Technical report on the update of the Climagine methodology for its upcoming application in the GEF MedProgramme

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Introduction: Context and Scope of the Methodology

The "Imagine" approach was developed by Plan Bleu to address sustainable coastal zone management needs in the Mediterranean and to ensure the participation of stakeholders in coastal planning. "Climagine" offered an adaptation of "Imagine" to addresses the specific challenges of climate change and variability in coastal zones. Both approaches are articulated around four steps, as illustrated in Figure 1.

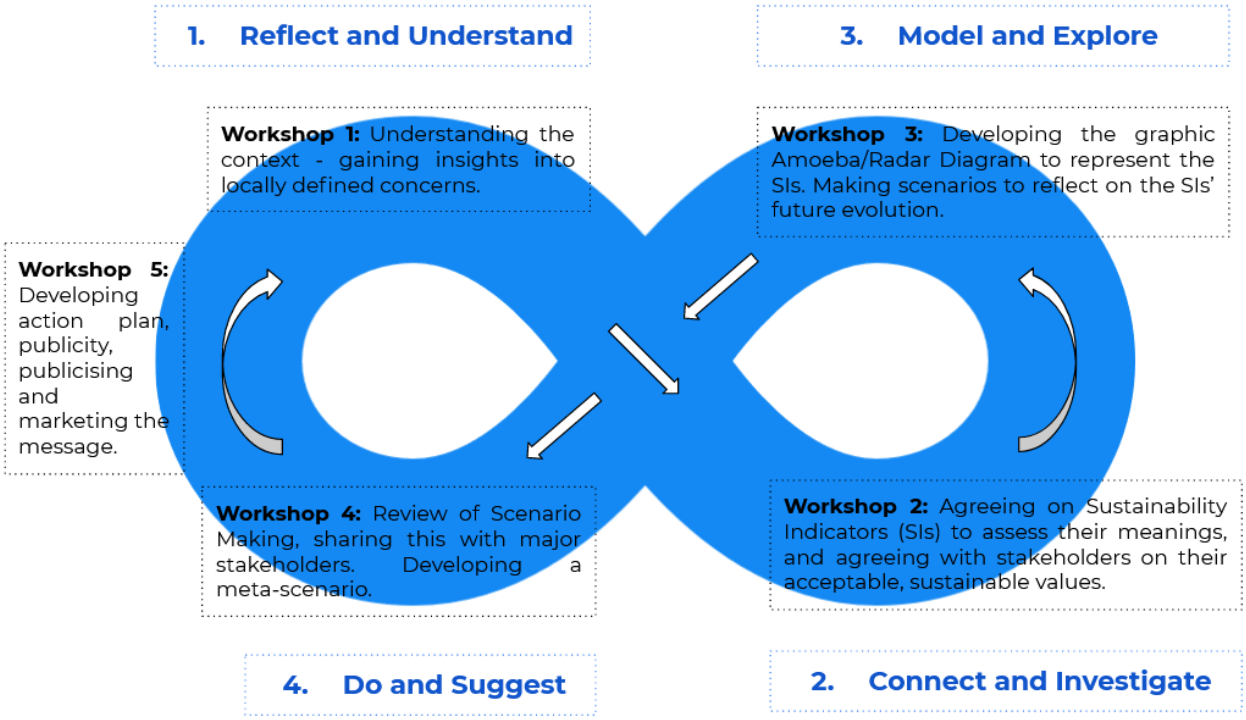

Figure 1 : Steps of the Imagine approach (Source: Plan Bleu, 2016)

Within the framework of the MedPartnership sister project "Integration of climate variability and change into national strategies for the implementation of the ICZM Protocol in the Mediterranean" (Climvar), Climagine was tested in two pilot zones: Šibenik-Knin County in Croatia and the Kerkennah archipelago in Tunisia. Building on the lessons learned from the Kerkennah archipelago case, this note aims to provide useful information for the foreseen implementation of Climagine in the framework of the GEF MedProgramme (2021-2025), particularly for the elaboration of two ICZM plans in the Tangiers-Tetouan-Al Hoceima region (Morocco) and in Kotor Bay (Montenegro) and the elaboration of two national ICZM strategies in Egypt and Lebanon.

