









Integrated tools and methodologies for sustainable Mediterranean cities

D4.1.2. Contextualised decision-making methodologies for partner cities









Project number: C_B.4.3_0063

Project acronym: Sustainable MED Cities

Project title: Integrated tools and methodologies for sustainable

Mediterranean cities

Call: Capitalization project

Start date of project 1 October 2021

Duration 27 months

Deliverable ID D4.1.2

Due date of deliverable 31/12/2023

Organisation leader for this deliverable PP04 Jordan

Dissemination level Public

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Document history			
Version	Date	Revision Reason	Reviewer
01	13.12.2023	Draft	PP4 GIM
02	18.12.2023	Revision	Partners
03	31.12.2023	Final	PP4 GIM





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Introduction and overview

1.1. Executive Summary:

This document describes the contextualised decision-making methodologies for Sousse ,Irbid , and Moukhtara municipalities as partner within the Sustainable MED Cities project .

The Sustainable MED Cities project defined and tested a system for measuring urban sustainability adaptable to Sousse, Irbid, and Moukhtara cities and a passport to compare performances, and this through the adaptation of integrated tools and methodologies for sustainable development in partner cities.

The project goals align with the importance of stakeholder engagement, which is a crucial issue for the success of the Sustainable MED Cities project.

For this, the contextualised decision-making methodologies for partner cities based on the use of the assessment tools SNTool, (urban scale) and SBTool (building scale) in order to prepare the optimal retrofitting concept for an urban area and single buildings belonging to it, will include the determination of specific caracteres for each phase process of decision-making methodologies.

Retrofitting projects are opening the doors for new cost effective and efficient retrofitting options, as at the urban level, the synergies between the buildings can be exploited, resulting in a win-win situation for the urban area as a whole and for its individual buildings.









2. The seven key phases for Decision-Making methodology:

The Decision-Making methodology is divided into the following seven phases (Fig :1) each phase is composed of a number of steps with its respective tasks and testing protocol templates to be filled.

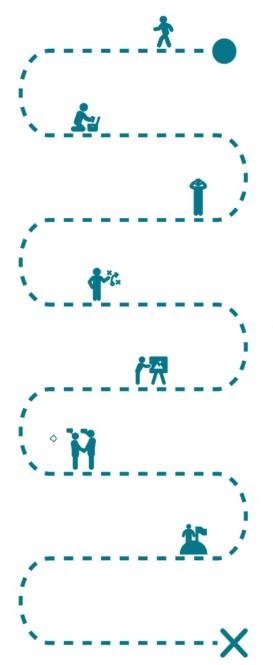
- Initiation Phase.
- Preparation Phase.
- Diagnosis Phase.
- Strategic definition Phase.
- Retrofit Scenarios.
- Decision Making.
- Retrofit Concept.











Initiation

The initiation phase is the first step in the decision-making process to define the optimal retrofitting concept for urban and building scale projects. The objective is to select the urban area and the buildings for which the retrofitting concept will be defined, collect key information, identify the stakeholders to involve and set the working group (SMC WG) responsible for the decision-making process.

2. Preparation

The preparation phase is the beginning of the urban and building retrofitting concepts development. The preparation phase will provide the necessary information to create a sufficient working basis for the next phases.

3. Diagnosis

The aim of the diagnosis phase is to analyse the current state of the buildings and the urban area. The current state is to be analysed using SNTool and SBTool. The values of the indicators associated to the assessment criteria are compared against a benchmark (fixed in the Preparation phase) which allows evaluating the performance compared to an average value for the urban area or building type. Consequently, it is possible to identify the strengths and weaknesses of the urban area and buildings

4. Strategic Definition

The main goal of this phase is the definition of the main framework conditions for the later retrofitting design based on the results of the diagnosis phase. The strategic definition therefore serves as pointer for the later design phases by setting meaningful targets for the retrofitting project and by identifying the main constraints and restrictions which may limit the retrofitting design.

