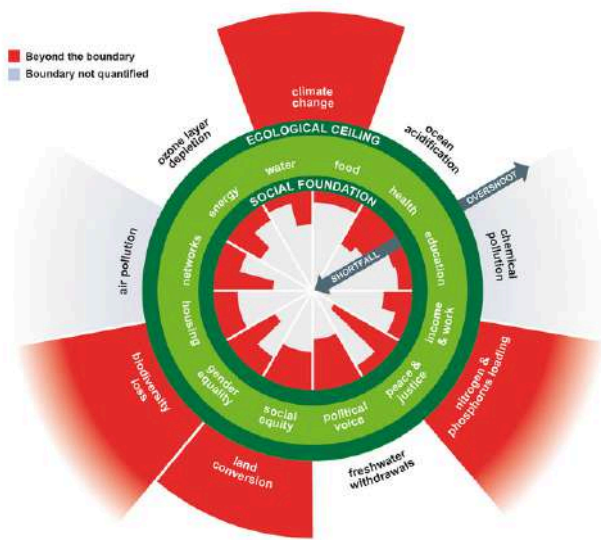
Figure 4. Example of results from one group (Montenegro) for Workshop 3.

Tool: Simplifying Complex Amoeba Diagrams using the "Doughnut Model"

Traditionally, Climagine uses an "Amoeba" (Radar) diagram to plot the 1-to-7 scale. However, field lessons show that Amoeba diagrams can be overly complex and abstract for non-expert audiences, particularly because combining "unsustainable by default" and "unsustainable by excess" on the same axis causes severe confusion.

To secure decision-maker buy-in and community understanding, practitioners could use the "Doughnut Model" instead of the Amoeba diagram.

- **The Inner Boundary (Social Foundation):** Represents the minimum standards required to meet basic human needs. Falling below this means the territory is in a shortfall.
- **The Outer Boundary (Ecological Ceiling):** Represents the biophysical limits of the coastal environment. Going beyond this means the territory is in overshoot.
- **The Doughnut (Safe Operating Space):** The goal of the workshop is visually clear: keep the indicator data within the green "Doughnut" ring. This ring represents the safe and just space where human needs are met without overshooting the ecological ceiling, the ideal space where local communities and ecosystems can thrive.



Raworth, Kate. Doughnut economics: Seven ways to think like a 21st-century economist. Random House Business Books, 2017.

Project Team

(to do before the next workshop:)

- ☐ The values for the current state and the 2030 business-as-usual scenario of the sustainability indicators proposed by stakeholders will be forwarded to experts for evaluation (especially in terms of the values that are missing, newly added indicators and suggested sustainability values.)
- ☐ Translate Amoeba diagram results into simplified visual tools, such as a 1-to-7 scale, to make them easily understandable for decision-makers and the general public.
- ☐ Explore adopting logic from "Doughnut Economics" to better visualize the "Band of Equilibrium" (remaining above social foundations but below planetary boundaries).



Common Pitfalls to Avoid:

- **Audience Mismatch:** Forcing local communities (farmers, fishers, NGOs) to use complex expert tools (like Amoeba charts or exact numerical modelling) instead of using simplified, qualitative sheets or the Doughnut approach.
- **Threshold Confusion with the Amoeba diagram:** Failing to clearly explain the difference between a practice that is "unsustainable by default" (e.g., pollution) versus one that is "unsustainable by excess" (e.g., water use).
- **Number Paralysis:** Focusing too heavily on achieving precise, perfect data numbers rather than agreeing on realistic acceptable ranges (the BoE), which halts progress in data-poor areas.

2.5. Step 4: Do & Suggest

WORKSHOP 4: Finalising the Scenario Making, sharing this with major stakeholders.

The primary goal of Workshop 4 is to transition from indicator analysis to strategic decision-making. This workshop brings stakeholders back together to validate future scenarios, resolve conflicts, and prioritize concrete actions for the Coastal Management Plan.

Validating Business-as-Usual (BAU) vs. Alternative Scenarios

To make informed decisions, stakeholders must clearly understand the "cost of inaction." Facilitators must help groups visually and conceptually contrast two distinct trajectories:

- **The BAU Scenario:** A trajectory where current, often unsustainable trends are maintained, and no further actions are taken.
- **The Alternative Scenario:** A sustainable pathway based on far-reaching adaptation efforts, aiming to pull failing indicators back into the "safe operating space" (the green zone of the BoE). Incorporating longer-term horizons (like 2050) helps stakeholders better anticipate severe structural transformations and climate uncertainties.