Climagine was implemented in the Kerkennah archipelago between October 2013 and June 2015. Initially, it aimed to support the mainstreaming of climate change into the existing ICZM plan that was developed in 2008 under the leadership of the Tunisian Coastal Planning Agency (APAL). The RiVAMP[1] model was selected to assess climate change risks and vulnerability and

[1] The Risk and Vulnerability Assessment Methodology Development Project (RiVAMP) was developed by UNEP-GRID to analyze disaster risk and vulnerability while considering environmental factors and taking into account ecosystem roles and climate change impacts. The purpose of RiVAMP is to use evidence-based, scientific and qualitative research to demonstrate the role of ecosystems in disaster risk reduction, and thus enable

to identify and evaluate ecosystems' contributions to adaptation solutions in the area, with a view to their integration into the updated version of the ICZM Plan. However, two major challenges arose and led to major adjustments of the process:

1. During the first *Climagine* consultation workshop, coastal erosion was selected as the major climate risk to be modelled. The contribution of submarine coastal ecosystems (*Posidonia oceanica*, *cymodocea*, *caulerpa* etc.) was to be evaluated. Nonetheless, the lack of appropriate data prevented the application of the RiVAMP model. A time- and effort-consuming consultation was undertaken until the national partner, APAL, conceded that the available data were of inappropriate quality (whether in terms of spatial resolution or of regularity) to allow for accurate quantifications of climate change exposure, vulnerability, and risk. This data constraint hampered the development of prospective scenarios for anthropogenic or climatic stimuli and their impacts on coastal sub-marine ecosystems and coastal erosion. As a result, the definition of Sustainability Indicators and the production of an Amoeba Diagram (two major Climagine methodology outputs) to show the Band of Equilibrium for each indicator did not take place. Consequently, the ambitions of the process were reviewed, and a different scientific methodology was adopted. The Services - Threats – Solutions (STS) approach was used to identify key ecosystems in the archipelago and the related threats and recommended possible solutions, primarily mobilizing local knowledge combined with spatial and GIS analysis.
2. The absence of progress towards the ICZM Plan's implementation and the quasi-inexistent ownership of the plan by the different stakeholders deviated the objective of *Climagine* process. Indeed, the Integrated Management Unit envisaged by the ICZM Plan to be in charge of leading and monitoring its implementation was not created. Furthermore, only few of the stakeholders engaged in *Climagine* participated in the development of or knew about the 2008 ICZM Plan, while none of them were referring to it as a framework or a guide on which they should align their daily action. Hence, the objective of the *Climagine* process shifted towards the development of strategic policy recommendations for action to improve the resilience of coastal ecosystems.

Furthermore, the post-revolution Tunisian context was fertile for *Climagine's* implementation in relation to two fundamental aspects. Firstly, the widely shared and pressing demand for a change of the Tunisian development model, including more consideration of environmental and sustainable development priorities, gave rise to open criticism of the unsustainable policies and practices in place and to constructive discussions on the possible alternatives. Secondly, the recently constitutionalized decentralization principle favored a multi-level (national and local) consultation process alternating workshops in the capital, Tunis, and in the Kerkennah archipelago.

policymakers to make better-informed decisions that support sustainable development through improved ecosystems management.

Eventually, the process was structured around 4 phases and three consultation workshops (cf. Figure 2):

- **1st Climagine workshop**: to build a common understanding of the socio-ecological system of the Kerkennah archipelago, identify priority climate risks and the associated impacts on the socio-economic development of the archipelago, identify the predominant factors of coastal erosion, pre-select potential areas of study and identify potentially useful and available data,
- **2nd Climagine workshop**: conduct a "Service- Threat-Solution" analysis to highlight the roles played by the different ecosystems and the services they offer to reduce vulnerability to climate variability and change, identify the threats facing these ecosystems and potential solutions to these threats,
- **3rd Climagine workshop**: discuss and validate the strategic recommendations for the revision of the ICZM Plan.