5. Retrofit Scenarios

In this phase, the SMC WG develops alternative possible retrofitting scenarios for the urban area and the buildings that fulfil the defined sustainability targets in the Strategic Definition phase. As it's often the case, the team might come up with number of different scenarios, all of which fulfil the sustainability targets. Therefore, all valid scenarios would then be assessed in the next phase to choose the optimal one.

6. Decision-Making

The overall goal of this phase is to select the best scenario in terms of energy and cost efficiency as well as the overall sustainability among the ones created in the previous phase (5 Retrofit Scenarios). Only the scenarios which have reached the sustainability targets (4 Strategic Definition) can be compared in the decision-making phase. The selected best scenario will then developed in a retrofitting concept in the next phase (6 Retrofitting concept).

7. Retrofit Concept

In this phase, the SMC Team is required to detail the best scenario in a retrofitting concept. The retrofitting concept is a report containing the description of the interventions foreseen by the scenario. The interventions are illustrated for the urban area and the building(s) and organised following the issues of SBTool and SNTool.

Fig N1: Decision-Making Methodology Manuel.









3. Contextualized decision-making methodologies for partner cities:

The contextualised decision-making methodologies for partner cities are related to the implementation of the seven phases of decision-making methodologies as process to define the best retrofit scenarios for city.

The adaptation of the decision-making methodologies by each municipality represents a step toward concrete implementation of the integration tools and decision-making methodologies for sustainable partner cities within the characteristics of the local context.

The local contextualization of the integration tools and decision-making methodologies aims to identify a group of local characteristics linked to the seven key phases of the decision-making methodology in such a way that each partner city can modify, change, improve, extend, and add to this methodology in order to better adapt to partner cities. In fact, the local process of contextualizing of the tools and decision-making methodologies of urban forms for partner cities according to the definition of specific indicators makes it perfectly fit the specific needs and prerogatives of the cities involved. That contextualization can be achieved based on the testing activities the three municipalities experienced during the last year of the project.









3.1. Contextualize decision-making methodologies in the context of the characteristics of the city of Irbid

During the testing activity in Irbid municipality, the contextualization of the Sustainable MED Cities generic decision-making methodology highlighted several critical considerations, to effectively address the municipality's needs, a key step involved establishing clear metrics and Key Performance Indicators (KPIs) that are sensitive to the Jordanian context. Continuous refinement of strategies was guided by community feedback and outcomes, ensuring adaptability to the local environment. Recognizing the broader impact of sustainable urban development, the most pressing Key Performance Indicators (KPIs) were shared with other cities, fostering a collaborative network for shared learning and improvement. However, challenges emerged during this process. Limited accessibility posed issues, as a digital divide excluded certain populations from online resources. Data quality and reliability concerns included incomplete or outdated information and a lack of standardization in data formats. Engagement and participation hurdles were observed, with low community engagement and limited public awareness. Integrating online discussions into policy and planning faced challenges due to bureaucratic hurdles and resistance. Resource constraints, financial limitations, and technology barriers, including technical expertise and digital literacy, were identified. Privacy and security concerns, as well as issues related to language and cultural diversity further emphasized the complexity of implementing sustainable practices in diverse urban settings. The lack of standardized metrics posed measurement challenges, making it difficult to assess and compare the sustainability of cities consistently. These insights







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underscore the need for nuanced approaches in tailoring sustainable methodologies to the unique circumstances of municipalities like Irbid. The data accessibility faced several problems during the collection process.

The residents' opinions were difficult to obtain, and the sample preparation took a long time. The adhocracy platform was also challenging to use due to a lack of online platform experience among the neighbourhood residents, and the language barrier further complicated the issue. To improve the situation, integrating the platform with an easy-to-use mobile application with different language options, including Arabic, would be beneficial. This would lead to higher response rates.

Regarding data quality and reliability, the data received from some institutions required completion, correction, or long processing. Engaging professionals from the targeted entities in the training process would be necessary. This would give them insight into the type of data needed in the analysis process, which would lower the time and effort required to obtain and process data.

