Updating the Climagine methodology for its upcoming application in the GEF MedProgramme - Technical Report

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Introduction

This report is a short description of the experience and results of the implementation of the Climagine methodology in the framework of the development of the Coastal Plan for Šibenik-Knin County, Croatia from 2013 to 2015. The main objective of this report is to translate lessons learnt from Climagine's application in Croatia into a set of concrete methodological and operational recommendations for the future, specifically in the context of Climagine's application in the context of the GEF MedProgramme (2020-2024).

The implementation of the Imagine participatory method served as the basis for developing Climagine. Plan Bleu/RAC applied Imagine from 2000 to 2006 in five Coastal Area Management Programmes (CAMP) in the Mediterranean. These pilot implementations provided lessons learnt and recommendations regarding the improvement of the methodology and its future applications. Climagine then expanded on Imagine to address the specific challenges of climate changes and variability in coastal zones. Both approaches are articulated around four steps, as illustrated in Figure 1.

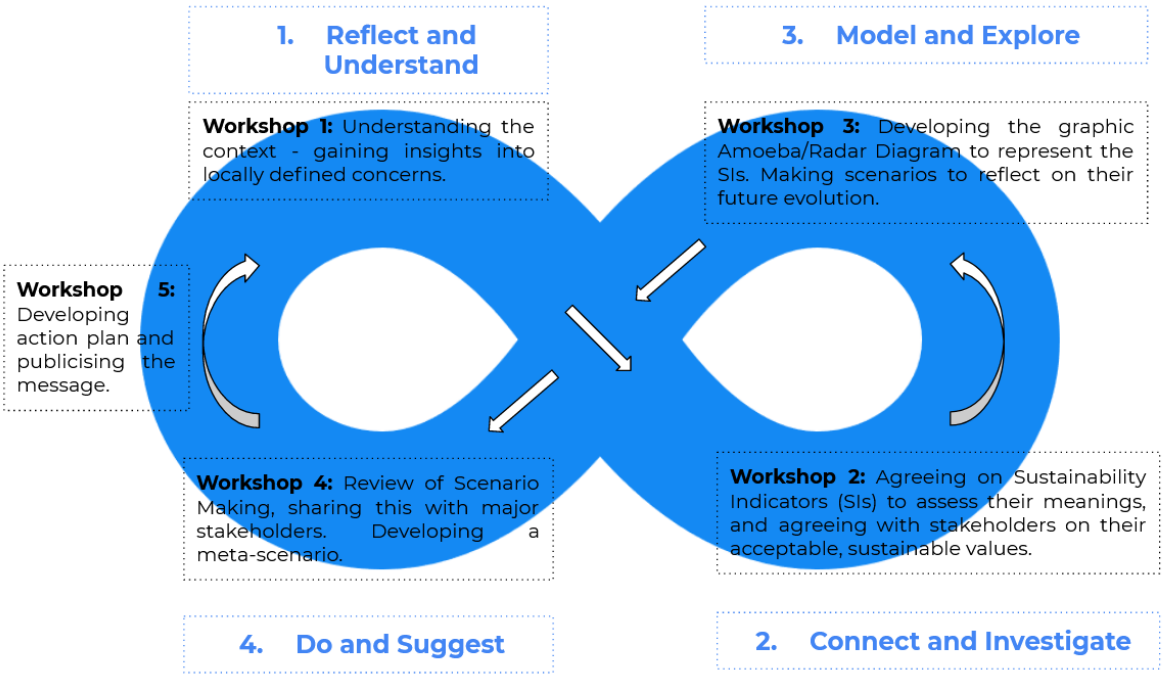

Figure 1 Steps of the Imagine approach (Source: Plan Bleu, 2016)

1. Context and Scope of the Climagine Methodology

To date, Climagine has been tested in two pilot zones: Šibenik-Knin County in Croatia and the Kerkennah archipelago in Tunisia. In Croatia, the methodology was implemented between 2013 and 2015 in the framework of the "Integration of climate variability and climate change impacts into national Integrated Coastal Zone Management (ICZM) strategies" Project (ClimVar Project, 2013-2015). ClimVar was funded by the Global Environment Facility (GEF), executed by the United Nations Environment Programme's Mediterranean Action Plan (UNEP/MAP), and implemented in eleven Mediterranean countries by several partners, including Plan Bleu (PB/RAC) and the Priority Action Programme (PAP/RAC). Climagine was applied in ClimVar in the following ways:

A. Climate vulnerability and climate change cost assessment, according to the Dynamic Interactive Vulnerability Assessment (DIVA) model

The results obtained for the entire Croatian coast were recalculated for Šibenik-Knin County, taking into account locally available data and especially the local economy. Special attention was paid to the possible costs of climate impacts for key socio-economic sectors such as tourism, agriculture, health and infrastructure, including potential damage caused by forest fires.