Consensus-Building and Conflict Resolution

Coastal zones are characterized by competing interests (e.g., tourism development vs. biodiversity conservation). To manage these conflicts and ensure a fair prioritization of measures, practitioners should employ structured consensus-building mechanisms.

- **Tool for Idea Generation and Filtering:** The Nominal Group Technique (NGT). Instead of unstructured debates where dominant institutional voices might hijack the process, facilitators should use the NGT. This method allows participants to silently generate ideas, followed by a structured, round-robin discussion and a formal voting process (such as dot-voting) to identify the most relevant and feasible actions consensually.
- **Tool for Final Decision-Making: Sociocratic Consent.** To finalize the shared scenarios or strategic recommendations without forcing rushed majoritarian agreements, facilitators should transition to sociocratic consent. Rather than seeking absolute preference from everyone, this method systematically identifies and resolves fundamental objections ("I can't work with this"). It guides the group toward a "range of tolerance," reaching a consensus where stakeholders agree the proposed action is "safe to try" by acknowledging: "It is not my preference, but I can work with this".



Time	Actions
0:30 minutes	Plenary: Presenting the Expert Findings Experts present the refined Sustainability Indicators (SIs), the proposed Band of Equilibrium (BoE).
1:30 hours	Group: Validating BAU vs. Alternative Scenarios Groups review the proposed values for the current state and the "Business-as-Usual" (BAU) scenario. They then reflect on the area's future development to construct an Alternative Scenario based on coordinated sustainability efforts. These scenarios are visualized using Amoeba diagrams or the Doughnut model
1:30 hours	Group: Consensus-Building & Prioritizing Measures Based on the visual scenarios, stakeholders prioritize strategic recommendations and concrete adaptation measures.
0:30 minutes	Plenary: Final Synthesis Groups present their alternative scenarios and finalized strategic recommendations for integration into the Coastal Management Plan.

Table 4. Proposed Structure for the Group Activity in Workshop 4

Tool: Emotional Storytelling & Visual Rendering

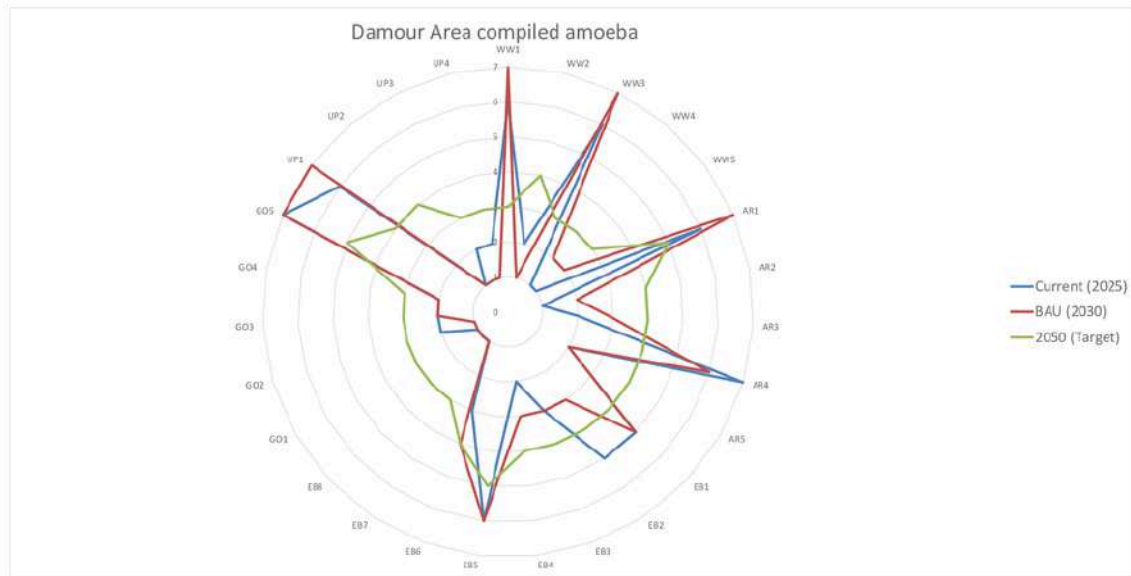
Translating abstract data and Amoeba diagrams into emotional storytelling and tangible visual renderings is highly recommended. This "emotional storytelling" approach bridges the gap between technical experts and the general public, making the alternative scenarios feel achievable and real. While AI-generated imagery can be used for rapid visualization (especially under budget and time constraints), future applications should highly consider integrating local authors, artists, and storytellers. This strengthens local perspective and ownership whilst supporting cultural activities in the area.



