

A Place-Based Approach for the SECAP of Potenza Municipality: The Case of Green Spaces System

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Abstract. Action Plans for Energy and Sustainable Climate (SECAP) represent an operational dimension of urban planning that organizes investments and urban transformation processes outside the traditional urban planning instruments. In this work, a methodological approach for SECAP development is discussed in order to reinforce the links between energy and climate objectives and actions of the SECAP with the territorial dimension assessed through systems and targets from the very beginning of the planning process. This methodology takes into account an analytical/cognitive approach of the application context based on energy-consumption data, morpho-climatic parameters, and environmental data generally available for all municipalities. It produces Systemic interpretation useful to support the decision-making process and the monitoring of SECAP implementation enhancement of a territorial approach in SECAP development leads to the clear identification of the intervention targets and the selection of site-specific actions accompanied by an adequate system of indicators. This represents an innovation proposal in the framework of the NewCOM approach. The application to case study of Potenza Municipality is a component of a wider process of developing the SECAP. It shows how methodological approach suggested, can be considered as a tool to support decisions making and monitoring of actions to be included in the plan.

Keywords: SEAP/SECAP · Local climate plans · Urban green spaces

1 Introduction

The Covenant of Mayors (COM) actually is the world's largest movement for local climate and energy actions [1]. Fully in line with the UN Sustainable Development Goals and climate justice principles [2], the Covenant of Mayors will tackle three key issues: climate change mitigation, adaptation to the adverse effects of climate change and universal access to secure, clean and affordable energy. Every signatory, who join COM, shares a common view in terms of the decarbonization of territories, strengthening capacity to adapt to unavoidable climate change impacts. In Italy at this moment, the most adopted strategic energy plan at Municipal level is SECAP. These plans, with

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a bottom-up process, are structured on a numbers of local scale actions, policies and transformations directed to improve the performance of the territorial systems addressing energy efficiency objectives and interested in climate change mitigation/adaptation processes.

The SECAP development process, is based on a very synthetic table of contents and, in the perspectives of the authors, could reveal several weaknesses in the comprehensive structure linking objectives to actions and indicators. The SECAP structure proposes holistic reasoning for the adaptation and mitigation of climate change. With respect to climate mitigation, local governments are guided to relate to all emission sources either direct or due to combustion of fuel within the territory, or indirect, related to the production of energy consumed in the territory and produced elsewhere. Key components for mitigation action are the "residential", "tertiary", "municipal/public" and "transport" sector. With regard to climate adaptation, the territorial components more vulnerable are: "buildings", "transportation", "energy", "water", "waste", "land management", "environment & biodiversity", "agriculture & forestry", "health", "civil protection & emergency", "tourism" and "other". The methodology proposed by the New Covenant of Mayors is based on planning to integrate climate and energy actions in which local stakeholders can play an active role. At the time of the drafting of SECAP, reducing the selection of actions to the mere verification of correspondence between the proposed sectors and the activities appears to be a weak process from a territorial point of view, as it does not highlight the relationship of actions with the context and therefore does not promote future monitoring actions and the assessment of the relationship between SECAP and urban planning instruments. Therefore, the methodological proposal developed in this work, after the analytical/cognitive insights on the individual territorial components related to the sectors proposed by SECAP, is oriented to develop a reasoning "by systems". In other words, the sectoral breakdown of SECAP is overcome by promoting an integrated reading of these components into 5 systems to which multiple sectors are identified according to a relational scheme (see Fig. 1).

Every system identified is related to a background map, that represents the minimal process of knowledge. Every map is a result of GIS processing. The resulting elaborations allow to fill out the SECAP worksheet, adding to what is already provided by the SECAP methodology, analytical/cognitive insights on the individual territorial components (see Fig. 2). In this approach, "territorial targets", i.e. real elements of the territory, are proposed to locate the interventions envisaged by SECAP. This is an innovative element since neither SEAP (Sustainable Energy and Action Plan), nor subsequently SECAP, in their proposals provided for a spatialization of interventions and therefore a direct correlation between what was envisaged by the intervention and the consequent territorial transformation.