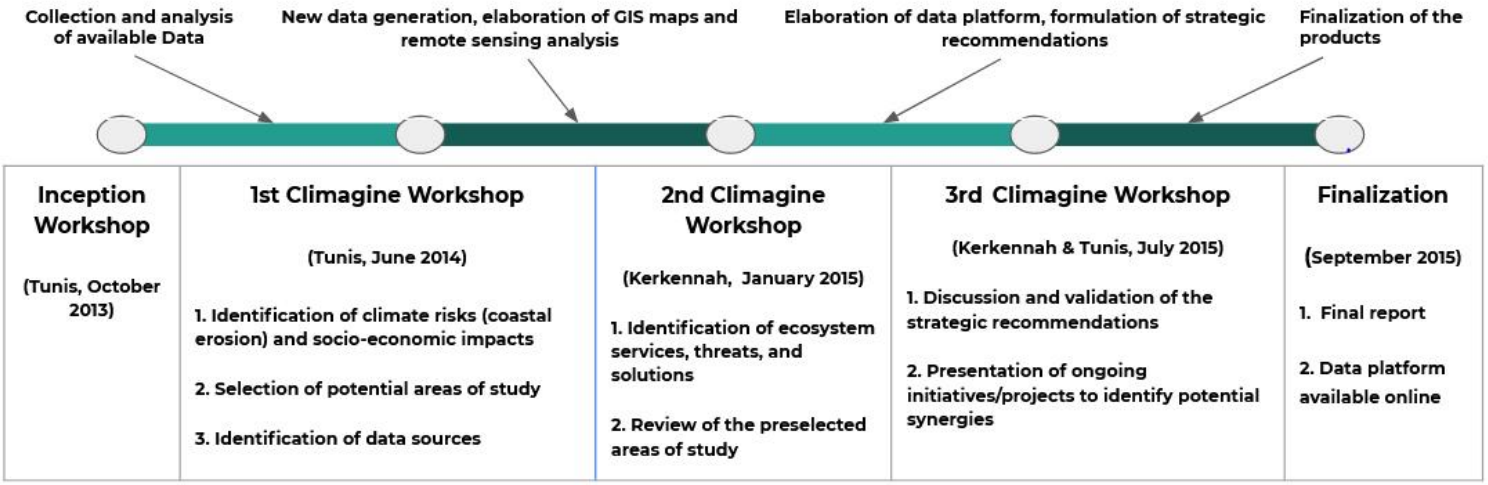

Figure 2: Description of the Climagine process in Kerkennah archipealego

1. Past experiences and lessons learnt

1.1. Methodological lessons learnt

1.1.1. Data analysis and selection of the appropriate scientific model

Data availability is a common challenge in Mediterranean countries. Very often, resources dedicated to regular and continuous data collection are insufficient. Also, data are usually considered as a source of power by those who detain them and hence, they are reluctant to share them. In addition, the lack of coordination between various data producers does not facilitate access to these data. In some other cases, inconsistency between data collection methods and quality requirements is an obstacle for data analysis and use. For instance, it is insufficient to have GIS data without their metadata. In the case of the Kerkennah archipelago, the project faced all of these data issues. Much of the technical effort was redirected to collect, standardize, sort and centralize the available data and documents, generate new data (aerial and satellite images, formats conversion, etc.), and to finally make it available to the general public online. It is clear that this effort contributed to building the capacities of the national partners through learning-by-doing. However, it challenged the project timeline and budget. It is helpful to properly assess data availability and quality in a reasonable timeframe considering the project's overall duration, and then to decide accordingly on the appropriate scientific methodology or model to use (see also 1.2.3.).

1.1.2. Complementarity between scientific and local knowledge

Each context and its local specificities and realities will inevitably require adjustments of the *Climagine* approach. The combination of technical and scientific expertise with local expertise mobilized through a participatory approach offer flexibility in this respect. In case a gap exists in one of the two sets of expertise, it is compensated to a certain extent by the other one.