- Case Study: Visualizing Scenarios in Damour, Lebanon

During the Climagine process, stakeholder recommendations were synthesized into future 2030 alternative scenarios to push towards sustainability in priority sectors. To improve decision-maker understanding, the project translated the Amoeba diagrams into AI-generated visual renderings:

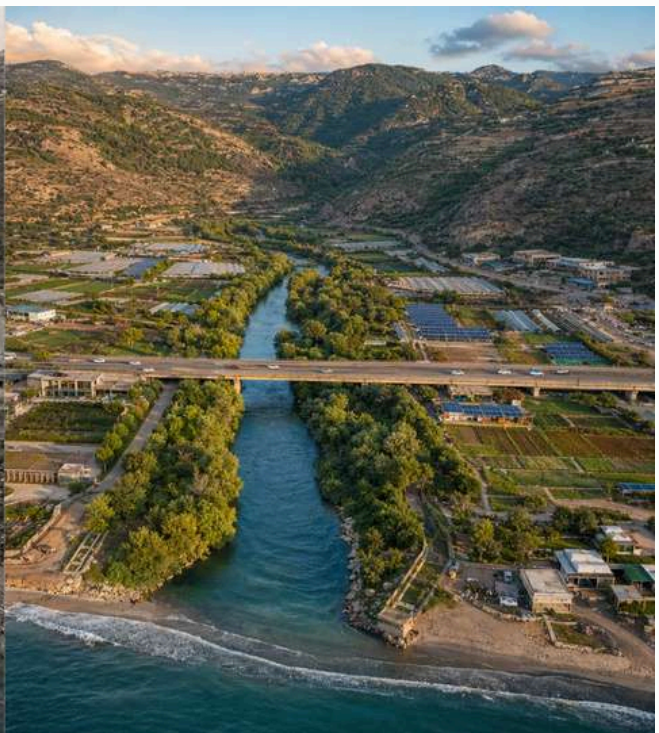
Compiled Amoeba diagrams for Damour Area



Visualizing the 2050 Business-as-Usual
(The Cost of Inaction)



Visualizing the 2050 Alternative Scenarios
(The Sustainable Targets)





Quick Checklist for Step 4 :

- ☐ Final validation of the indicators and their Band of Equilibrium
- ☐ Finalize and validate the Amoeba/Doughnut diagrams showing the Current State, 2030 BAU, and 2030 Alternative Scenario
- ☐ Use the Nominal Group Technique (NGT) to resolve conflicts and consensually prioritize measures
- ☐ Formulate final strategic recommendations for direct integration into the Coastal Management Plan
- ☐ Identify climate change adaptation measures and Nature-based Solutions (NbS)

Group Water Supply and Wastewater Management

#	Indicator	Unit	Baseline	BAU Value	Alternative Value	Sustainable Minimum	Sustainable Maximum	Current (2025)	BAU (2030)	2050 (Target)
WW1	Seawater intrusion index	Chlorides mg/L or Total dissolved solids (TDS) (mg/L)	Critical Chlorides >200 mg/L= 435–1,163 mg/L (TDS)	> 1,500 mg/L (Increasing)	< 250 mg/L	0 mg/L	250 mg/L	6	7	3
WW2	Groundwater Level Trend	m/year	Declining= - 0.5 to 7.6m/year	< -7.6 m/year	0 to +0.5 m/year	0 m/year	+0.5 m/year	2	1	4
WW3	Groundwater Abstraction	MCM/year	High Pressure= 13,5 MCM/year	> 15 MCM/year	< 10 MCM/year (Safe Yield)	5 MCM/year	Safe Yield Limit	6	7	3
WW4	Households connected to a functioning WWTP	% of households	< 10%	10%	80%	60%	100%	1	2	3
WW5	Wastewater effectively treated	% = m ³ /day vs design capacity	Low Efficiency.= 21%	15%	80%	60%	100%	1	2	3