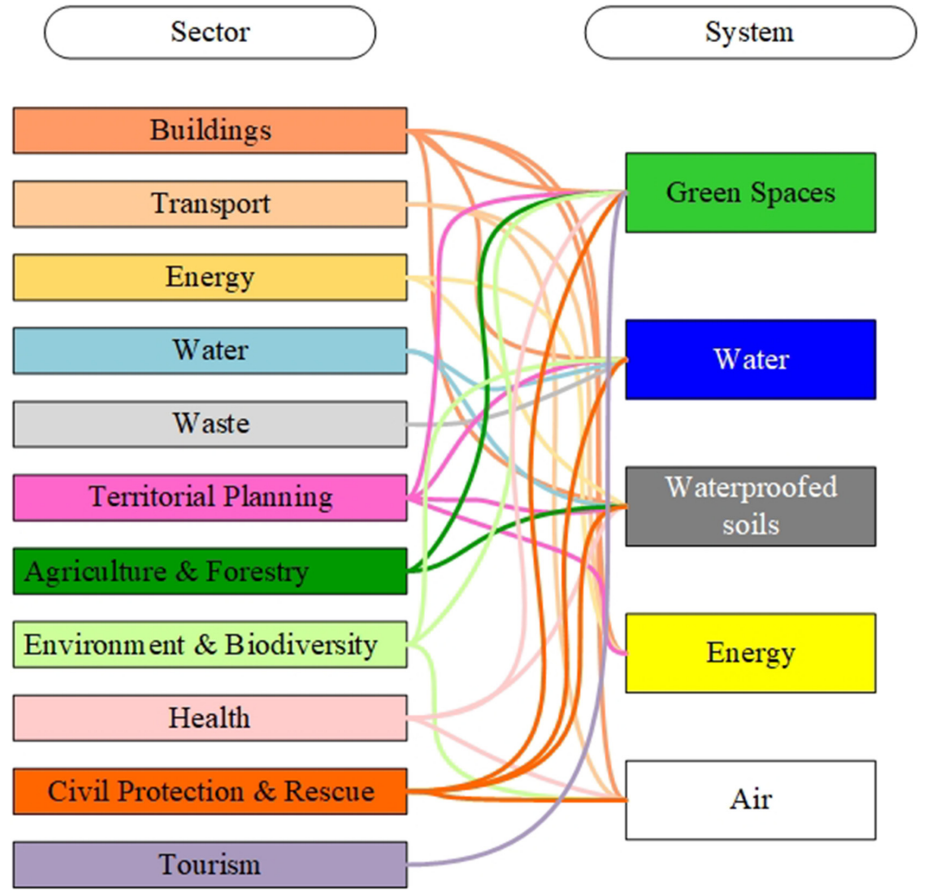

Fig. 1. Relationship between sectors and system identified

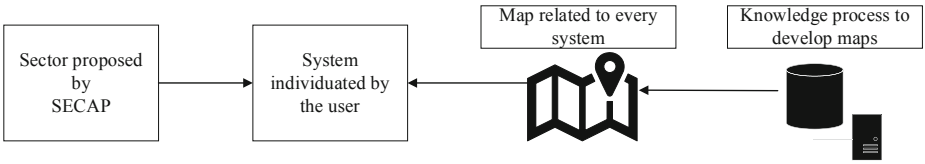

Fig. 2. Relationship between system individuated by the user and process to develop maps

2 A Placed Based Approach

In the last decades, European Programs gave a push to a sustainable urban planning and transition towards low-carbon economy. As remarked by Scorza et al. [3–7], the planning of the actions and the transformation provided need three fundamental features:

- A hierarchical and flexible system of objectives, achieved by the actions. The objectives are organized in overall objectives and several sub-objectives able to achieve the overall objective;
- A place-based approach, with definition of "territorial target" that are physical objects present on the territory where implement the actions provided by the objectives. These territorial targets are at same time targets and results of the developments of the provided actions.
- A research of specific indicators of the actions progress, with an assessment process based on the protection of the principles of equity, efficiency and irreproducible resource conservation;

At this moment, SECAP can be considered as urban planning tool at municipal or urban scale, able to develop sustainable transformation supported by a participative process [4, 5, 8]. An application of this methodological approach, is related to the SECAP of Potenza Municipality next to be realized. The authors suggest as example, the knowledge process and development of the actions for the green spaces system in Potenza Municipality.

