Sustainable MED Cities

Integrated tools and methodologies for sustainable Mediterranean cities

D5.1.1 – The Sustainable Med Cities training system framework

This project has received funding from the European Union's ENI CBC Med Programme under Grant Contract C_B.4.3_0063

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	D5.1.1
Due date of deliverable	31/12/2023
Organisation leader for this deliverable	PP01
Dissemination level	Public

Name of Author (s)	Organisation
Paola BORGARO Elena BAZZAN Andrea MORO	iiSBE ITALIA R&D

Document history

Version	Date	Revision Reason	Reviewer
V01	15/01/2024	Draft	iiSBE
V02	31/01/2024	Project partner internal review	All PPs
V03	15/02/2024	Final Version	iiSBE

This project has received funding from the European Union's ENI CBC Med Programme under Grant Contract C_B.4.3_0063

Table of Contents

This project has received funding from the European Union's ENI CBC Med Programme under Grant Contract C_B.4.3_0063

1. Acronyms

ACRONYMS	
SMC	Sustainable MED Cities
SBTool	Sustainable Building Tool
SNTool	Sustainable Neighborhood Tool
SCTool	Sustainable City Tool
SBE	Sustainable Built Environment
MED	Mediterranean
DX.X.X	Deliverable X.X.X
PPs	Project Partners
PP1	Project Partner 1: iiSBE Italia R&D (IT)
PP5	Project Partner 5: National Observatory of Athens – NOA (GR)

2. Executive summary

The deliverable D5.1.1 describes the general structure, the methodological approach and the different components of the training system implemented and tested in the Sustainable MED Cities (SMC) project.

The SMC training system represents the capitalisation of the training framework implemented and tested in the CESBA MED project and its adaptation to the needs and specificities of the south and east sides of the Mediterranean area.

The training system represents a key component for the SMC project in order to achieve the expected objective: providing Mediterranean public authorities with advanced capacity-building programmes is the way to step up their capacity to drive, through the use of SMC tools, the sustainable renovation of urban areas by developing and monitoring effective policies, strategies and action plans in relation to the Mediterranean strategy for sustainable development 2016-2025.

The SMC training system was designed to provide to the concerned target groups with the skills and knowledge needed to use effectively the methodology and tools developed and tested during the SMC project, in particular:

- the SMC assessment system, a set of indicators for measuring the level of sustainability at different spatial scales (building, neighborhood, city);

- the SMC online assessment platform, enabling users to generate contextualised assessments tools for any MED city;
- the SMC decision-making methodology, that enables the decision-makers to identify the most convenient retrofitting scenario at building, neighborhood and urban scale.

The SMC training system represents the evolution and adaptation of the training system tested in the CESBA MED project that was at the origin of the SMC capitalization project. The adaptation process is illustrated in detail in paragraph 3.2.

The SMC Training System is tailored for two specific main target groups:

- Technicians: this group includes professionals, mainly architects and engineers, building designers, urban planners, SMEs technicians, public bodies' technical staff. All of them have a technical profile and need to learn how to use SMC assessment tools both in terms of technical and functional/operational aspects. A further subdivision of this target group into two more specific sub-groups, is deemed necessary to reflect the different ways the SMC tools and methodologies can be used in defining and implementing urban plans. The two subgroups, the "assessment process coordinators" and the "area experts", are clearly defined in Paragraph 3.3.
- Decision-makers: this group include policy makers, investors, developers, public bodies managers. They need to reinforce their capability to set up high quality energy retrofitting actions on public buildings or new construction projects and to step up their capacity to drive, through the use of SMC tools, the sustainable renovation of urban areas as part of effective urban development plans.

Chapter 3 ends with the description of the learning outcomes expected in relation to the different training target groups.

Chapter 4 describes the SMC training system components:

- the methodological approach which underlies the whole SMC training system;

- the SMC modular structure and the related content;
- the SMC training material, available in 3 languages (English, French, Arabic);
- the SMC e-learning platform

Chapters 5 focuses on the description of SMC courses carried out during the project implementation. Three training paths were designed and implemented, specifically targeted to technicians and decision makers of the three pilot cities (Moukhtara in Lebanon, Irbid in Jordan and Sousse in Tunisia) to support them in using the SMC tools and decision-making methodology during the test phase.

During the last month of project implementation, training workshops organized in combination with the final national dissemination events and aimed at a wider audience of external stakeholders were provided. These workshops also represented an introduction to the SMC online courses available on the SMC e-learning platform.

It is important to highlight that the SMC training system is designed to be used even beyond the formal conclusion of the project in order to maximize the diffusion in the use of the SMC tools and methodology by the municipalities and public bodies of the whole Mediterranean area.

This project has received funding from the European Union's ENI CBC Med Programme under Grant Contract C_B.4.3_0063

3. General features of the SMC training system

3.1. The scope of the SMC training system

The new sustainable approach to spatial planning and management of Mediterranean cities, offered by the SMC project through the innovative tools and methodologies set up and tested during the project implementation, needs public authorities, both technicians and decision-makers, properly trained in order to maximize the effectiveness in using them.

Already the test experience carried out in 2018-2019 through the implementation of the pilot case studies of the CESBA MED project had highlighted a skills gap of public authorities and a significant need of upskilling to make the different target groups able to use properly the innovative tools and methodology made available by the project. This result can only be achieved through an adequate training system that meets the end users' features and needs.

More specifically, the SMC training system was conceived to respond to a twofold need:

- enable the municipalities having to carry out the pilot case studies in order to test the methodology and tools during the project implementation to use them correctly and with maximum effectiveness;
- act as a lever to promote and disseminate the SMC tools and methodologies in other territories and cities of the MED area, even beyond the formal conclusion of the project. In order to make the results of the SMC project as effective and lasting as possible, it is crucial to guarantee that the upskilling of policy-makers and technicians is not limited to the project implementation period, but it must go beyond the end of the project. The SMC e-learning platform, offering open online customized courses, obviously plays a crucial role in this sense.

This project has received funding from the European Union's ENI CBC Med Programme under Grant Contract C_B.4.3_0063

The role of the two associated partners, UNEP/MAP and MedCities Network, in relation to this second aspect is decisive in order to make known and disseminate the innovative tools and the underlying training system.

More in general the SMC training system, through the improvement of technical skills and capacity to act of the target groups in the concerned regions, can also contribute to:

- supporting a holistic approach taking into consideration the physical, economic and social dimensions of urban development, from a sustainable perspective;
- analysing local challenges, seeking solutions and ultimately developing local urban plans to address these challenges;
- developing strong partnerships between public bodies, the private sector and civil society;
- analysing the challenges and barriers to improve the collaboration among the various stakeholders that are involved and have to work together during a sustainable urban planning process;
- improving communication and participative processes of all the involved stakeholders;
- contributing to the transnational exchange and learning process taking place at network level;
- communicating results at local level and in the Mediterranean area and disseminating lessons learned to the wider community.

3.2. Adaptation process of the CESBA MED training system

The SMC training system represents the evolution and adaptation of the training system tested in the CESBA MED project that was at the origin of the SMC capitalization project. The adaptation process of the CESBA MED training system led, first of all, to the updating of the training material on the basis of Sustainable MED Cities deliverables developed in WP3 and WP4 in order to include topics and issues relevant for cities located in the South

This project has received funding from the European Union's ENI CBC Med Programme under Grant Contract C_B.4.3_0063

and East side of the MED area. The training materials, produced by the two technical partners (PP1 and PP5) in English, have been translated into French and Arabic by the partner cities, in order to make them more easily usable by the public administrations of the concerned territories.

