Small Municipalities Engaged in Sustainable and Climate Responsive Planning: Evidences from UE-CoM

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Abstract. The Covenant of Mayors (CoM), a volunteer movement of local administrators established in 2008, has supported Municipalities to develop their Sustainable Energy and Climate Action Plans (SECAPs) and become energy and climate proof Municipalities. SECAP intended as an urban planning tool, allowed to EU Municipalities to develop adaptation/mitigation actions, facing the climate-change. Compared to this, the CoM started a new season of urban planning coupling the planning demand in terms of reduction of CO_2 emissions and the adaptation/mitigation to climate-change with the implementation of sustainable territorial development objectives. The European Signatories of CoM at May 2021 are 6789, and the 4312 of them (in percentage 63%) are small municipalities (i.e. under 10000 inhabitants). This high percentage of small Municipalities related to total has highlighted how SEAPs have been intended as instruments used to plan and provide funding for ordinary interventions in the urban areas instead of institutional instruments (i.e., urban planning regulations, operational plans and programs established by National policies). Therefore, the paper suggests an overview at European level to exploit the engagement of the small Municipalities, specifying the commitment and the SECAP's sectors chosen. It represents a useful framework interpreting the general results derived from the CoM official data and improving procedures related to the adaptation/mitigation climate-change in urban areas.

Keywords: SECAP · Covenant of mayors · Energy plans · Voluntary-based planning · European policies

1 Introduction

The Covenant of Mayors (CoM) since 2008 has supported the European Municipalities to become sustainable and climate responsive. In June 2016 the "Global Covenant of Mayors for Climate and Energy" (G-CoM) increased the targets in terms of greenhouse gases (GHG) reduction from 20% to 40% by 2030 and adopted an integrated approach:

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energy and climate change mitigation/adaptation. This initiative can be divided basically by two phases: the first (2008–2020) characterized by the Sustainable and Energy Action Plan (SEAP) and the second (2020 – ongoing) by the Sustainable Energy and Climate Action Plan (SECAP). The first phase focused on the energy efficiency, while the second on the coupling the energy efficiency with the mitigation/adaptation action facing climate-change. Fully in line with the UN Sustainable Development Goals [1], the G-CoM has started a new season of urban and territorial planning in Europe according to a volunteer approach in developing planning tools [2, 3] with the SEAPs and SECAPs. These planning tools are out of any normative obligation deriving from any planning law (national/regional) through effective practices such as useful technical contributions in selecting intervention priorities or design of feasible project frameworks for public and private investments. Recent works have analyzed the magnitude of the CoM experience in European and/or National contexts [4–8], highlighting a generalized success of the G-CoM policy both in terms of an effective contribution towards achieving the GHG reduction targets and in terms of commitment of local administrations and local communities towards EU policies objectives. An interesting feature of the CoM widespread is the high number of Municipalities signed up with resident population under 10000 inhabitants. In May 2021, these Municipalities are the 64% of the whole CoM Signatories, and it highlights that CoM is more supported by the "small" than the "big" Municipalities. We are focusing on inland areas [9, 10], where an insularity [11] effect can be a measure of spatial segregation [12]. The research aimed to explore better these "small" Municipalities in Sect. 2 presents some general statistics from the EU small Municipalities. Section 3 explores the SECAP sectors chosen by the CoM Signatories focusing on the most "favourite" sectors, while Sect. 4 is related to the main outcomes and the conclusions.

2 Statistics from Small CoM Municipalities

The CoM official website provides a database that supports advanced searches in terms of: region of origin, population, SECAP sectors, CO_2 emissions target reduction, target year set for the CO_2 reduction for every CoM Signatory. In May 2021, among 6792 CoM Municipalities, 4316 (corresponding to 63% of the whole Signatories) are small Municipalities. The small Municipalities (with resident population under 10000 inhabitants) have been classified by the CoM as XS Signatories. Thus, it has been counted the number of XS Signatories for each CoM country, and in Table 1 are proposed the top five countries with the highest number and percentage of XS Signatories.

It is interesting look at the number of the XS Signatories, only between Italy and Spain there are 3940 XS Municipalities, corresponding to the 91% of the whole XS Signatories. The remaining 376 XS Signatories have distributed 28 countries EU and not EU, with a mean percentage under the 1%.