1.1.3. Mobilization of a team of experts

The *Climagine* approach combines analytical work with a participatory process. While the two have distinct objectives and are led by different experts, they are inextricably interlinked and feed each other continuously. The analytical work is conducted by international and national expertise with the aim of providing a sound scientific knowledge basis for the formulation of the policy recommendations (alternatively the coastal plan). The participatory process is facilitated by a local moderator (who can be supported by a non-local) with the aim of collecting local knowledge and engaging relevant stakeholders. The two sources of knowledge are complementary, and their combination is essential to establish a comprehensive understanding of the social, economic, and environmental components of the coastal system and the complex interactions between these different components. In the case of the Kerkennah archipelago, data collection and generation consumed the majority of technical efforts as described above. The input from the analytical work consisted primarily of geographical data analysis to support the participatory evaluation of the Services - Threats – Solutions provided by ecosystems. Further analytical work was required to define Sustainability Indicators for the ecosystems identified. It was unconceivable to count only on local knowledge and consultation workshops to define these indicators. It is always the case

that analytical work is undertaken in preparation of consultations with local stakeholders. Unfortunately, this was not possible in the case of the Kerkennah archipelago due to the project's limitations (limited available scientific expertise within the team, limited budget to mobilize additional expertise and timeline). It is therefore crucial to include technical expertise provision in the initial design of the project that will both support and benefit from the *Climagine* process.

1.2. Operational lessons learnt

1.2.1. Balancing the multi-level, national and local, consultation processes

The *Climagine* method pursues a dual objective: to make local knowledge available on one side and to secure stakeholder engagement not only during the consultation process but also during the implementation of the policy recommendations (alternatively the coastal plan) on the other. In the context of centralized decision systems (common in Mediterranean countries), when the planning process is not of a national scope and is taking place in a specific coastal area, these dual objectives seem *prima facie* to be reached through divergent paths. On the one hand, it is essential to fully engage the national institutions responsible of leading the high-level implementation of the planning process, especially regarding fund mobilization. On the other hand, local stakeholders hold local knowledge and their active and positive involvement during the implementation is also essential for the actions' sustainability.

Hence, it is necessary to give due consideration to the location of the consultation workshops (in the capital or in the targeted coastal area) when designing the participatory approach and gathering the national and local stakeholders. Indeed, the workshop location influences the level of the stakeholders' participation in terms of representativity (proximity to their workplace) as well as the nature of their contribution to the process. The latter is particularly true for local stakeholders, who generally feel less intimidated when the workshop is taking place in their area. In the case of the Kerkennah archipalego, we tested the alternation of workshops. The first consultation workshop took place in the capital, Tunis. The second workshop was organized in the Kerkennah archipelago. The third workshop was organized first in Tunis and the following day in Kerkennah with almost the same agenda.

This alternated-workshops method showed mixed results in relation to the engagement of local stakeholders and sharing of local knowledge. Indeed, during the first workshop, different tools (printed-out maps, drawings, etc.) and tactics (description of the historical status of the area and emotional memories, etc.) helped to establish local stakeholders' confidence and stimulated the sharing of their local knowledge. However, the limited representativity of local participants compared to national ones generated misunderstandings of local realities and a feeling of exclusion by local actors. The second workshop remediated this situation to a certain extent (cf. point 1.2.3.) and offered an appropriate platform for local stakeholders to comment/correct/enrich the analytical findings. Nevertheless, the process would have been smoother if the first workshop was organized not only at the national level but also at the local level. Finally, splitting the third workshop into two (one for national and one for local stakeholders) offered a suitable platform to discuss the policy recommendations from both perspectives (national and local) without one undermining the other because of power

relations. For future replication, the sequencing of workshops and the order (national then local or the other way around) needs to be carefully considered.