A second relevant aspect of the training system adaptation process is the update of the e-learning platform. Initially, the University of Malta, partner of the CESBA MED project, offered the possibility to host the SMC e-learning platform on its Moodle system which already hosted the CESBA MED e-learning courses. This opportunity would have been particularly significant for the SMC project because it would have strengthened its continuity with the CESBA MED project. However, due to technical and organizational constraints of the University of Malta, this solution was not feasible and therefore PP1 autonomously created a dedicated SMC e-learning platform. In the future, the SMC e-learning platform may be integrated into the Moodle system of the University of Malta as initially planned.

The last aspect of the training system adaptation process is perhaps the most significant. It concerns the methodological approach for the delivery of the courses: since the initial stages of the project, the partner cities have been actively involved in the process of defining the SMC training system in order to bring out their expectations and needs for implementing an effective training system. An entire session of the second project meeting, held online in March 2022, was dedicated to an internal consultation among PPs dedicated to discussing the characteristics that the SMC training system must present in order to better adapt to their needs and expectations.

One of the main needs, which had already emerged during the implementation of the pilot case studies of the CESBA MED project, concerns the support that the partner cities deem necessary, throughout the pilot testing phases, in order to effectively adopt the SMC decision-making methodology and the SMC tools. This means that a “preparatory” training only limited to the “preliminary phase” before starting the test is not considered sufficient. Continuous support provided to the partner cities testing teams, technicians

This project has received funding from the European Union’s ENI CBC Med Programme under Grant Contract C_B.4.3_0063

and decision-makers, during all the phases of test implementation is considered a crucial aspect for the achievement of the expected results.

Based on this assumption, the training course planned and implemented for each partner city took place as a sequence of online training sessions, diversified for each city, distributed over the entire test implementation period, during approximately 10 months.

A first preliminary training workshop, common to the three partner cities, took place onsite in Sousse on 17 October 2022, at the conclusion of the project interim meeting.

A sequence of 7 online training sessions, specifically devoted to each pilot city started in January 2023, at the beginning of the test implementation, and finished in October 2023.

A bottom-up approach was applied for implementing the adaptation process of the training system in order to reach out the final SMC training system framework definition. Such bottom-up approach, implemented through feedback, suggestions and recommendations collected during the internal consultations among PPs, has ensured a valid and consistent adaptation process to the needs and specificities of the South and East side of MED.

During the last project period, in August-September 2023, a specific session of the 3rd Local Project Committee meetings organized by each of the three partner cities was devoted to illustrate the SMC training system to the concerned stakeholders and to collect their feedback and recommendations in order to validate it.

The scheme below summarizes the main steps of the training system adaptation process.

This project has received funding from the European Union's ENI CBC Med Programme under Grant Contract C_B.4.3_0063

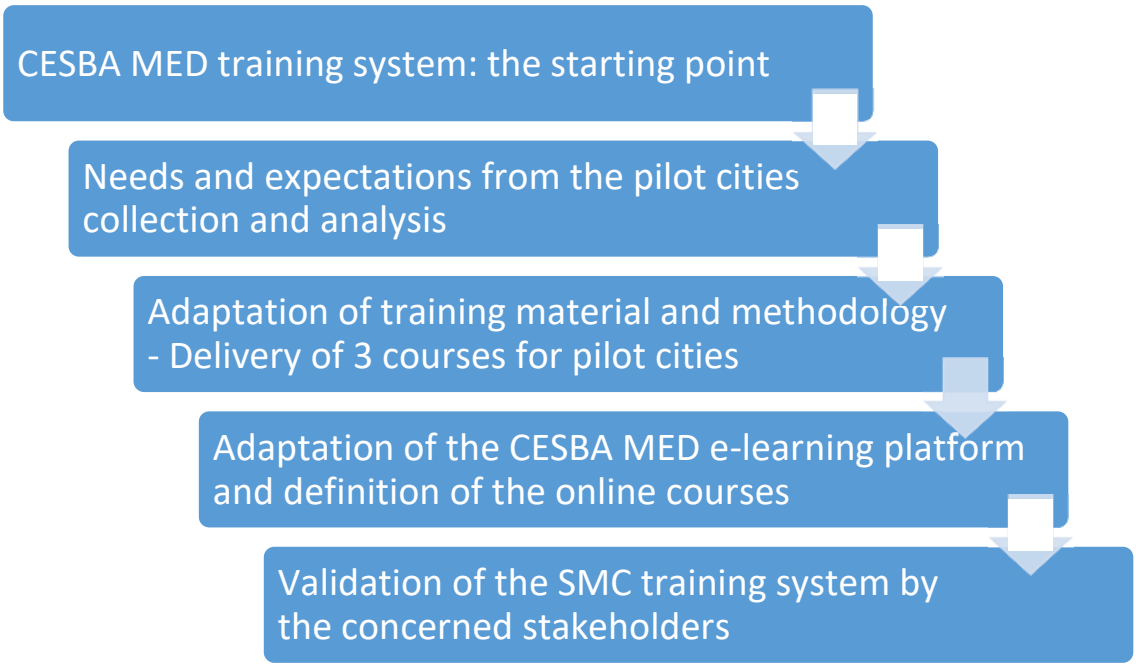


Figure 1: The key steps of the training system adaptation process

3.3. Target groups of the SMC training system

The end users of the SMC tools and methodology can be divided in two main groups and the SMC Training System is tailored to their characteristics and needs:

a. Technicians: this group includes public bodies' technical staff, professionals, building designers, SMEs technicians, urban planners. All of them have a technical profile and need to learn how to use SMC tools both in terms of technical and functional/operational aspects. However, to make training more suitable to the end user's features in relation to how the SMC tools and methodologies are used in the process of defining and implementing urban renovation plans, a further subdivision of this end-user group is necessary.
   The 2 sub-groups are the following:
   - Area/issue specialists: this group includes the experts in the different specific areas/issues operating on urban, neighborhood or building scale (i.e. Energy, Social aspects, Indoor Environmental Quality, etc.);
   - Assessment process coordinators: this group includes the technicians who play the role of "interface" between the decision-making level and the specialized experts. They have to coordinate assessment processes at urban or building level by integrating the different

This project has received funding from the European Union's ENI CBC Med Programme under Grant Contract C_B.4.3_0063

assessment results from the experts. They can be public bodies' technical staff or private professionals.

b. Decision makers: this group includes policy makers, public bodies managers, investors, developers. They need to reinforce their capability to set up high quality energy retrofitting actions on public buildings and effective urban development plans by using SMC tools and methodology.