Indicator	Current situation and BAU scenario in the Damour area	Recommendations - alternative scenario
WW1. Seawater intrusion index	Currently, the Damour priority coastal aquifer experiences severe over-exploitation, driving significant seawater intrusion with TDS reaching up to 1,163 mg/L. The Business-As-Usual (BAU) scenario points to a continued, irreversible salinization of the coastal aquifer (BoE 7), rendering the freshwater lens unusable for domestic or agricultural purposes.	The alternative scenario requires immediately reducing coastal pumping and enforcing strict well licensing. Furthermore, implementing Managed Aquifer Recharge (MAR) systems should be prioritized to restore the freshwater-saltwater interface and push salinity safely below the 250 mg/L maximum durable threshold.
WW2. Groundwater Level Trend	Groundwater levels are declining at an alarming rate (between -0.5 and -7.6 m/year) due to the proliferation of unregulated wells and climate variability reducing natural recharge. In a BAU scenario, aquifer depletion will accelerate, leading to the complete drying of wells and springs (BoE 1).	It is crucial to install continuous monitoring networks using piezometers with data loggers. The alternative scenario requires enforcing strict extraction caps and protecting major recharge zones to stabilize water levels, ensuring a sustainable zero or positive recharge trend
WW3. Groundwater Abstraction	Current abstraction exerts extreme pressure on the system (≈ 13.5 MCM/year), far exceeding natural safe yields. Unmetered and unregulated pumping dominates the area. The BAU scenario assumes continued uncontrolled abstraction (BoE 1), heavily degrading the water balance.	To reach the sustainable target, a comprehensive well inventory must be completed, coupled with mandatory metering for both public and major private wells. Groundwater abstraction must be strictly capped within sustainable safe yield limits, and illegal wells in critical zones must be closed.
WW4. Households connected to a functioning WWTP	Less than 10% of households are currently connected to a functioning wastewater treatment plant. Most rely on un-engineered, leaking septic tanks, and raw sewage is frequently discharged into the Damour River. BAU predicts only marginal improvements due to fragmented infrastructure (BoE 2).	Significant investments are required to complete collection networks, rehabilitate existing pumping stations, and effectively connect unserved rural and urban settlements to functional WWTPs, aiming for an alternative scenario target of at least an 80% effective connection rate.
WW5. Wastewater effectively treated	The actual treatment efficiency is critically low ($\approx 21\%$). Most constructed WWTPs and pumping stations are non-operational due to chronic power shortages and lack of maintenance. The BAU trend shows continued structural failure (BoE 2), leading to severe pollution of surface and groundwater.	The alternative scenario demands securing Operation & Maintenance (O&M) budgets, solarizing WWTPs to provide backup energy, and strictly enforcing pre-treatment for industrial and commercial discharges. This will allow the facilities to reach an 80% functional treatment capacity.

Figure 5. Example of results from one group of the Climagine workshop in the Damour area, Lebanon.

Tool: The Expert Track – Filtering and Testing Priority Measures (Between Step 4 & 5)

Once stakeholders have brainstormed potential climate adaptation measures during Workshop 4, technical experts must conduct a rigorous, two-step evaluation "behind the scenes" before Step 5. This ensures the proposed measures are locally viable, ecologically sound, and financially realistic.

1. Step One: Multi-Criteria Analysis (MCA) as a Filter

Experts apply an MCA to systematically filter the list of community-proposed solutions against specific criteria (e.g., enhancing climate resilience, protecting biodiversity, improving governance, and creating employment). Two specific criteria should be systematically integrated into this evaluation:

- Gender Equality: Evaluating how well the proposed measure mainstreams social equity and addresses gender-specific vulnerabilities.
- Data Availability for CBA: Assessing whether there is sufficient economic or scientific data available to subsequently run a financial reality check.

2. Step Two: Cost-Benefit Analysis (CBA) as a Financial Reality Check

For the shortlisted measures that pass the MCA filter, experts conduct a CBA. This compares the total investment and maintenance costs required against the expected returns (e.g., the monetary value of avoided damages to coastal assets or the value of gained ecosystem services). This guarantees that proposed actions are highly realistic and ready to attract future investment.