B. Elaboration of the Integrated Coastal Zone Management Plan (ICZMP), with specific focus on climate variability, impacts and potential adaptation solutions

Led by PAP/RAC, the creation of the ICZMP for the Šibenik-Knin County target area was in its final phase. The Plan's elaboration process was specific, due to its emphasis on climate variability and change. Indeed, Climagine aimed to promote this topic while applying a participatory approach involving local and national stakeholders as "experts at their level". The findings of this activity were used as baseline data for the creation of the final draft of the Šibenik-Knin County ICZMP, which was finalized at the end of 2015.

2. Methodological and Operational Lessons Learnt

Since Climagine is a structured participatory approach, it can achieve its maximum potential when applied in parallel and integrated into the development of a strategic planning document such as a Coastal Plan, to be adopted by a competent body. Indeed, Climagine can help to assess the coastal system's failures and challenges and understand their significance and magnitude. Several methodological lessons learnt for future implementations of Climagine are listed below.

Stakeholder identification: the first methodological step is to identify the right stakeholders to involve. These include representatives of decision-makers (at all relevant levels), academia, business and civil society. Indeed, a stakeholder mapping exercise should be carried out to understand who these key stakeholders are. To avoid overlooking some crucial players, it is useful to share this list with the working team and the workshop participants, consulting them to determine if any other stakeholders are missing. The relevant stakeholders will depend on the geographical scope of the Coastal Plan, but it is nonetheless useful to involve policy makers at a higher level (e.g. regional and national) or from the wider geographic area to improve their understanding and obtain their support. Indeed, some problems and impacts may be caused outside the project area, or some solutions may be easier to achieve if implemented beyond it as well.

Enhancing climate literacy: Climagine should contribute to the climate literacy of those involved. Indeed, the majority of decision makers as well as the general public know little about climate change and the climate crisis. Indeed, coastal zones are exposed to both context-specific and global climate change impacts, but societies, states and local populations in coastal areas are still not always fully aware of its consequences. This is apparent in "business as usual" everyday life, local economies, ecosystems, etc. Climagine workshops should therefore help stakeholders to learn more about these challenges, so that they can provide quality inputs to discussions and make more informed proposals and decisions. Informative presentations should be planned to cover the critical challenges of the climate crisis and its broader implications for sustainable development. This "initiation" may begin at the global level, with local experts then translating and illustrating the effects of these global challenges at the local scale. Such contributions provide an appropriate entry point for brainstorming as well as an improved understanding of the multi-scalar challenges of climate change. Furthermore, opportunities to discuss solutions to these solutions and eventually integrate them into the Coastal Plan will lead to more ownership of the Coastal Plan by the stakeholders involved, which can greatly improve the chances that the Plan is actually implemented.

Challenging rampant coastal development practices: over the past 2-3 decades, Coastal Plans in Croatia have sought to satisfy strong demand to develop Croatia's coasts through touristic and residential developments. Furthermore, these"wild" building practices often take place without official permission, generating numerous conflicts and local social tension in their wake. Local municipal authorities on the Šibenik-Knin coast cannot oppose the latter, and in some cases turn a blind eye to or even support them. The actors of such sprawling development activities do not, most often, take the consequences of climate change on coastal zones into consideration, since they rarely have any knowledge concerning its consequences on coastal terrestrial and marine zones. Indeed, a holistic approach to coastal development requires thinking about mitigation in addition to adaptation. In the near

future, numerous educational activities concerning climate change should be carried out on the Croatian coasts. Indeed, Climagine can contribute to such awareness-raising efforts [1].