Providing the calculation methods and data requirements for the indicators at the beginning of the process, before the indicator selection, would be beneficial and timesaving. This would enable professionals to identify the sustainability indicators they can calculate at the beginning of the process, leading to more accurate indicator values rather than estimates.









3.2. Contextualised decision-making methodologies results:

3.2.1. Comprehensive Building Assessment

To gain holistic insights into sustainable building systems, it is essential to expand the scope of assessment to include a diverse range of residential and public buildings. By considering various types, sizes, and ages of buildings, a more nuanced understanding of the challenges and opportunities for sustainability can be obtained.

3.2.2. Enhancing community engagement:

Utilizing online virtual platforms, such as adhocracy, can significantly enhance community engagement in the co-creation process of sustainable building systems. These platforms facilitate broader participation, making it easier to reach target respondents and ensure inclusivity in decision-making processes.

Enhance the Sustainable MED Cities methodology by fostering community engagement according to Irbid context, utilizing innovative technologies for resource management, and promoting educational initiatives. Collaborate with neighborhoods community, in order to prioritize social equity, and regularly update policies to align with evolving SDGs indicators and targets and global best practices.

3.2.3. Multi-Stakeholder Dialogue

Collaboration with various stakeholders, including experts from diverse backgrounds, enriches the outcomes of sustainable building initiatives. By involving a broader range of









perspectives, useful indicators can be selected, and retrofitting scenarios and interventions can be designed more effectively. Partnering closely with the municipality to include stakeholders ensures alignment with community needs and goals.

3.2.4. Measuring and monitoring system

Employing a measuring and monitoring system to implement a robust monitoring and evaluation system that helps track progress in order to identify areas for improvement and ensure accountability in achieving sustainability goals.

3.2.5. Policy alignment:

Policy alignment: to align local policies with broader regional and national sustainability goals. This is critical for creating a cohesive and interconnected network of sustainable cities.

Sustainable building systems are essential for ensuring the long-term well-being of communities and the environment. To achieve comprehensive insights and successful implementation of sustainable practices, it is imperative to consider various types, sizes, and ages of buildings. This report outlines key strategies aimed at enhancing sustainable systems through community engagement, stakeholder involvement, adaptive governance, monitoring systems, and policy alignment.

3.2.5. Adaptive Governance

Adopting an adaptive governance approach is essential for responding to changing circumstances and community feedback, which are integral to the success of sustainable







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projects. Flexibility in decision-making processes allows for timely adjustments and ensures that initiatives remain relevant and responsive to evolving needs.

3.2.6. SWOT analysis

Establish SWOT analysis then Establish clear metrics and Key Performance Indicators (KPIs) to measure progress and continually refine strategies based on Jordanian context and community feedback and outcomes.

5. Conclusion

Enhancing Contextualised decision-making methodologies for partner cities need adaptation to methodology process at local context.

The specificity of the local context is materialized at the level of building and neighborhood local indicators.

Enhancing sustainable systems requires a multifaceted approach that encompasses comprehensive assessment, community engagement, stakeholder involvement, adaptive governance, monitoring systems, and policy alignment. By implementing these strategies, communities can foster resilience, promote inclusivity, and drive meaningful progress towards sustainability goals. Collaboration and proactive engagement with stakeholders are key to realizing lasting impact and creating thriving, resilient communities for future development.









6. Annex: Qualitative feedback collection on the Sustainable MED Cities Decision-

Making Methodology and test activity process.

The propose of this table is to develop clear perceptions and qualitative feedback in applying the SMC decision-making methodology, and also about the testing activity process, This is achieved through differentiated questions divided into two section related to the experiences of both municipality representatives and external experts, who provided their expertise to the municipalities to carry out the test activity.