Case Study: Financial Reality Checks in the Mediterranean

During the GEF MedProgramme, experts applied this MCA-to-CBA refinement to prioritize adaptation solutions:

- Montenegro (Boka Kotorska Bay): Evaluated the financial viability of afforesting 11,000 hectares of forests (comparing costs against the benefits of carbon storage) and constructing two coastal dykes to protect vulnerable areas from sea-level rise.
- Morocco (Tangier-Tetouan-Al Hoceima): Measured the investment costs of massive Nature-based Solutions (planting 17,348 hectares of temperate forests to replace degraded lands) against long-term climate resilience returns.

Project Team

(to do before the next workshop:)

- ☐ After Climagine 4, the project team works together to finalise in a communicative way with emotional storytelling and visual rendering the alternative scenario and Amoeba/Doughnut diagrams, which will serve as inputs to the Coastal Management Plan.

- 
- ☐ Multi-Criteria Analysis (MCA) and Cost-Benefit Analysis (CBA) based on the scenarios generated. This MCA-to-CBA refinement process ensures that the proposed alternative scenarios and coastal adaptation measures are realistic and financially viable.
 - ☐ Feed Climagine results in an institutional strategy and specify which authorities will be responsible for continuous monitoring.
 - ☐ Design formal follow-up mechanisms and align the process explicitly with statutory planning milestones (e.g., ICZM Law or Regional Coastal Scheme) to translate foresight into legally binding action.



Common Pitfalls to Avoid:

- **The "Implementation Gap":** Allowing the workshop to remain a purely theoretical foresight exercise because recommendations are not explicitly linked to concrete statutory planning milestones or national investment roadmaps.
- **Methodological Overconfidence:** Treating proposed measures as fully operational when the baseline monitoring systems are actually weak or fragmented.
- **Communication Failure:** Failing to translate the complex Amoeba diagrams into clear, accessible narratives for policymakers, thereby limiting the political impact of the finalized scenarios.

2.6. Step 5: Act & Reach Out

FINAL SESSION: Bridging the Gap: Regional Finance Roundtable and Plan Presentation.

While the formal participatory workshops conclude with Step 4, Step 5 is arguably the most critical phase of the entire methodology. To ensure the strategic recommendations do not remain theoretical and to effectively bridge the "Implementation Gap," Step 5 should culminate in a final high-level event bringing together local stakeholders, policymakers, and financial institutions. While not a traditional participatory workshop, this Regional Finance Roundtable serves as a key matchmaking platform. It transitions the process from planning to "observation for investment". By showcasing the economic viability of the proposed measures through the MCA and CBA results, practitioners can effectively pitch the co-created strategic recommendations to funding agencies, private investors, and development banks to secure the necessary adaptation finance.



Integrating CBA: The "Financial Reality Check"



A major threat to participatory planning is "blue sky thinking", where stakeholders propose idealized solutions that are financially impossible to execute. To ground the proposed measures in reality, the CBA analysis serves as a "financial reality check". Inviting representatives from financial institutions, the private sector, and economic ministries to this roundtable and presenting the expert-prepared Cost-Benefit Analysis (CBA), which proves the economic return on investment for measures like Nature-based Solutions (NbS), facilitators ensure that the proposed strategic recommendations are objectified, realistic, and matched with potentially obtainable financial means. Insights that have been collected from the [Webinar](#) and [Regional Roundtable](#) on Mobilizing Finance for Climate Change Adaptation and Private Sector Engagement in 2025 can be retrieved [here](#).

Bridging the "Implementation Gap": Translating Foresight into Legally Binding Action



Another threat to participatory planning is that strategic plans remain as static documents on shelves without translating into concrete governance.

- **Creating "Social Contracts":** Climagine must do more than produce a technical document; it must transform top-down mandates into socially validated "social contracts".
- **Statutory Integration:** Public authorities must establish clear administrative pathways to integrate the validated measures directly into statutory planning documents (e.g., a Regional Coastal Scheme or National ICZM Law).
- **Targeted Communication:** Use the finalized Amoeba or Doughnut diagrams to visually communicate the "cost of inaction" versus the benefits of sustainable planning to high-level policymakers. Develop a highly visual, non-academic executive summary or a short 4-page flyer to communicate the outcomes directly to decision-makers and the broader public.

Implementing Citizen Science for Continuous Monitoring



Local communities must not perceive their participation as merely symbolic. To maintain trust, practitioners must foster genuine ownership during the workshops and ensure stakeholders remain actively involved throughout the implementation phase.