Combining workshops with interviews and participatory methods: optionally, Climagine can include the conduction of interviews with individual decision makers or experts working in institutions, associations and companies dealing with coastal zone management. As a sociologist, the author suggests that a short questionnaire be sent to potential Climagine participants before the launch of the first workshop in order to rapidly launch the process of mapping key local needs and specificities and to better understand what Climagine should focus on in this specific context. For instance, the Šibenik-Knin Climagine process comprised interviews with 20 subjects from the County conducted during the summer of 2013. The interviews sought to determine the existence of a basic understanding of global warming and climate change among interviewees, while identifying stakeholders that could potentially lead activities on climate change mitigation and adaptation to climate change impacts. At the time, Croatian administrative bodies lacked organisational capacity to deal with climate change in general. A network of such active individuals was not yet established, and their work at the local level was neither organised nor coordinated. Instead, their climate change adaptation activities remain isolated. In 2021, we can conclude that the situation has nonetheless improved. In sum, these interviews significantly deepened the organisers' insights into the characteristics, knowledge and capacities of the local actors who were in some way dealing with climate change and its impacts, or who will be forced to deal with them in the future.

Local expert teams and Climagine Sustainability Indicators: a local expert team was formed for the elaboration of the Coastal Plan on a voluntary basis. Such experts can act as translators of ambitions into "sustainability indicators". Their roles should be foreseen in the methodology, while their terms of reference should include the development of the latter. The indicator development and planning process should follow the same iteration closely. Furthermore, these indicators can serve as a monitoring framework at low cost, based on both local and expert knowledge. If Climagine is used in parallel with the development of the Plan, it could benefit from expert knowledge on the issues that are analysed during the Plan's development. The local experts can thus propose key indicators and their sustainability values (i.e., "Band of Equilibrium" or BoE in Climagine). If the BoE is not easy to determine, the local experts can raise this issue during the Climagine workshops so as to agree on the sustainability levels together. For the remaining issues, the Climagine and Coastal Plan teams should use existing environmental data to find and propose indicators that can be used. Regional, national or international strategic targets can also assist in deciding on sustainability levels. In Croatia, it was recommended that "climate" should figure as an indicator. It makes sense to highlight the need to select the indicators at the beginning of the workshop, which

[1] Here, it is important to remember that the Croatian coastal zone is 1,777 km long without islands and around 6,000 km with all 78 islands and 524 small, mostly uninhabited islands.

was not the case in Croatia or Tunisia. Among others, this can ensure that the indicators fit with local realities and concerns.

The Climagine Amoeba: the development of the Climagine Amoeba diagram could benefit from Climagine's previous implementations. Indeed, the crucial dimensions selected in Šibenik-Knin County could serve as a starting point. For new Climagine applications, it could be discussed whether the same dimensions can be applied, or if any aspects should be added or changed. It should be kept in mind that existing monitoring may limit the ideal structure of the Amoeba. Another source of inspiration for the Amoeba's dimensions could be the United Nations Sustainable Development Goals. Indeed, providing a starting point for discussion could speed up the process and enable participants to progress more quickly. For groups as heterogeneous as Climagine stakeholder groups, the method can sometimes be too demanding, as was the case in Tunisia. Indeed, the Climagine facilitator needs to be experienced in building the participants' confidence and interest in both the process and its results.

Using Climagine in future planning on the Croatian Adriatic coast and islands: in general, local actors on the Adriatic coast and islands have poor knowledge concerning climate change. On the other hand, they are curious and motivated to learn about it. There are now elementary, secondary or university courses in Croatia concerning these topics. Moreover, Climagine in Croatia was met with solid interest from local stakeholders, especially at the beginning. This was rooted in some real life circumstances, since several impacts of global warming were already apparent in the County's coastal zone. A similar situation can be observed in the broader Croatian Adriatic coast and the Mediterranean in general. Indeed, the past decade on the Adriatic coast in Croatia was the warmest ever since the beginning of regular temperature measurements. The summer of 2015 (July and August) broke all heat records. Other extreme weather events linked to climate change in the County included large forest fires in the summer as well as flash floods in the touristic town of Vodice near Šibenik as well as several other locations. All in all, the application of the Climagine method in Šibenik-Knin County in Croatia was a pioneering effort, and its methods and results have a good chance to be repeatedly consulted by other 6 Croatian coastal counties in the future. These counties' potential or extant Coastal Plans are a fruitful framework for this - Rijeka and Split are actually already working on their own Coastal Plans.