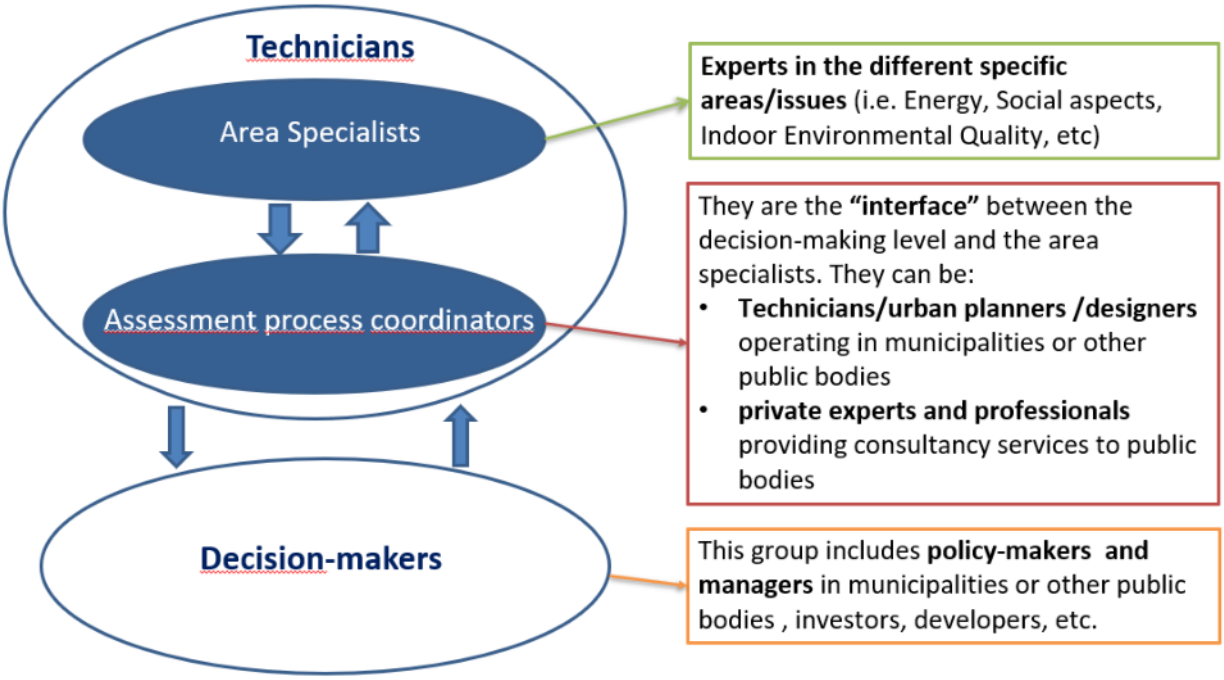


Figure 2: The target groups of the SMC training system

It is important to point out that the distinction between the two different technical sub-groups, "area specialists" and "assessment process coordinators", has the purpose of representing clearly the approach of the SMC decision-making methodology and the different roles of the target groups in using the SMC assessment tools. The training to be provided to the two technical sub-groups is quite in line with these different roles.

The methodological approach adopted in SMC decision-making is based on a continuous interaction between technicians and decision-makers: the former provide adequate and reliable technical information for the decision-making process and must therefore be

aware of the priorities and choices made by the decision-makers. The methodological approach of the SMC training system similarly provides for common training sessions combining the involvement of technicians and decision-makers to make them able to interact and exchange in using the SMC assessment tools and decision-making methodology.

3.4. The expected learning outcomes

Learning outcomes describe what an individual should know, understand and/or be able to do at the end of a learning process. They are focused on the learner's experience, rather than giving primacy to the content of the subjects that make up the training curriculum.

Learning outcomes are increasingly used in EU education and training context. They are used as a common language in the European Qualifications Framework (EQF), National Qualifications Frameworks (NQF) and European Credit system for Vocational Education and Training (ECVET).

In the publication "Education for Sustainable Development Goals – Learning Objectives" (2017) UNESCO settles knowledge, skills, values and attitudes, expressed as Learning Objectives, that the individuals must acquire to become sustainability change-makers. The UNESCO Learning Objectives are related to each of the 17 Sustainable Development Goals (SDGs) included in the 2030 Agenda for Sustainable Development that the UN General Assembly adopted on 25 September 2015,

The following table shows the Learning Objectives referring to goal n. 11 "Sustainable Cities and Communities – Make cities and human settlements inclusive, safe, resilient and sustainable" which is closer to the aims of the SMC project.

1.2.11. SDG 11 | Sustainable Cities and Communities | Make cities and human settlements inclusive, safe, resilient and sustainable

Table 1.2.11. Learning objectives for SDG 11 "Sustainable Cities and Communities"

Cognitive learning objectives	1. The learner understands basic physical, social and psychological human needs and is able to identify how these needs are currently addressed in their own physical urban, peri-urban and rural settlements. 2. The learner is able to evaluate and compare the sustainability of their and other settlements' systems in meeting their needs particularly in the areas of food, energy, transport, water, safety, waste treatment, inclusion and accessibility, education, integration of green spaces and disaster risk reduction. 3. The learner understands the historical reasons for settlement patterns and while respecting cultural heritage, understands the need to find compromises to develop improved sustainable systems. 4. The learner knows the basic principles of sustainable planning and building, and can identify opportunities for making their own area more sustainable and inclusive. 5. The learner understands the role of local decision-makers and participatory governance and the importance of representing a sustainable voice in planning and policy for their area.
Socio-emotional learning objectives	1. The learner is able to use their voice, to identify and use entry points for the public in the local planning systems, to call for the investment in sustainable infrastructure, buildings and parks in their area and to debate the merits of long-term planning. 2. The learner is able to connect with and help community groups locally and online in developing a sustainable future vision of their community. 3. The learner is able to reflect on their region in the development of their own identity, understanding the roles that the natural, social and technical environments have had in building their identity and culture. 4. The learner is able to contextualize their needs within the needs of the greater surrounding ecosystems, both locally and globally, for more sustainable human settlements. 5. The learner is able to feel responsible for the environmental and social impacts of their own individual lifestyle.
Behavioural learning objectives	1. The learner is able to plan, implement and evaluate community-based sustainability projects. 2. The learner is able to participate in and influence decision processes about their community. 3. The learner is able to speak against/for and to organize their voice against/for decisions made for their community. 4. The learner is able to co-create an inclusive, safe, resilient and sustainable community. 5. The learner is able to promote low carbon approaches at the local level.

Figure 3: The Learning Objectives referring to goal n. 11 "Sustainable Cities and Communities"

This project has received funding from the European Union's ENI CBC Med Programme under Grant Contract C_B.4.3_0063

In the SMC training system, the use of learning outcomes aims to make clear to the involved stakeholders the expectations they have to meet, allowing a mutual recognition of the roles and responsibilities in the urban planning processes.

In this way, the participants are encouraged to take initiative in learning and be pro-active in applying effectively SMC tools and methodology in urban planning processes.

The following tables describe the SMC learning outcomes expressed for each of the 3 learning dimensions:

- knowledge and understanding
- skills and competencies
- judgement and approach

For each dimension, the learning outcomes are related to the different training target groups.

KNOWLEDGE AND UNDERSTANDING

After the completion of the course participants will:	**AREA SPECIALIST**	**TECHNICAL COORDINATOR**	**DECISION - MAKER**
demonstrate a broad understanding of sustainable urban development and a deep knowledge of sustainability and urbanization processes	✓	✓	✓
demonstrate knowledge of the “Generic Framework” concept and the multicriteria assessment methodology used in the generic framework for rating the level of sustainability of buildings and urban areas;	✓	✓	✓
demonstrate the knowledge, ability and approach needed to independently use the SMC Tools and methodology;	✓	✓	

This project has received funding from the European Union’s ENI CBC Med Programme under Grant Contract C_B.4.3_0063

demonstrate knowledge of the decision-making methodology based on SMC sustainability assessment tools		✓	✓
demonstrate a deep knowledge of the principles and methods of calculation of the SMC indicators	✓		
understand the role of local decision-makers and the importance of representing a technical support in planning and implementing policy of urban development processes.	✓	✓	
understand the role of technicians to receive the necessary support in planning and implementing sustainable urban development policies and strategic plans			✓

SKILLS AND COMPETENCIES

After the completion of the course participants will be able to:	**AREA SPECIALIST**	**TECHNICAL COORDINATOR**	**DECISION - MAKER**
identify and collect data required for the application of the SMC Tools and methodology	✓	✓	
use SMC Tools and methodology to calculate and analyse the relevant indicators in order to support decision-making processes for sustainable urban plans development and monitoring;	✓	✓	
compare the effect of different indicators of sustainability in evaluations of urban development projects;	✓	✓	
calculate the indicators related to a specific area	✓		

This project has received funding from the European Union's ENI CBC Med Programme under Grant Contract C_B.4.3_0063

support decision-makers by providing consistent and comprehensible information and data necessary to implement the decision-making process		✓	
apply the SMC decision-making methodology in order to plan, develop and monitor the best sustainable urban renovation strategies that increase the quality of the built environment			✓

JUDGEMENT AND APPROACH

After the completion of the course participants will be able to:	**AREA SPECIALIST**	**TECHNICAL COORDINATOR**	**DECISION - MAKER**
relate her/his work to the different needs of stakeholders involved in sustainable urban plans processes implementation	✓	✓	✓
play a pro-active role to raise awareness about the need to design and implement sustainable urban plans	✓	✓	✓
apply a more holistic and integrated approach taking into consideration the physical, economic and social dimensions of urban development, from a sustainable perspective	✓	✓	✓

This project has received funding from the European Union's ENI CBC Med Programme under Grant Contract C_B.4.3_0063

4. The components of the SMC training system

4.1. The SMC methodological approach

The SMC courses are based on methodologies requiring active and participatory involvement of the participants in order to maximize the learning outcomes and speed up the application of SMC tools.