1.2.2. Number of workshops

In Kerkennah, the *Climagine* process was somehow left incomplete. Ideally, a last workshop should have been organized with the participation of both local and national stakeholders to discuss what concrete measures to implement and who would be responsible for what, in order to facilitate the implementation/mainstreaming of the policy recommendations into national and sectoral development policies. This workshop should also have discussed the ongoing initiatives/projects to liaise with to favor the implementation of policy recommendations. As an example, during the third workshop, the SwitchMed initiative that aims to strengthen social and ecological innovations through entrepreneurs in the Mediterranean was presented to explore opportunities that can be established with local partners in the framework of this initiative.

1.2.3. Establishing a core group/task team to enhance close interaction along the process

The scientific methodology was adjusted during the process to overcome data challenges (cf. point 1.1.1.). The discussions on the methodology adjustment involved the project team and the APAL Focal Point. Alongside these discussions, the latter interacted with the national and local stakeholders primarily for data collection. The absence of a structured mechanism for consensual decision-making on the selection of the new methodology generated difficulties to engage the stakeholders in this methodology at later stages. In order to avoid such difficulties, it is recommended to set up since the beginning a core group/task team composed of national and local representatives. This core group will assist in speeding up data collection and advise on the needed technical adjustments of the process. This core group may or may not coincide with the steering committee of the planning process.

2. Recommendations for future implementation

The Kerkennah archipelago case presented fundamental differences from coastal planning processes. Indeed, it focused on updating an already existing coastal plan. The related steps of the process were therefore different from those to be followed in a planning process and recommended by the Integrative Methodological Framework (IMF). However, there are commonalties in the key principles guiding the process (i.e., engaging the stakeholders, incorporating scientific and local knowledge, etc.). The below section attempts to assess these commonalities and formulate useful recommendations for coastal planning processes.

2.1. Methodological Recommendations

2.1.1. Include a specific section on sustainable indicators in the field surveys

Planning processes usually include field surveys to inform their socio-economic analysis. A specific section can be added in the surveys to pre-identify the indicators judged by the population as translators of sustainable development in their area and collect spontaneous appreciations of the value of these indicators. It is to be expected that these indicators will be

qualitative rather than quantitative and their appreciation will be coarse. However, they provide helpful information for the experts, firstly for developing the vision for the area and secondly to define the Sustainability Indicators. The survey can even question the population about the Bands of Equilibrium that are associated to the Sustainability Indicators. For example, in the case of coastal erosion, the Band of Equilibrium can be described by the population as the submersion of a specific landmark by water for the minimum threshold and the width of the beach on another landmark for the maximum threshold.

2.1.2. Combine technical/vulnerability assessments with the development of indicators

Technical assessments conducted through participatory processes are also appropriate steps that can contribute to the pre-identification of Sustainability Indicators by the populations/stakeholders. For example, a participatory assessment of socio-economic vulnerability to climate change was undertaken in view of the elaboration of the Development Plan in the Douimis basin in Tunisia (see Box 1). Livestock was recognized as the most vulnerable natural capital to climate change in the basin. Enhancing pasture and watering points were suggested among the adaptation solutions. This information can be translated into Sustainability Indicators: i.e., pasture surface per unit of livestock or distances between watering points. It is advisable to discuss the values of bands of equilibrium with the stakeholders during the assessment workshops. These values are to be confronted with scientific knowledge and then discussed and validated during *Climagine* wokshop 3 dedicated to the development of the Amoeba Diagram.