Sustainable MED Cities Decision-Making Methodology	
	The representatives of the municipalities
	involved in the application of the SMC Decision-
	Making Methodology declared, at the end of
	the process, that the methodology is clear and
	well detailed, but the process is a little bit long
	in its entirety.
Did you find any difficulties in	For sure, the training sessions performed at the
understanding the SMC Decision-	beginning of each phase of the methodology
Making Methodology? If yes,	helped to ensure a good understanding of the
please describe them.	activities to be carried out.
	To achieve valuable results, they highlight the
	strong importance of the cooperation together
	with the professionals and external experts
	involved in the development of the whole
	process.
Do you think it would be necessary	More in general, the representatives of the
to modify the SMC Decision-Making	municipalities involved stated that no major









Methodology to make it more suitable for the application in your local context?

If yes, could you describe what changes are necessary? Are there redundant aspects or others lacking?

changes are needed to the methodology in relation to the local priorities.

Anyway, since the SMC Decision-Making Methodology takes time to be implemented, it's sometimes not easy having the availability of the municipal executives for a long time due to their engagement in other activities. Based on that, it would be efficient to compact some phases, simplifying the overall process.

Did you consider the participatory moments foreseen by the methodology useful to properly involve the local stakeholders and achieve the final result?

All the representatives of the municipalities agreed on the fact that participatory moments within the SMC Decision-Making Methodology are very important because the involvement of the stakeholders can ensure credibility to the results obtained, accepted and validated by all stakeholders, and above all, it helps stakeholders to hold the responsibility for the decisions taken.

Would you suggest this kind of approach to other municipalities to find the optimal sustainability retrofit concept for buildings and urban areas?

All the municipalities expressed the intention to suggest the SMC Decision-Making approach to other municipalities since they trust on it.

Concerning Irbid municipality, they claimed that they will suggest this approach to other municipalities and urban planning department at the universities, international organization as UN HABITAT, bringing their experience in Sustainable MED Cities project to find the optimal sustainability retrofit concept for









buildings and urban areas. In fact, they started the preparation of the VLR (voluntary local review) document for Greater Irbid Municipality introducing the project for the consultant to be taken in consideration. The Voluntary Local Review (VLR) is an analysis of the Sustainable Development Goals (SDGs) for a specific local context.

Concerning Sousse Municipality, they intend to communicate to the other municipalities of the Greater Sousse about the experience carried out during the project, trying to involve them in using the SBTool and SNTool contextualized to the local priorities. During an LPC they have already informed the municipality of Monastir about that.

Have you ever experienced a similar approach to conduct a decision-making activity in urban planning?

More in general, this was the first experience in applying this kind of approach to conduct a decision-making activity in urban planning.

Only the **Municipality of Sousse has experimented a similar approach** during the design of an eco-district in a subdivision of an area of its territory in partnership with the AFH.

Participatory approach is used since the PDUGL of the World Bank has been approved.

Do you have any other ongoing or planned activities where this approach could be capitalised?

In the case of the **Municipality of Irbid**, they stated they can capitalize the SMC approach in a new project they are preparing, focused on a

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voluntary local review document for Greater Irbid Municipality. Furthermore, the approach will be shared in the University field.

Concerning the **Municipality of Sousse**, they will use the tools developed during the SMC project, to assess the impact of the measures integrated into the development plan of the City of Sousse in the short and medium term.

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1 636	activity	y process

Difficulties faced by the representatives of the municipalities during the overall process are different, listed below:

What kind of difficulties did you face during the overall test activity development?

- The process of the selection of the local indicators would have taken more time and meetings with stakeholders.
- Data collection and availability of information necessary for calculating the indicators.
- The repeated mobilization of members of the SMC committee during the whole process.
- The accessibility and the use of the online platform.

What would you change to improve the test activity process?

No major changes have been pointed out.

A suggestion related to the possibility to **reflect**

and highlight, within the overall score of the urban area, the political aspects characterizing the local context and conditions, including them somehow.









Municipalities stressed the fact that is really important to involve professionals and experts with different backgrounds and expertise since the aspects highlighted during the process are several.