The learning activities of SMC courses may include lectures and seminars (or webinars) as well as practical exercises using SMC tools, on site study visits, case studies analysis and open discussion sessions.

The table below illustrates a recommended distribution of learning activities in relation to the three types of courses addressed respectively to area experts, technical coordinators, decision-makers.

Training activities	**Course for area experts**	**Course for technical coordinators**	**Course for decision-makers**
Lectures/seminars/webinars	30%	60%	60%
Practical exercises to calculate SMC indicators	60%	20%	-
Case studies analysis /On site study visits	10%	20%	40%
Total	**100 %**	**100 %**	**100%**

The SMC training courses are an opportunity to bring together all relevant local stakeholders related to development and implementation of high quality and sustainable urban development plans.

Although the different training courses for decision-makers and technicians are normally held separately and with different learning objectives, “common sessions" where technicians and decision-makers can share and discuss the criticalities of their role and find a common language to make communication and information exchange easier are advisable. For example, a common final course session devoted to the analysis of a case

study could be scheduled as well as a “role playing exercise” for the simulation of a decision-making process might be useful for strengthening the interaction among technicians and decision-makers.

4.2. The SMC training modules and their contents

The SMC training system focuses on making the learning activities as flexible as possible and customized according to the characteristics and needs of the target groups and the peculiarities of the local territories in which training actions take place.

SMC training material and courses have been developed using a modular approach to ensure maximum flexibility, usability and personalization of training. Each course can be composed by one or more training modules.

Six training modules form the basis of the SMC training system. Their contents are summarized below:

Module 1 - Generic Framework concept and the multicriteria assessment methodology

This module presents the basic concept of sustainability in urban areas and assessment systems for the built environment. The module focuses in particular on the Assessment Methodology of SBE Method and presents the Generic Framework concept. The 3 sets of indicators (at building, neighborhood and city scale) developed in the project, aimed specifically at the Mediterranean cities, are illustrated together with the contextualization process.

Content:

- Introduction to assessment systems for the built environment
- Overview of the assessment procedure of the SBEMethod
    - characterization step
    - normalization step

  - aggregation step
- General description of the criteria of the SBTool, SNTool and SCTool
- General presentation of the contextualization process
  - Selection of criteria
  - Benchmarking
  - Weighting

Module 2 – The SMC decision-making process

This module presents the implementation of the decision- making process based on Sustainable MED Cities Tools, in order to set up high quality energy retrofitting/new construction projects as part of sustainable urban development plans.

Content:

- Model of decision-making process for sustainable buildings, neighborhoods and cities
- The 7 steps for implementing the decision-making process:
  - Initiation
  - Preparation
  - Diagnosis
  - Strategic Definition
  - Retrofit Scenarios
  - Decision-Making
  - Retrofit concept
- The online platforms supporting the decision-making process: the SMC assessment platform and the SMC collaborative platform

This project has received funding from the European Union's ENI CBC Med Programme under Grant Contract C_B.4.3_0063

Module 3 – Calculating the assessment criteria of SBTool – Building Scale

This module presents in detail the Key Performance Indicators (KPIs) of the Sustainable MED Cities SBTool – Building Scale. The calculation method for each indicator is explained step by step and illustrated with an example. An exercise to be solved by the trainees is provided too.

Content:

For each indicator the main elements that characterize it are presented:

- Intent and description of the indicator
- Boundary and scope
- Unit of measure
- Assessment method (step by step)
- References and standards
- Example of calculation
- Exercise.

Module 4 – Calculating the assessment criteria of SNTool – Neighborhood Scale

This module presents in detail the Key Performance Indicators (KPIs) of the Sustainable MED Cities SNTool – Neighborhood Scale. The calculation method for each indicator is explained step by step and illustrated with an example. An exercise to be solved by the trainees is provided too.

Content:

For each indicator the main elements that characterize it are presented:

- Intent and description of the indicator
- Boundary and scope
- Unit of measure
- Assessment method (step by step)
- References and standards

This project has received funding from the European Union's ENI CBC Med Programme under Grant Contract C_B.4.3_0063

- Example of calculation
- Exercise.

Module 5 – Calculating the assessment criteria of SCTool – City Scale

This module presents in detail the Key Performance Indicators (KPIs) of the Sustainable MED Cities SCTool – City Scale. The calculation method for each indicator is explained step by step and illustrated with an example. An exercise to be solved by the trainees is provided too.

Content:

For each indicator the main elements that characterize it are presented:

- Intent and description of the indicator
- Boundary and scope
- Unit of measure
- Assessment method (step by step)
- References and standards
- Example of calculation
- Exercise.

Module 6 – Pilot Case Studies presentation

This module aims at presenting the pilot case studies developed by the three partner cities located in Jordan, Lebanon and Tunisia to test the SMC methodology and tools on local neighborhoods and buildings.

The module content focuses both decision-making process and use of SMC tools.

Content:

- Greater Irbid Municipality case study
- Moukhtara case study
- Sousse case study

This project has received funding from the European Union's ENI CBC Med Programme under Grant Contract C_B.4.3_0063

4.3. The SMC training material

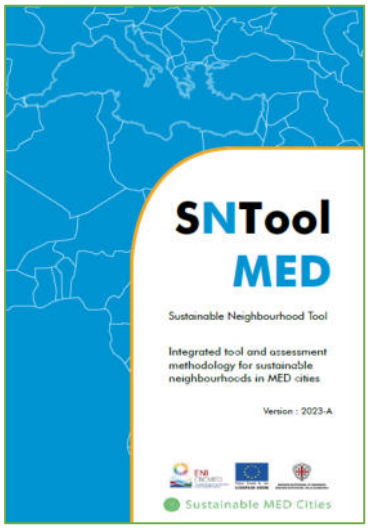
The SMC training material was developed in parallel with the development of the project. As detailed in the next chapter, starting from October 2022 an "internal" training aimed at the teams of the three partner cities to support them step by step in the pilot testing of WP3 and WP4 outcomes has been held. The training material was tested and continuously reviewed throughout this phase of "internal" training.

At the end of the pilot test activities, the training material was made available for "external" courses aimed at decision makers, technicians of municipalities and professionals to transfer the tools and methodologies developed in the project to other MED territories.

For each of the 6 training modules described in the previous section, different types of informative/training material have been developed in WP2 and in WP5. They include:

- ppt/pdf presentations
- practical exercises and examples
- user's manuals for the SMC online tools
- booklets
- handouts.

A large part of the SMC training material is provided in 3 languages (English, French, Arabic).



This project has received funding from the European Union's ENI CBC Med Programme under Grant Contract C_B.4.3_0063

Figure 4: Two examples of the SMC training material

The project deliverable D5.1.2 "SMC training material report" edited by PP5 is specifically dedicated to the presentation of the SMC training material.