2.1.3. Mapping the existing funding mechanisms starting with *Climagine* Phase 1 and securing the linkages

Even though the ICZM plan in the Kerkennah archipelago was developed through a wide participatory approach and included priority actions to establish the required governance mechanisms, five years later, nothing has been done towards its implementation. Unfortunately, this is not an exception in the Mediterranean countries. It is very often that costal plans remain on the shelves. Several explanations can be provided. Nonetheless, the one that seems the most substantial to us is that coastal plans actions are not sufficiently incorporated within available investment mechanisms. Usually, the process for coastal development plans examines the social, economic, and environmental dimensions related to sectoral priorities in an integrated manner, defines a set of actions to be implemented by each sector, and then develops an investment portfolio. The rupture happens when mobilizing funds. There are three sources of funds for coastal plan implementation: national funds, international aid, or the private sector. Concerning national funds and international aid, it is only when the coastal plan is incorporated in the existent national mechanisms for funds mobilization that the investment portfolio is accomplished. In the case of Tunisia for example, a National Development Plan is prepared by the Ministry of Planning and adopted by the Parliament for a period of 5 years. It includes sectoral and regional priority investments. All national funds are connected to the 5 Years Development Plan. Also, the latter is the reference document for the negotiation with international donors. It is therefore crucial to have the coastal plan actions included in the 5 Years Development Plan (see example in Box 1). If the

development of the coastal plan coincides with the development of the National Development Plans, bridges between the two processes must be established. If not, linkages must be sought in view of the preparation of the next 5-Years Development Plan.

For private sector fund mobilization, advocacy and promotion of the coastal plan among private stakeholders while actively involving them in the process are essential. A final roundtable presenting the adopted coastal plan and sending strong messages to the private sector about the commitment of national and local authorities to the plan can be of great assistance (see also private sector engagement below).

The planning process of the Douimis Resilient Development Plan – Bizerte, Northern Tunisia

A six-step process was undertaken to develop the resilient development plan in the Doumis basin, an upstream watershed of the Ramsar site of Lake Ichkeul:

- **Step 1**: Information, mobilization of the population and stakeholders on the project and its climatic component,
- **Step 2**: Diagnosis and inventory of the area and its prospects for resilient development (natural resources status, surveys to determine the socio-economic status of the population and its perceptions of climate change, participatory assessment of the socio-economic vulnerability to climate change),
- **Step 3**: Building the vision and establishment of development scenarios through a multi-level and multi-actor consultation process,
- **Step 4**: Elaboration of the resilient development plan (integration of the analytical and scientific results with the intersectoral thematic planning groups discussions),
- **Step 5**: Comprehensive examination of the feasibility of the plan's actions, refinement of the plan and initiation of the prerequisites for its implementation (adoption by the Regional Development Council of the Governorate of Bizerte, inclusion in the 2016-2020 National Development Plan, signature of MoUs between partners, etc.),
- **Step 6**: Advocacy for fundraising (climate funds mapping, organization of a national conference in Bizerte under the auspices of the Bizerte Governorate, the Ministry of Agriculture, Hydraulic Resources and Fisheries, and the Ministry of Local Affairs and Environment, in partnership with GWP-Med).

A documentary of the process is available here.

2.2. Operational Recommendations

2.2.1. Collect data samples after the launching/inception workshop

Data availability is a recurrent problem. As discussed above, it is recommended to set-up a task team that will be the vis-à-vis of the experts in relation to data requirements and to the selection and validation of the analytical methodologies. To accelerate the verification of data quality, it is also recommended to send a survey to the participants of the launching/inception workshop, asking them not only to inform the group on available data but also to share samples of these data.

2.2.2. Private sector engagement

The private sector is large and diverse. The OECD defines the private sector as those organisations that engage in profit-seeking activities and have a majority private ownership (i.e., not owned or operated by a government). This term includes financial institutions and intermediaries, multinational companies, micro, small and medium-sized enterprises, co-operatives, individual entrepreneurs, and farmers who operate in the formal and informal sectors. Because of this diversity, tailored approaches need to be adopted, depending on the results sought and the capacities of different private sector partners. In all cases, it is important to involve the private sector through its representing bodies in the consultation process since the early stages (business associations, unions of farmers, etc.). Their participation will contribute to shaping the coastal plan's actions towards privately fundable ones, when possible. Targeted private stakeholders also need to be involved in specific topics. For example, insurance companies for climate change risk management, public-private-partnerships regulation units for large infrastructure projects, donor agencies for blended funds, etc. It is therefore essential to maintain the effort of stakeholder mapping efforts throughout the process and according to the issues/challenges raised during the consultations. As suggested above, it is furthermore recommended to add another final consultation workshop in *Climagine* to widely share the coastal plan and present investment opportunities, including for the private sector.