Based on your experience, would you make recommendations regarding the selection process of the external experts to be involved in the test process?

Concerning the recommendations regarding the selection process of the external experts to be involved in the test process, municipalities stated that it important that the experts involved have professional experience and knowledge about the urban area to be assessed.

Furthermore, is essential to ensure direct communication between the municipality and the expert throughout the whole process.

Finally, it's fundamental to work on recruitment at the start of the project to have time to complete the testing process.

FREE COMMENTS BASED ON YOUR SMC TEST EXPERIENCE

Concerning the perspective of **Irbid Municipality**, since they are financially and administratively independent in making decisions, they have the ability to follow up on the work of the SMC tools and thus will ensure the sustainability of the project and its adoption in the future planning process for the City of Irbid, the participation of other municipalities and its presentation at the university level, and in local and international organization.









Concerning the perspective of **Sousse Municipality**, they suffer the fact of not having enough visibility regarding the availability of the tools and means of capitalization for stakeholders and other municipalities.









<u>Questions addressed to the **SMC Team** (the group of experts appointed by the municipality to manage the whole decision-making process)</u>

Sustainable MED Cities Decision-Making Methodology

Did you find any difficulties in understanding the SMC Decision-Making Methodology? If yes, please describe them.

External experts working with the municipalities on the SMC Decision-Making Methodology considered the approach well-structured, in a very simple and clear procedural manner. They stated that was easy to understand for both well trained experts as well as for those with basic knowledge in the empirical research.

Do you think it would be necessary to modify the SMC Decision-Making Methodology to make it more effective in your local context?

If yes, could you describe what changes are necessary? Are there redundant aspects or others lacking?

From a practical point of view, focused on the technical instruments used to carry out the process, they suggested having a more flexible and contextualized assessment platform and to make a linkage between the word templates and the online platform, which can ensure an easier track of the revisions in both documents. Another proposal is focused on a better distribution of the stakeholders' roles during the participatory moments. It would be, indeed, preferable having technical discussions only with technical experts, because of the topics addressed.

A suggestion coming from the testing experience is focused on the **involvement** throughout the testing activity of other local bodies, like for example the Ministry of Local Authority since municipalities are not









independent bodies in taking decisions. Additionally, it will be good to operationally involve in the process agencies/authorities, like water supply, electricity, telecommunication, transportation, etc. to cooperate with the municipality in achieving the expected results. All the experts belonging to the SMC Team of the three municipalities agreed on the fact that the participatory moments foreseen by the SMC Methodology are fundamental to properly involve the local stakeholders throughout the overall process. The participatory approach Did you consider the participatory allows to identify and implement the optimal moments foreseen scenario to be developed, letting stakeholders by methodology useful to properly understand the objective of the process, involve the local stakeholders and expanding their knowledge on sustainability. achieve the final result? In the case of Sousse, the external experts even extended this approach to the maximum level to better establish the legitimacy of the work and at the end of the testing activity, they selected the retrofitting scenario voted by the stakeholders. None of the experts has experimented the same Have you ever experienced a approach to conduct a decision-making activity similar approach to conduct a in urban planning; they had similar experience decision-making activity in urban mainly in relation to the application of similar planning? strategy based on the participatory approach.









It's important to underline that the experts engaged by the municipalities have different work field, different background and jobs responsibilities. Among them there are also some academics which are currently teaching at the university similar courses in master level degrees, as well, they supervised and published a number of related articles in urban planning and planning management.

On the other hand, some of the professionals involved in the project activity, worked in public administrations or as consultants, and so they know planning strategies and planning management processes.

Test activity process

What kind of difficulties did you face during the overall test activity development?

The totality of the answers has focused on one common difficulty during the testing activity: the lack and the difficulty in collecting data. Indeed, a common denominator between the municipalities is the lack of well-structured databases collecting the information related to the city. And, where databases are in place, sometimes was not easy having access to those data, necessary to calculate the indicators.