3 The Case Study of Potenza Municipality SECAP: Green Spaces System

The National Plan to Climate Change (PNACC) [9] provides for increase of green infrastructure to reduce effects of heat islands, heavy rainfall and flood in urban settlements. The urban green is a theme that is part of the production structure of the ecosystem services that nature provides us (from the natural purification of the water we drink or the air we breathe, to the urban park or the landscape alpine for walking) through natural capital (understood as the entire stock of natural assets – living organisms, air, water, soil and geological resources – that help to provide valuable goods and services, direct or indirect, for man and which are necessary for the survival of the environment in which it lives) [10]. The specific note of green spaces (especially urban green spaces), in this context, is that it represents a natural capital – able to provide several essential ecosystem services of proximity. In this way, the first step is the knowledge of the green available to find the more critical areas where take action. The data are collected consulting the Regional Geoportal of Basilicata Region (RSDI) [11], Urban Planning Regulations of Potenza Municipality [12] and orthophotos. Identifying the green spaces, they are distinguished between the green spaces inside and outside of urban boundary. The green spaces are classified according to several usage class, as following:

- City parks;
- Green space (flower-bids or green spaces between buildings);
- City parks and sub-urban parks in planning;
- Urban garden
- Rural areas, i.e. green spaces outside the urban boundary classified as forest and shrub and/or herbaceous vegetation associations by CLC [13].

In Table 1 are shown the data collected, classified by typology and extension.

Table 1. Typology of green spaces and related area

Typology	Area [he]	% on the area of urban environment
City parks	57	1.96
Green space	9	0.03
City parks and sub-urban parks in planning	116	4.01
Urban garden	2	0.06
Rural areas	14681	5.09

A synthetic map collecting several typologies of green spaces is shown in Fig. 3.

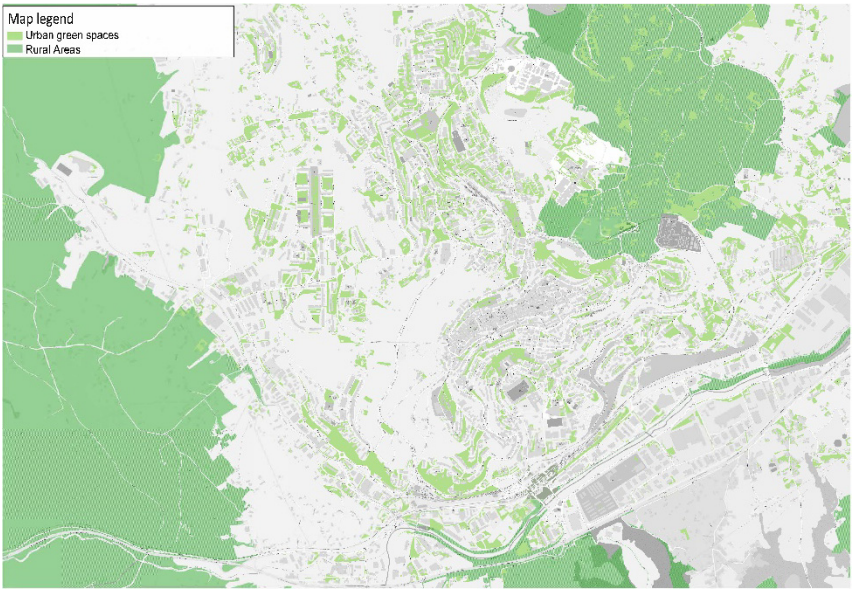

Fig. 3. Green spaces map

An overall scheme of possible actions for green system is shown in Fig. 4. Every action is related to several territorial targets to achieve the overall objective and it's overcome the connection one-by-one between territorial target and actions.