The SMC training material can be consulted and downloaded from the shared folder SMC training material .

The training material available in relation to the different SMC training modules is as follow:

Module 1 - Generic Framework concept and the multicriteria assessment methodology

Module 1 training material includes:

- ppt/pdf presentation
- SBTool manual
- SNTool manual
- SCTool manual
- SBE Method manual

Module 2 – The SMC decision-making process

Module 2 training material includes:

- ppt/pdf presentation
- Decision-making process manual
- Online assessment platform manual
- Online collaborative platform moderator manual
- Online collaborative platform user manual
- Co-creation lab guidelines

Module 3 – Calculating the assessment criteria of SBTool – Building Scale

Module 3 training material includes:

- 17 ppt/pdf presentations, one for each KPI of SBTool - Building Scale
- 1 ppt/pdf presentation describing how to apply the SBE method

Module 4 – Calculating the assessment criteria of SNTool – Neighborhood Scale

Module 4 training material includes:

- 14 ppt/pdf presentations, one for each KPI of SNTool - Neighborhood Scale
- 1 ppt/pdf presentation describing how to apply the SBE method

Module 5 – Calculating the assessment criteria of SCTool – City Scale

Module 5 training material includes:

- 10 ppt/pdf presentations, one for each KPI of SCTool – City Scale
- 1 ppt/pdf presentation describing how to apply the SBE method

A complete example of the presentation for a KPI is shown in Appendix A.

Module 6 – Pilot Case Studies presentation

Module 6 training material includes:

- 3 ppt/pdf presentations, one for each pilot case study

This project has received funding from the European Union's ENI CBC Med Programme under Grant Contract C_B.4.3_0063

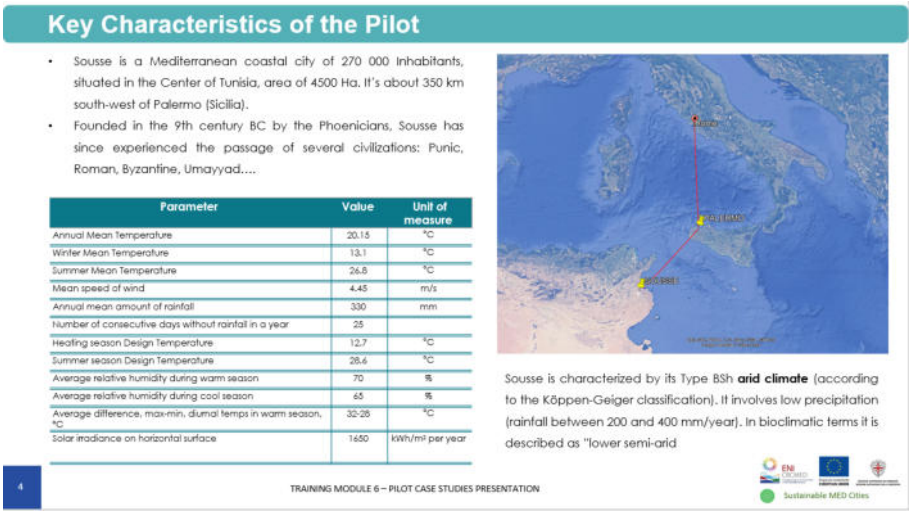


Figure 5: Extract from the Sousse case study presentation

All SMC training material has been developed to be "user friendly" and can be easily adopted both in online self-learning courses or in traditional "in person" courses.

The training material can be used in courses specifically devoted to the different target groups with different levels of detail and durations according to their specific needs.

For example, for the KPIs illustrated in Modules 3, 4 and 5, the specific focuses of the presentations for the two target groups are showed in the figure 6: "process coordinators/decision-makers" can limit the study of the KPIs to the general characteristics, the "area specialists" will deepen the study also focusing on the detail of the calculation method, using the examples and the exercises provided in the training material.

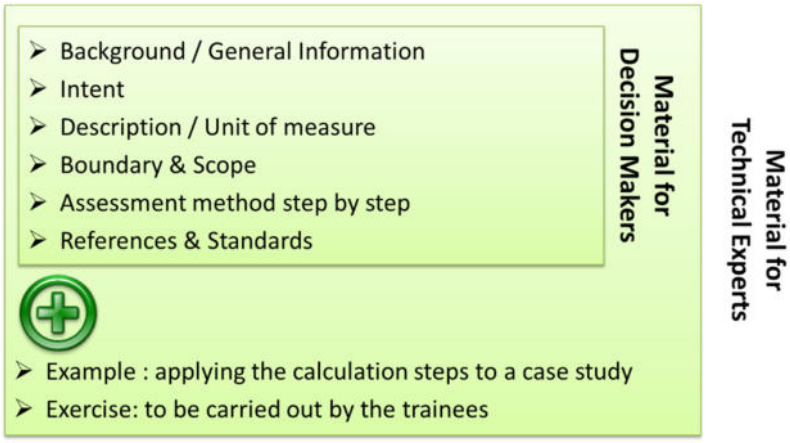


Figure 6: Presentation structure for each KPI

This project has received funding from the European Union's ENI CBC Med Programme under Grant Contract C_B.4.3_0063

4.4. The SMC e-learning platform

The SMC e-learning platform (https://www.smc-elearning.eu/) is an open-source website offering free access to online training courses and materials for the two concerned SMC target groups: technical users and decision makers.

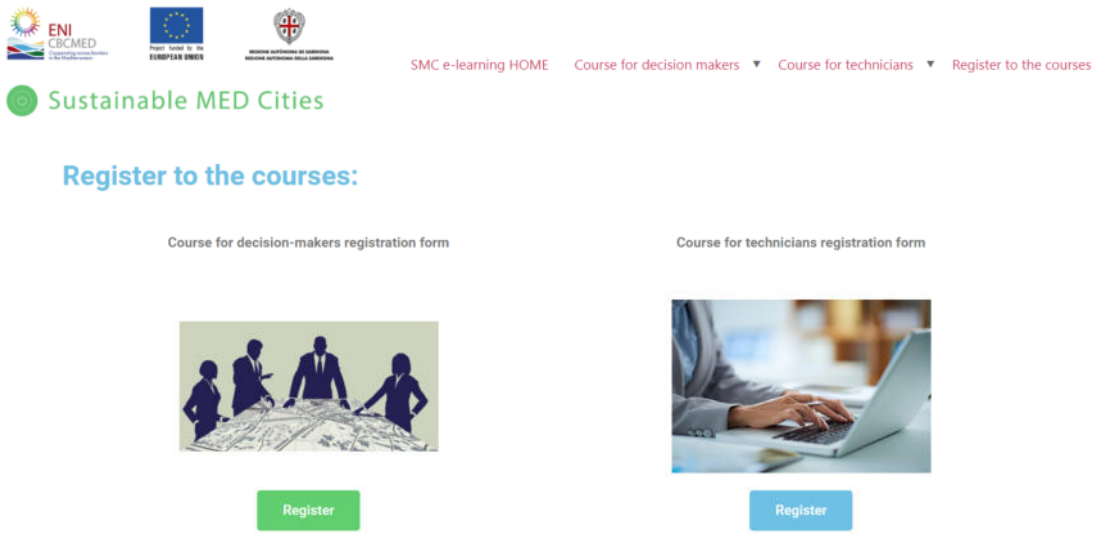


Figure 7: courses' registration page of SMC e-learning platform

The SMC e-learning platform offers an easy-to-use learning interface. SMC online courses can be attended in an "asynchronous" mode: no timetables and calendars are fixed. This feature provides users with maximum flexibility and customization in taking the course. Any user can learn at his/her own pace.