3. Recommendations for future implementation

Climagine's future implementations of Climagine several preconditions/steps should be observed in order to achieve optimal results. Firstly, there is a need for a leader with exceptional workshop moderation skills who understands the importance of integrating Climagine's results into the Coastal Plan. It is also crucial to obtain the trust of the local community while generating interest in this joint work. Indeed, since the Climagine approach was an innovative approach in Croatia, it was highly important to engage in a communicative and friendly way, not only as experts but also as creative and adaptive social partners

engaged in a collective learning process. Moreover, informed actors are better able to understand the threats and opportunities at hand. By providing a basis for learning and discussion, the Coastal Plan/Climagine process can ease the most difficult task – prioritisation! Indeed, prioritisation is extremely difficult for professionals, so it is often left to decision makers. Nonetheless, the combined expertise and proposals coming from Climagine participants and local experts can assist decision makers in establishing prioritised action plans in terms of local climate change adaptation strategies. However, this task is often more difficult than what implementers think and thus remains vague, leaving the final choice to decision makers. All in all, experts cooperating with local actors are ideally placed to set priorities through a process in which solutions can be analysed in accordance with the scale and timing of impending climate risks.

By combining the Coastal Plan and Climagine, expert knowledge is gradually and qualitatively combined with local knowledge. The Coastal Plan drafting process and the discussion of Sustainability Indicators help to improve local knowledge and incorporate it into the joint Plan, which thus becomes "ours" in the target area. The process of drafting the Coastal Plan, i.e. the discussion of Sustainability Dimensions and Indicators provide an ideal opportunity for the stakeholders involved to better understand climate change. Indeed, local understandings of climate change as a planetary process today are poor. Conversely, Coastal Plans are relatively concrete instruments, and numerous local stakeholders have their own interests in articulating goals and solutions that may become part of a given Plan. Motivated by their own concrete interests in the local coastal area's development, these stakeholders are thus encouraged to face climate changes at the local level, and begin to understand climate change issues and inject them into the Plan's proposed solutions.

Indeed, if the Coastal Plan and Climagine synergistically achieve a political will to implement the Coastal Plan, we can say that both methods have succeeded and that a possibility has been created to gear the future of the Plan's target area towards sustainability. The process of implementing Climagine and drafting the Coastal Plan are crucial to creating or maintaining the political will for implementation. According to the author's experience as a Climagine consultant, this is the most important task for a Climagine expert. By incorporating the results of Climagine into the Coastal Plan, Climagine gains new significance as it becomes part of a document that offers solutions to the complex priority issues facing the coastal zone. Through the adoption of the Plan by the public administration bodies, the chance that its proposals are implemented and that change on the ground actually takes place are significantly increased.

Alternatively, Climagine could be used as an independent exercise to improve participants' understanding of holistic and systemic approaches. If used in a group of experts or administrators from different sectors or among students, it can contribute to their understanding of the general challenges of sustainable development as well as to raising

awareness of different issues, including the climate crisis. In such cases, however, it loses the opportunity to contribute to action and to real change on the ground.

Conclusion

At the end of the Climagine project in Croatia, as a sociologist I can personally conclude that it is clear that the Climagine can support and inform more ambitious and creative Coastal Plans over the coming years. Conducting Climagine workshops in parallel with the process of drafting the Coastal Plan ensures the timely inclusion of the positions, concerns and knowledge of local actors. From my point of view, this is extremely important to ensure the final success of the process. In addition, Climagine provides a holistic overview of the key dimensions of sustainability and allows for participatory goal setting. In the future, Climagine should focus on improving its Sustainability Indicators. Finally, the Climagine Amoeba is a simple Climagine tool to synthesise the state of climate change indicators over a given period of time in a given coastal zone. Nonetheless, collecting the necessary data for this simple and effective tool can sometimes be a problem in the Mediterranean.

ANNEXES

The Amoeba for Šibenik-Knin county in Croatia for 2011 is presented below, as well as the Sustainability Indicators established through the Climagine workshops.

Dimension	Indicator
Water	1 Average annual consumption of water resources (%) 2 Average consumption of water resources in August (%)
Sea	3 Average connection to waste water treatment facilities (%)
Fires	4 Annual fire site area size (ha) 5 Average renewable energy in total energy consumption
Physical space	6 Apartments for permanent residence ratio in the total No. of app. in CZ (%) 7 Population density in the CZ compared to the density outside of the CZ
People	8 Ratio of employed in the entire working population in CZ and outside CZ 9 High school, grammar school and higher education graduates ratio in 15+ population in CZ/outside CZ
Environment protection	10 Protected sea areas in relation to total sea areas (%) 11 Protected land areas in relation to total land areas (%)
Waste	12 Kilogramme per resident in ŠKC 13 Kilogramme per resident in CZ and outside CZ
Soil	14 Irrigated agricultural land (ha) 15 Soil used for organic plant production (ha)

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