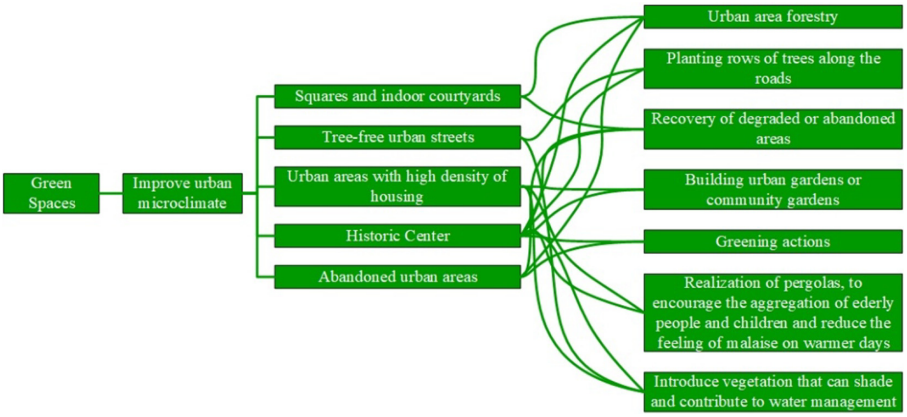

Fig. 4. Logical scheme for definition of actions

3.1 A Proposal of Actions for Green Spaces of "Risorgimento" District

Potenza Municipality, according to the annual leaderboard of Legambiente (an environmental organization [14]), for the year 2018 is the fourth of "greenest city" [15] in Italy for inhabitants per square meter. The green areas not always are accessible to the people for different reasons: areas with high slope, abandoned or degraded green areas, and green areas without a specific intended use so able to became green spaces to restore to citizen. An example in the city could be Risorgimento district.

Risorgimento is one of districts related to the expansion of Potenza Municipality between years 1946–1970. In this district, the green available over the years was left to itself and has lost its function as meeting place or improving the quality of urban life. Starting from the actions proposed for the green spaces system, has been chosen some of the actions to engage in the district as recovery of abandoned degraded areas or planting trees along the roads to improve urban microclimate (see Fig. 5).



Fig. 5. Some actions for Risorgimento district

4 Conclusion

The work highlighted two potential issues in relation to the use of SECAP as planning tools for the transition of cities to "low carbon" and "climate responsive" scenarios:

- A sector-by-sector "watertight" approach, which sees the definition of actions exclusively related to the sector, as it is convenient to identify systems on which to carry out analytical/cognitive insights on the individual territorial components related to the sectors proposed by the SECAP, and to arrive at intersystemic synthesis for the selection of actions,
- The definition of territorial targets, an innovative element proposed within the SECAP. Territorial targets represent real elements of the territory on which the planned actions are implemented. This approach allows a spatial definition of the planned interventions, which will allow administrators and stakeholders to be able to manage, plan and monitor interventions.

This innovative approach to SECAP can be strengthened through participatory planning, involving local citizen, stakeholders and decision makers to role an active part in the process. A key factor to achieve results in green structure planning is based on participation of citizen, local administrator and stakeholders, also to link urban and rural landscapes. In this way a best practice is Ronneby, southern Sweden [16], that show how 'connoisseurs' (local associations) across the Municipality can help green

structure planning for identifying the most important places, routes, and landmarks strengthening the relations between people and their everyday landscape at a municipal level.

In conclusion, the future developments that this work suggests are linked to the deepening of the techniques and methods proposed on further case studies, to the definition of flexible tools in the management of data and information necessary to build scenarios for climate adaptation to different scales, to effectively address the challenges that climate-change calls us to undertake. The objectives of this process are contained in the main address documents on sustainable urban development [17], which refers to a renewed urban planning oriented to the rationality of the government processes of the city and the territory [8, 18, 19].

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