After the registration to the selected online course, the user can access the related "learning area" and go through the different training modules, selecting and downloading the available handouts, manuals and exercises.

This project has received funding from the European Union's ENI CBC Med Programme under Grant Contract C_B.4.3_0063

Figure 8: Example of training material downloadable in Module 4

Furthermore, the SMC e-learning platform provides an "online help desk" service. The users can get answers to questions or ask for further insights about the contents.

The SMC e-learning platform was tested by partners cities teams during the last period of project implementation, complementary to the synchronous online courses carried out to support the pilot teams engaged in the test on pilot case studies.

Finally, it should be underlined that the real added value of the SMC e-learning platform lies in the opportunities it offers in terms of continuous training even after the formal conclusion of the project to support a larger number of cities in the MED area in implementing innovative and sustainable urban renovation plans.

This project has received funding from the European Union's ENI CBC Med Programme under Grant Contract C_B.4.3_0063

5. The SMC training courses

This chapter focuses on the description of the training activities implemented during the project duration.

The implementation of these courses made it possible to achieve a twofold purpose: on the one hand, to test and tune up the SMC training system components, on the other hand, to provide the necessary knowledge and skills to the pilot cities involved in testing the SMC tools and methodologies.

Furthermore, specific training workshops was organized at different moments of the project with the aim of spreading knowledge of the SMC tools and methodology among a wider audience of stakeholders, in the southern and eastern shores of the MED area.

A specific project deliverable (D5.1.3 - SMC training courses report) is devoted to a more detailed presentation of the courses implemented.

The opportunity offered by the SMC training system to design and delivery further courses based on the use of the SMC training components is presented too in the last paragraph.

5.1. Training courses addressed to pilot cities

One of the main needs which was pointed out by the partner cities during the first phase of the SMC project, concerned the support that they deemed indispensable during the test on the case studies in order to apply appropriately in their local context the innovative SMC tools and methodologies made available by the project.

This support, based on partner cities requests, should not only be preliminary to the start of the test, but had to support the involved teams continuously during all implementation steps.

To address these needs, the SMC training courses organized for supporting the three pilot cities were structured as follow:

- a first introductory training workshop, common to the three partner cities, held onsite in Sousse and online on 17 October 2022, at the end of the 3rd interim project meeting. During this workshop, that had a duration of 4 hours, the complete SMC decision-making methodology, divided into 7 steps, was presented to all project partners and also to some external experts of the "pilot test teams" of the partner cities.

  A session of the workshop was dedicated to illustrate some examples of implementation of the CESBA MED project in urban areas on the northern shore of the Mediterranean developed in the period 2017-2019. A session dedicated to questions and discussion with the participants closed the afternoon dedicated to the training workshop.

- a sequence of 7 online lectures, each one devoted specifically to the team of a single city, held in parallel with the implementation of each of the 7 phases of the SMC decision-making methodology. In total 21 online training lectures were held in the period from January to October 2023. The training lectures were provided online by PP1 through the Zoom platform. The trainers were the technicians who have implemented the SMC Tools.

  Each training lecture was divided into a sequence of sessions in order to ensure the most complete interaction and exchange between trainers and pilot teams:

  - joint analysis of the results and problems encountered during the phase just concluded by the pilot city and connection with the next phase of the test implementation that is starting up;
  - presentation of the aims of the next phase and of the technical contents for each individual step that make it up;
  - presentation of the documentation to be produced as a result of the decision-making methodology phase;
  - analysis of the problems foreseen by each city in the implementation of the starting phase and discussion of the applicable solutions.

This project has received funding from the European Union's ENI CBC Med Programme under Grant Contract C_B.4.3_0063

All online lessons were recorded and made available to the pilot cities teams on the shared Teams platform.

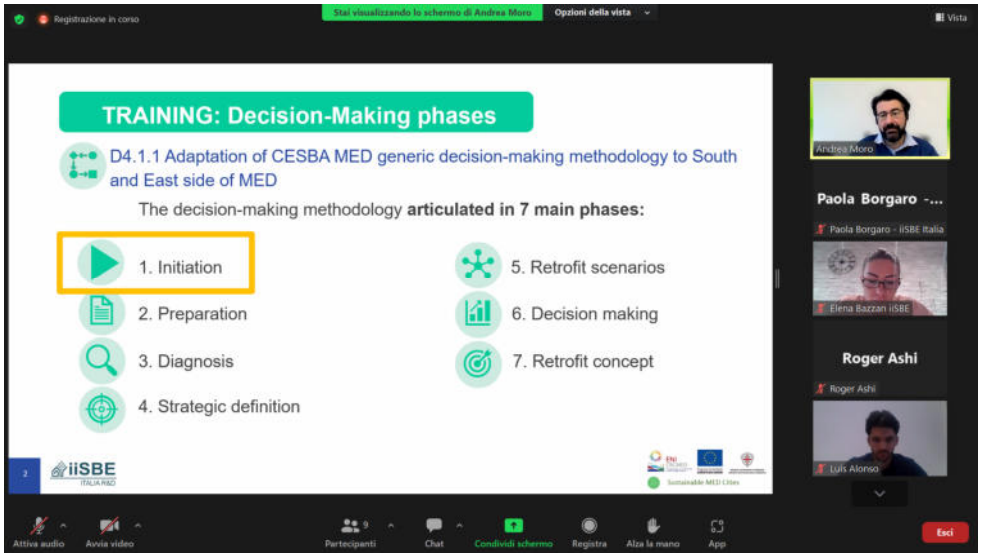


Figure 9: An online lecture

More detailed information about this training is included in deliverable D5.1.3 - Training courses report.

5.2. Training workshops addressed to a wider audience

Three training workshops aimed at facilitating the take-up of SMC methodology and tools by other municipalities in the MED area were organized in the last month of the project by the three pilot cities. Such workshops, organized in combination with the national final dissemination events of project results, should ideally start the process of acquisition of the necessary knowledge and skills by the interested stakeholders to be able to use the SMC methodology and tools appropriately in their local context. The knowledge and skills acquisition will have to be completed through attending the complete online courses offered on the SMC e-learning platform for technicians and decision-makers.

Local and national stakeholders were part of the training workshops audience including decision-makers and technicians from other municipalities, regional and national authorities, universities, training agencies, sectorial agencies, professionals (architects

and engineers, building designers, urban planners), students, citizens' representatives and associations.

The contents presented during the training workshop concerned:

- A general introduction to the SMC training system and an explanation about how to access the online courses on the SMC e-learning platform
- SBE Method
- The SMC assessment tools at building, neighborhood and city scales: SBTool, SNTool, SCTool
- The online assessment platform
- The participatory approach and the online collaborative platform
- The 7 phases of the decision-making methodology
- Description of “URBAN QUEST” serious game to learn about the SMC decision-making methodology

Figure 10: Final training workshop in Irbid

To complete the framework of the training activities aimed at wider audiences held in the SMC project, two further online workshops organized by PP1 have to be mentioned:

- in November 2022 an online workshop, aimed at professionals and technicians of the sister SEACAP4SDG project, lasting 4 hours, presented the SMC methodology and assessment tools;

- in May 2023 an online workshop specifically dedicated to experts from the German Jordan University, the external organization appointed by the city of Irbid for the implementation of the SMC test. The workshop provided the participants with a general presentation of the SBE method and related assessment tools.

More detailed information about the training workshops is included in deliverable D5.1.3 - Training courses report.