Furthermore, in some cases, the long and slow administrative procedures for the selection of the experts, caused a slowdown of the testing activities.









	From if the training against a grant and a
	Even if the training sessions organized per each
	of the 7 phases of the SMC Decision-Making
	Methodology have been recorded, with the
	possibility to listen to them again at any time,
What would you change to improve	the municipality suggested to perform them at
the test activity process?	the same time as each phase.
	Including the application of the Sustainability
	City Tool (SCTool) has been considered a way to
	improve to overall activity process.
	All the experts of the SMC Team agreed on the
	fact that the cooperation with the
	municipalities was very useful above all for
	facilitating the communication with local
	offices/agencies responsible for the provision
Was it easy to coordinate testing	of data for indicators calculation. In some cases,
with the municipality?	the municipality was very responsive, in other
	cases less but they all agree on the fact that the
	coordination and the cooperation is
	fundamental throughout the whole testing
	activity.
	In relation to the time allocated to carry out the
	testing activity, experts considered it quite
What would you suggest as an	sufficient to properly conduct the process.
overall development timing for this	They all agree in extending the duration of the
type of activity?	phase related to the data collection since it has
,	been considered the most time demanding step
	of the SMC Decision-Making Methodology.
	3









Instruments / Documentation / Materials

The documentation provided since the beginning to carry out the testing activity was exhaustive?

More in general, experts considered the documentation provided exhaustive to carry out the process but some of them suggested to merge some of the templates provided, also asking for more flexibility in filling out them.

On the other hand, more exchanges in relation to the setting of the benchmarks (technical references, feedback from colleague's experiences etc.) would have been useful and functional to the scope of the process.

Concerning the data collection, what would you suggest for improving the collection process?

To improve data collection process, experts suggested to devote more time to this activity also because, in some cases, database access requests permission to access and it takes time. More in general, a full coordination with all relevant authorities that own data and making agreements facilitate obtaining data. Having data on international website specialized in topics related to sustainability would facilitate data collection process.

From a practical point of view, experts suggested to **introduce some formulas** which could give the possibility of entering inputs which would help to save the data collected and make it while the results would be automatically generated.









Would you suggest including other kind of documentation/web support to properly conduct the test?

Experts proposed to include calculation sheets linking the online platform to the word templates including the raw data collected to be able to track how the benchmarks and targets were generated.

Was it easy to learn how to use the online assessment platform? How would you improve it?

Experts were all able to easily use the SMC online assessment platform, anyway, the suggested two main important actions to be implemented:

- A fully operative platform in local language in order to facilitate the use of it also from experts not able to read in English.
- Include in the platform all the 7
 phases the SMC Decision-Making
 Methodology is composed; this would
 make it easier to understand how the
 project will evolve from the data
 collection phase till the retrofitting
 concept.

FREE COMMENTS BASED ON YOUR SMC TEST EXPERIENCE

Concerning the **experts engaged by Irbid Municipality**, they are very interested in future application of the SMC Decision-Making Methodology and in the use of the SMC assessment platform which is considered as monitor observatory for developing the municipal plans and decisions. On the communities' level, it will enhance a built and livable environment, advising on smart sustainable solutions for climate change threats, the energy efficiency management and livable cultures.









Concerning the **experts engaged by Sousse Municipality**, they stated that a strategy (medium and long term) must be implemented to extend the use of these tools. The potential of SMC tool is real in their region (MENA), a specific program must support it. In the city of Sousse, AFH created large undeveloped areas, and so they considered the experience acquired through the study of this district as a demonstration project which will allow this public developer to better address sustainability aspects in future projects, not only in the city, but also in many other places in the hole country.

Furthermore, the use of the tools developed by this project could be very useful for cities in the south of the Mediterranean, especially as they are subject to significant demographic growth.

This project calls for continuation through ongoing awareness-raising work and dissemination as widely as possible. This is the sine qua none condition for a true transcription into the rules and then into practice of the expected results.