- **Citizen Observatories:** Promote citizen science and establish local observatories to create a continuous, community-based monitoring network. This empowers locals to actively track the Sustainability Indicators (SIs) they helped define.
- **Digital Geospatial Platforms:** To support long-term decision-making, integrate the Climagine outputs into dynamic digital platforms (such as Plan Bleu's observatory or MapX). Linking the indicators to interactive spatial layers allows both citizens and decision-makers to visually track the evolution of environmental pressures and the impact of the implemented actions across the territory.

Time	Actions
1:00 hour	Plenary: Presentation of the Final Plan & Scenarios Present the finalized Coastal Management Plan, including the final Amoeba/Doughnut diagrams and the sustainable Alternative Scenario co-created by stakeholders. Use a highly visual, non-academic executive summary to communicate clearly with decision-makers and highlight the required political actions.
0:45 hour	Plenary: Financial Reality Check (MCA & CBA Results) Experts present the findings of the Multi-Criteria Analysis (MCA) and Cost-Benefit Analysis (CBA) conducted during the Climagine process. This demonstrates the socio-economic viability and return on investment of the prioritized actions (e.g., Nature-based Solutions), proving to donors that the measures are bankable and grounded in economic reality.
1:30 hours	Pitch Session & Roundtable for Finance An interactive matchmaking session where specific strategic recommendations and coastal adaptation projects are pitched to invited funding agencies, private sector representatives (e.g., real estate developers, insurance companies), and impact investors. The goal is to attract funding, secure financial commitments, and align the proposed actions with concrete national and international investment portfolios.
0:30 minutes	Plenary: Next Steps & Institutionalization Formal agreement on follow-up mechanisms, such as the establishment of an inter-municipal or cross-sectoral coordination committee to oversee the plan's execution, enforce the legal framework, and dynamically track the sustainability indicators.

Table 5. Proposed Structure for the Regional Finance Roundtable

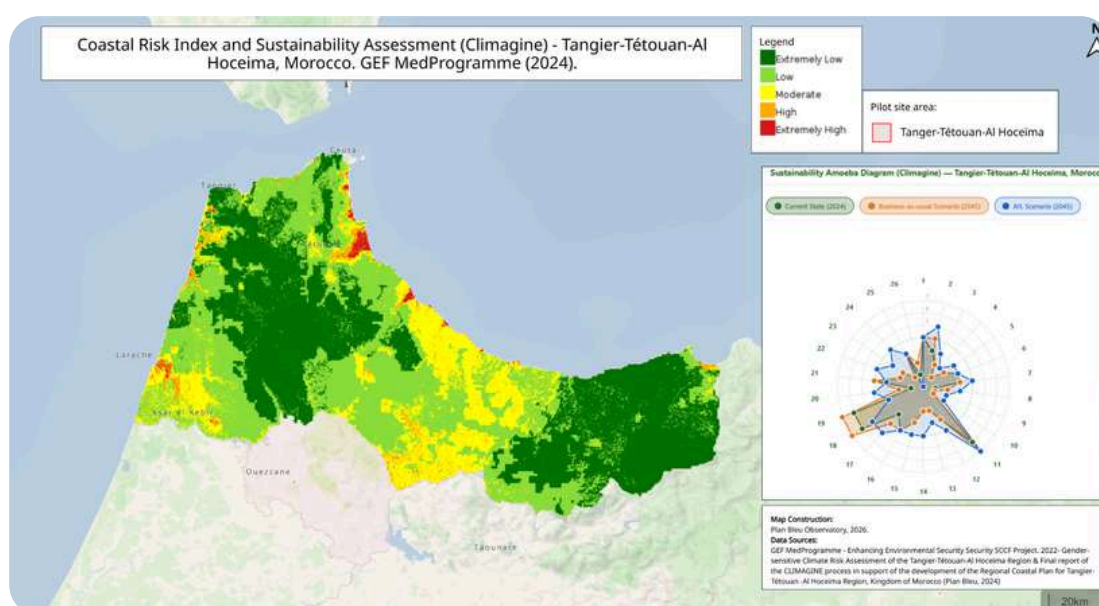


Figure 6. Coastal Risk Index and Climagine results from Tangier-Tetouan-Al Hoceima region (Morocco), represented in Plan Bleu's observatory.