5.3. Training courses evaluation and validation

Considering the participatory process that accompanied the development of the SMC training system, the evaluation and validation by the stakeholders involved is considered crucial.
In this sense, two most significant moments in collecting feedback from the stakeholders involved, were organized:

- during the third Local Project Committee meetings conducted by the three pilot cities in August-September 2023, a specific session was dedicated to present and analyse the SMC training system and obtaining feedback and recommendations to ensure its compliance with expectations and needs of the territories concerned;

- at the end of the training courses held in the period January-October 2023 dedicated to supporting the implementation of the test in the three pilot cities, an online questionnaire was prepared and the participants in the courses, both the staff of the three partner cities and the external consultants, provided their assessments on several aspects:
    - compliance of expected course objectives with achieved learning outcomes
    - effectiveness of the training methodology applied to support the pilot teams
    - adequacy level of training material and didactical capacity of trainers

This project has received funding from the European Union's ENI CBC Med Programme under Grant Contract C_B.4.3_0063

- usefulness of the training for the implementation of the pilot case studies.

Deliverable D5.1.3 – SMC training courses report includes a presentation of the main results of the courses evaluation.

5.4. Designing further SMC training courses

To ensure greater diffusion of the tools developed in the project, the SMC training system is structured in such a way as to provide any interested training entity with a set of training components that allow the design and delivery of courses aimed at illustrating and making known the SMC methodological approach and tools.

The designing and delivering of further courses using the SMC training system components must obviously imply that the design of the course can be contextualized according to the specific needs of the territory and in relation to the learning outcomes to be reached by the users who will benefit from this training.

When a course programme devoted to a specific target group in a specific local context must be designed, the course designer has to consider specific needs and features of the target group and select the SMC training modules composing the course, together with the concerned training material, specifying:

- modules sequencing constraints;
- course duration;
- didactic methodologies to be applied.

The modular structure of the training materials developed in SMC project allows to define different training paths in relation to the different needs of the reference target groups. Here below three examples are showed:

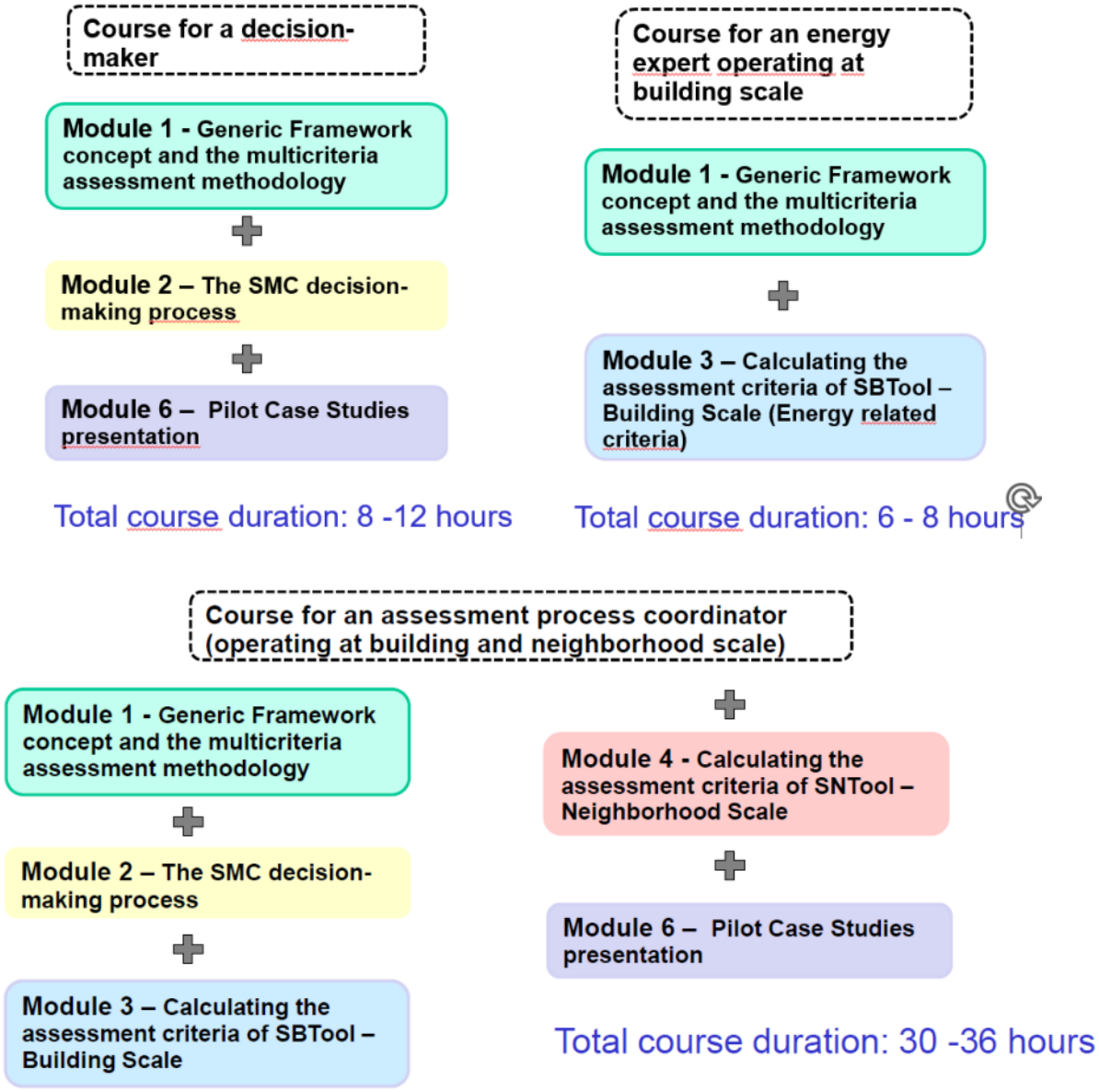


Figure 11: Three different examples of SMC training paths based on user features

The SMC training system provides training designers and trainers with a set of materials and tools which, appropriately combined and aggregated in a training course, can suit the characteristics of any local context and the needs of local users.

Finally, the training designer has to define the more suitable combination of learning methodologies: in addition to lectures, workshops and webinars, practical application exercises, case studies analysis and onsite study visits are recommended to achieve more effective learning outputs.

This project has received funding from the European Union's ENI CBC Med Programme under Grant Contract C_B.4.3_0063

6. Conclusions

It is undeniable that the SMC training system played a key role in supporting the project's capitalization activities. However, it's important to highlight that the SMC Training System is designed to be used even beyond the formal conclusion of the project in order to maximize the diffusion in the adoption of the SMC tools and methodology by the municipalities and public bodies of the Mediterranean area.

The opportunity offered to trainers and training institutions to design and delivery further courses based on the use of the SMC training system components, as well as the online courses accessible for free by any interested user on the SMC e-learning platform ensure continuity in the dissemination and capitalization of project results so acting as a leverage to spread and strengthen knowledge and skills needed for the adoption of the SMC tools and methodologies among the cities in the MED area.

Several opportunities for the future development and evolution of the SMC training system can be expected.

The SMC training online courses and materials will be included into the e-learning platform of the University of Malta to integrate and complement the CESBA MED online courses. In fact, the Interreg Euro-MED project named ReMED - Towards Climate Resilient Mediterranean Cities, is about to be launched in January 2024. This project, coordinated by the University of Malta and with PP1 and PP5 as technical partners, starting from the results and outcomes of the CESBA MED and SMC projects, will capitalize and integrate them developing and testing an innovative set of affordable tools, along with an overarching decision support framework, to help cities in:

- assessing and understanding the level of climate risk at urban and building scale
- designing optimal climate adaptation measures in relation to local conditions
- implementing climate adaptation measures through the most suitable policy instruments

This project has received funding from the European Union's ENI CBC Med Programme under Grant Contract C_B.4.3_0063

- monitoring and evaluating the results of adaptation measures over time.