Considering the CO_2 emissions target reduction set, (see Table 2) the 88% percent of XS Signatories have set a CO_2 target in the range 20–30%, close to the 20% 2020 target fix by the CoM. Only the 12% of the Signatories have set a more ambitious target over the 30% according to the G-CoM target (i.e. the reduction at least of 30% of CO_2 emissions).

Table 1. Top five countries with highest number of XS Signatories

Country	XS signatories	Percentage on the total XS CoM signatories
Italy	**2502**	**75%**
Spain	**1438**	**77%**
Belgium	**98**	**2,3%**
Portugal	**34**	**0,8%**
Malta	**23**	**0,5%**

Table 2. Number of XS signatories and percentage CO_2 emissions target reduction set

CO_2 emissions target reduction set	Number of XS signatories
20–30%	**3449**
30–40%	**749**
40–50%	**575**
>50%	**174**

3 XS Municipalities and SEAP/SECAP Sectors

The actions developed in the SEAPs and SECAPs are planned through a standard set of sectors concerning environmental, social and urban topics. The vision by sectors, has allowed to design actions with a detailed information concerning budget allocated, stakeholder involved or timeframe expected. A further distinctive aspect of this sectorial approach is the certainty of the action's timeframe for each Municipality, compared to the CoM procedures and self-defined actions. In Table 3 are proposed the occurrence of the SEAP/SECAP sectors of the XS Signatories and the percentage of the sector on the total XS Signatories.

Data from SEAP/SECAP sectors highlights that the XS Signatories have a preferential interest in developing actions related to sectors basically "public" like public lighting or municipal building equipment facilities. Considering the "private" sectors (involving not only public actors but also private company, stakeholders etc..), there is a widespread success of SEAP/SECAP policies of sectors related to the improvement of the energy production and the energy efficiency of the buildings. The remarkable number of SEAP/SECAP with transport sector that is considered as a main target in CO_2 emissions [13, 14], shows a changing of the idea of mobility oriented towards sustainable ways, fostering the emissions reduction.

Table 3. Count of occurrences of SEAP/SECAP sectors of XS CoM signatories

SEAP/SECAP sector	Occurrence of sector on total XS CoM signatories	Percentage of sector on total XS CoM signatories
Agriculture	**966**	**22**
Industry	**722**	**17**
Local electricity production	**3099**	**72**
Local heat cold production	**840**	**19**
Municipal buildings equipment facilities	**2940**	**68**
Others	**1389**	**32**
Public lighting	**3482**	**81**
Residential buildings	**3370**	**78**
Tertiary buildings equipment facilities	**2045**	**47**
Transport	**3260**	**76**

4 Discussions and Conclusions

Analyzing data coming from SEAP/SECAP occurrences among the XS Signatories, it highlights a widespread success of the CoM policies and SEAP/SECAP chosen by these small Municipalities as instruments used to plan and provide funding for ordinary interventions on the urban areas instead of institutional instruments (i.e. urban planning regulation, operational plans and programs established by National policies). A critical step for small Municipalities is represented by technical support that may affect the effectiveness of the entire process of CoM implementation at a local level. Thus, SEAPs first and SECAPs after, could be a boost for the small municipalities in the domain of the planning oriented towards result and performance in terms of energy/climate objectives. The sectorial approach seems to be (see also [15, 16]) the solution to the planning tools in urban areas where there are complex and fragmented planning laws. Furthermore, the considerable number of small Municipalities signed-up to CoM compared to whole number of signatories, highlights how these planning tools out of any normative law, are highly widespread in EU scenario. This new season of urban and territorial planning is representative of the high demand in implementation of sustainable territorial development objectives [17] and a generalized success of the current EU policies, achieving the EU 2020 emissions target. Previous researches [18–24] remark the fruitful aspect of the sectorial approach, facing the climate-change, however the cities should not be considered by sectors but by set of systems (such as green spaces, green infrastructures [25] waterproofed soils, energy system [26], active mobility [27–29] etc..). This represents the domain of further developments oriented toward an alternative approach for the foreword season of the SECAP: the cross-system assessment [30].

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