2.2.3. Gender inclusive consultations

This consists in engaging and ensuring the meaningful participation of women and men in order to take into consideration both women's and men's needs at all stages of the coastal planning and to ensure that the proposed interventions in the coastal plan reflect these needs and benefit equally to both groups. It is therefore essential to address the following questions since the stakeholder mapping:

- What are the barriers to women's participation to the consultation workshops (cultural prohibitions, limited opportunities caused by low levels of education, poverty and/or poor health, lack of confidence to speak out, inappropriate time/duration of the consultation workshops, lack of childcare infrastructure, etc)?
- What needs to be adjusted in the consultation process to overcome to the extent possible these barriers (accommodate time frame, select safe and culturally acceptable locations, secure transportation, include discussions in single-sex groups, holding alternative plenary sessions for wider community issues and small working groups for specific issues, asking for women's opinions, using games, drawing, etc.)?
- Are there any gender experts, women's organisations and other organisations that have expertise in gender-related planning and implementation and that should be involved in the consultation process?
- Do sectoral ministries have gender focal points who should be involved in the process?

Developing gender sensitive coastal plan requires that the difference between women's and men's needs, levels of access and control over resources, opportunities and constraints is not inadvertently overlooked or ignored. It is important to make sure to:

- raise the priorities that are relevant for women during the consultation, to include them in the agenda and to give them equal weight with respect to other issues,
- women and men will benefit equally from the suggested coastal plan equally,
- the Sustainability Indicators and data are gender disaggregated whenever relevant,
- both women and men will be equally involved in the process of the indicators monitoring and evaluation.

2.2.4. Preparation of online workshops

Covid-19 restrictions may unfortunately continue to impose online consultations for the development of the costal plans of Tangiers-Tetouan-Al Hoceima region and Kotor Bay in the context of the GEF Medprogramme. Several techniques can be used during the sessions to facilitate interaction among stakeholders. At the same time, preparatory interactions with the stakeholders prior to the on-line workshops are key. Indeed, the latter are overwhelmed with invitations to various online events and their interest needs to be captured and maintained throughout the process. For this purpose, the following tools can be used: share in advance short notes summarizing the points that will be discussed during the event, send questionnaires followed by a summary of the results of the questionnaire, create a web platform/forum for discussion beyond the online workshops, etc.

Conclusion

Despite the specific context of the Kerkennah archipelago that led to a substantial adjustment of the Climagine approach, in particular the non-development of the sustainability indicators and the related amoeba diagram, Climagine provided a very useful framework for the structuring of the consultation process. Three priority factors that the sustainability and development of the Kerkennah archipelago depend on were identified, namely the degradation of fishery resources, coastal erosion and soil salinization. Governance bottlenecks were highlighted, in particular the non-compliance with the legislation in force and the absence of regular monitoring of coastal waters. Moreover, Kerkennah archipelago boasts remarkable ecosystems (palm groves, wetlands, seagrass, meadows). The consultations resulted in eight strategic recommendations aiming to mitigate the above-mentioned pressures through the restoration and / or preservation of ecosystems, the improvement of the existing infrastructure, the enhancement of the governance and the empowerment of local stakeholders (awareness raising, capacity building, etc.). On another level, a Geographic Information Systems (GIS) and a web platform were developed for viewing and easy access to available information.

The experience showed that in order for the costal planning processes to fully benefit from *Climagine* approach, it is key to anticipate the technical expertise that will feed the consultations with the local stakeholders. At the same time, this technical expertise should be obtained from the coastal planning processes. The joint and synchronized implementation of the respective steps of the Integrative Methodological Framework IMF and Climagine allows not only for the mutualization of resources but also for the amplification of advocacy at the

various levels (local and national) and consequently the enhancement of the ownership and the engagement of the stakeholders towards the implementation of the coastal plan. Hence the advantage of linking the IMF with *Climagine* and the development of a combined guide for their associated implementation.

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