Furthermore, the knowledge and skills that can be acquired through the SMC training courses will be integrated into the TRAIN4SUSTAIN CEN Workshop Agreement (CWA 17939/2022) published in October 2022 and developed within the homonymous H2020 project. The TRAIN4SUSTAIN CWA is a European pre-standard for measuring, comparing and declaring the level of competence of professionals in the field of sustainable construction useful for enhancing the skills of designers and craftsmen on the labour market and for integrating objective and verifiable skills requirements in tenders.

This project has received funding from the European Union's ENI CBC Med Programme under Grant Contract C_B.4.3_0063

Appendix A: example of the presentation for a KPI

Sustainable MED Cities

Training Module 5

Calculating the assessment criteria of SCTool – City Scale

WP5 - ACTIVITY 5.1: SUSTAINABLE MED CITIES TRAINING SYSTEM

SUSTAINABLE MED CITIES TRAINING SYSTEM

A.2.1 – AVAILABILITY OF GREEN URBAN AREAS

A.2.1 – AVAILABILITY OF GREEN URBAN AREAS	
ISSUE	CATEGORY
A. Use of land	A.2. Green urban areas

Sustainable MED Cities

TRAINING MODULE 5
THE ASSESSMENT CRITERIA OF SCTOOL – CITY SCALE

SUSTAINABLE MED CITIES TRAINING SYSTEM 2

This project has received funding from the European Union's ENI CBC Med Programme under Grant Contract C_B.4.3_0063

A.2.1 – AVAILABILITY OF GREEN URBAN AREAS

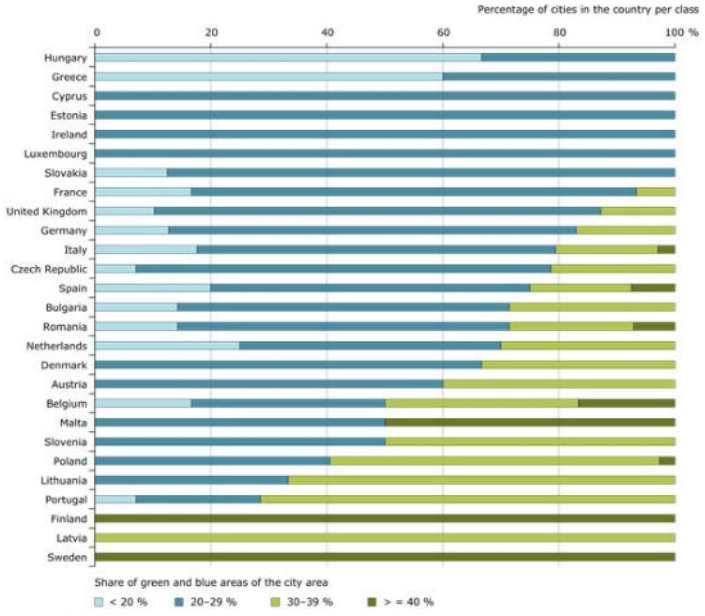
BACKGROUND

The amount of vegetated and/or natural surface cover is an indicator of how much "green" space a city has. Green or natural spaces are important to the sustainability of a city. They improve the urban climate, capture atmospheric pollutants, reduce storm runoff, reduce the "heat island" effect and improve quality of life by providing recreational spaces for urban inhabitants

A.2.1 – AVAILABILITY OF GREEN URBAN AREAS

BACKGROUND

Green areas include parks, groves and green urban spaces in general. Blue areas include rivers, lakes and large water areas in general.



Source: EEA, 2012).

This project has received funding from the European Union's ENI CBC Med Programme under Grant Contract C_B.4.3_0063

A.2.1 – AVAILABILITY OF GREEN URBAN AREAS

INDICATOR

Indicator	Unit	Data source
Ratio of all vegetated areas within the city boundaries in relation to the total city area	%	Urban area thematic map

Helpful Tips

Information on green areas should be obtained from municipal recreation and parks departments, planning departments, forestry departments and census. Green areas can be defined from land use/land cover maps.

A.2.1 – AVAILABILITY OF GREEN URBAN AREAS

INTENT

Facilitate climate change adaptation and mitigation, to improve health and quality of life, favouring biodiversity conservation.

This project has received funding from the European Union's ENI CBC Med Programme under Grant Contract C_B.4.3_0063

A.2.1 – AVAILABILITY OF GREEN URBAN AREAS

BOUNDARY & SCOPE

The assessment boundary includes the whole city.

Green area is broader than recreation space, and should include both public and private spaces. Green or natural spaces areas should also include green roofs.

Areas that are without green or natural surface cover are assumed to be sealed (i.e. paved or impervious).

A.2.1 – AVAILABILITY OF GREEN URBAN AREAS

ASSESSMENT METHOD

The calculation steps are the following:

1. Calculate the **total surface of the city**, [m^2]
2. Calculate **the total surface of green urban areas** in the city, [m^2]
3. Calculate the indicator's value as the **percentage ratio** of the **total surface of green urban areas** (step 2) to the **total surface of the city** (step 1), [%]

This project has received funding from the European Union's ENI CBC Med Programme under Grant Contract C_B.4.3_0063

A.2.1 – AVAILABILITY OF GREEN URBAN AREAS

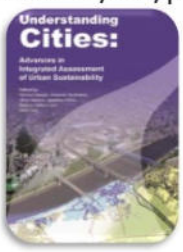
REFERENCES and STANDARDS

ISO 37120, Second edition 2018-07, "Sustainable cities and communities — Indicators for city services and quality of life"

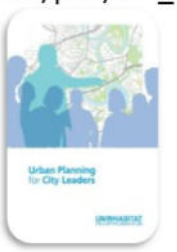
IEFCA 2019 edition – Calculation Guideline

United for Smart Sustainable Cities (U4SSC) - Collection Methodology for Key Performance Indicators for Smart Sustainable Cities

Guidelines on best practice to limit, mitigate or compensate soil sealing, Luxembourg: Publications Office of the European Union, 2012. https://ec.europa.eu/environment/soil/pdf/guidelines/pub/soil_en.pdf



https://www.ncl.ac.uk/media/wwwnclacuk/cser/files/Understanding%20Cities.pdf



https://unhabitat.org/books/urban-planning-for-city-leaders/

A.2.1 – AVAILABILITY OF GREEN URBAN AREAS

EXAMPLE

This project has received funding from the European Union's ENI CBC Med Programme under Grant Contract C_B.4.3_0063

A.2.1 – AVAILABILITY OF GREEN URBAN AREAS

In a small existing city, of total surface area of 13 square kilometers, 9.5 square kilometers are covered by public and private sealed areas (i.e. paved or impervious).

Calculate the percentage ratio of all vegetated areas within the city boundaries in relation to the total city area .

A.2.1 – AVAILABILITY OF GREEN URBAN AREAS

Step 1

Total surface: 13000000 m²

Step 2

Calculate the total area of green areas

(13000000 - 9500000) = **3500000 m²**

Step 3

Calculate the percentage ratio of the total surface of green urban areas to the **total surface area of the city**

3500000 m² ÷ **13000000 m²** × 100 = **27 %**

This project has received funding from the European Union's ENI CBC Med Programme under Grant Contract C_B.4.3_0063

A.2.1 – AVAILABILITY OF GREEN URBAN AREAS

EXERCISE

A.2.1 – AVAILABILITY OF GREEN URBAN AREAS

A small existing city has α total surface area of 608.5 square kilometers (km²). Public and private green and natural areas cover 202.1 km².

Calculate the percentage ratio of all vegetated areas within the city boundaries in relation to the total city area .

This project has received funding from the European Union's ENI CBC Med Programme under Grant Contract C_B.4.3_0063