Quick Checklist for Step 5:

- ☐ Present the results of the expert MCA and CBA to ground discussions in economic reality
- ☐ Conduct the "financial reality check" with invited economic and investment stakeholders
- ☐ In case the Coastal Management Plan is not yet final, formally submit the strategic recommendations for integration into the statutory Coastal Management Plan or ICZM Law
- ☐ Ensure representatives from economic ministries, funding agencies, and the private sector are present at this final feedback session as well as local communities so they know which of their proposed measures were adopted
- ☐ Prepare clear, concise pitch materials focusing on the CBA and MCA results (costs vs. expected economic returns)
- ☐ Launch citizen science initiatives to monitor the finalized indicators
- ☐ Link proposed actions (especially NbS) with identified national or private funding mechanisms
- ☐ Draft a highly visual 4-page executive summary for high-level policymakers



Common Pitfalls to Avoid:

- **The "Post-Workshop Drop-Off":** Failing to establish structured validation and monitoring committees, leading to a decline of momentum once the official project concludes.
- **Treating Communities inputs as merely symbolic:** Extracting local knowledge during workshops but failing to keep them involved in the long-term monitoring and implementation phases.
- **Academic Overload:** Presenting decision-makers with heavy, 100-page technical reports rather than concise, visual flyers that clearly highlight the required political actions and funding needs.

3. Practical Tools, Templates & Checklists

This annex contains the essential grid drafts and tracking formats required to facilitate the Climagine process effectively. It is designed to be printed and used directly by the project team before, during, and after the workshops.

3.1. Facilitator's Master Checklist: Step-by-step outputs required

Use this master checklist to verify that the core outputs of each Climagine phase are successfully completed before moving on to the next step.

Preliminary step: Prepare & Align (Pre-Workshop)

- ☐ Rapid Stakeholder Assessment (RSA) and Power Analysis Matrix completed
- ☐ Geographical boundaries explicitly defined (e.g., natural source-to-sea vs. administrative)
- ☐ Gender-sensitive climate risk assessment conducted
- ☐ Demographic balance (gender and youth representation) secured for invitations
- ☐ Local legal mandates and existing funding mechanisms mapped
- ☐ Baseline data pre-classified using the 3-Tier system to identify immediate gaps

Step 1: Reflect & Understand (Workshop 1)

- ☐ Scientific diagnostic (including gender-sensitive climate risks) presented in non-technical language
- ☐ Shared 2050 Sustainability Vision co-created using "Rich Pictures"
- ☐ Key challenges clustered into broad Sustainability Dimensions

Step 2: Connect & Investigate (Workshop 2)

- ☐ "Climagine Indicator Library" used to avoid starting from scratch
- ☐ Set of 3 key Sustainability Indicators (SIs) selected per priority sector
- ☐ All selected SIs filtered through the RACER criteria and 3-Tier Data Grid (by experts)
- ☐ Indicators structured using the actionable DPSIR logic (focusing on Pressure, State, Impact) (by experts)

Step 3: Model & Explore (Workshop 3)

- ☐ "Community Track" e.g. multiple-choice qualitative assessments completed
- ☐ "Expert Track" defines the numerical minimum and maximum thresholds for the Band of Equilibrium (BoE)
- ☐ Amoeba/Doughnut diagrams drafted for Current State and 2030 Business-as-Usual (BAU)

Step 4: Do & Suggest (Workshop 4)

- ☐ Final 2030 Alternative Scenarios visually validated via Amoeba/Doughnut diagrams
- ☐ Conflict resolution and action prioritization finalized (e.g., using the Nominal Group Technique)
- ☐ Strategic recommendations formally drafted

Step 5: Act & Reach Out (Final Feedback Session)

- ☐ Highly visual, 4-page non-academic executive summary published for policymakers
- ☐ Results officially integrated into statutory planning milestones (e.g., ICZM Law, Regional Scheme)
- ☐ Multi-Criteria Analysis (MCA) and Cost-Benefit Analysis (CBA) conducted behind the scenes by experts on proposed measures and results presented as a "Financial Reality Check" to ground stakeholder proposals
- ☐ Citizen science observatories launched for continuous indicator monitoring

3.2. Power Analysis Matrix

The power analysis Matrix is available in the [Climagine Guide for Practitioners.](#)

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