Stakeholder Mapping & Analysis for Climate Change Adaptation in Greece

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Abstract Stakeholder mapping and analysis is essential in Climate Change Adaptation (CCA) projects to assess and identify the needs of stakeholders (SHs). For the mapping of actors involved in adaptation planning and implementation in Greece, a multi-criteria analysis is followed.

The SHs involved in CCA in Greece were divided into national and regional level stakeholders. The stakeholder analysis was based on the mapping of SHs identified through the organizational charts of relevant institutions and by other projects with a direct or indirect link to CCA. The relative importance of each stakeholder for the purposes of this analysis was assessed by evaluating their Power, Proximity and Urgency with respect to CCA and assigning specific weighting factors for each criterion, to calculate a single Priority Index. Based on the Priority Index value, SHs were classified as low, medium and high priority for CCA both at the national and regional level.

At the national level, ministerial directorates are assessed as high priority, followed by academic and research centers as medium priority. At the regional level, high index values were calculated for the Special Directorate of Environment and Spatial Planning. The General Directorate of Civil Protection and Directorate of European Programs are assessed as medium and low priority respectively.

Keywords: Stakeholder mapping, Multi-criteria analysis, Climate change adaptation, Weighting factors, Priority Index

1. Introduction

Adaptation to climate change is defined as the adaptation of natural and anthropogenic systems to current or expected climate events or their effects, which mitigates damage or seizes opportunities (IPCC, 2014). Stakeholders (SHs) for adaptation include mainly bodies and organizations that play an important role in the design and implementation of actions and measures aimed at adapting to climate change in priority sectors and vulnerable areas.

SHs involved in Climate Change Adaptation (CCA) in Greece are divided into 2 main categories; SHs that are active at national level and play an important role in the implementation of the National Adaptation Strategy (NAS) and SHs that are active at regional level and play an important role in the implementation of the Regional Adaptation Action Plans (RAAPs). In each category, there are specific bodies that, based on their competence, participate in the design and implementation of policies and measures for CCA. National level bodies are categorized into Ministerial Directorates, Non-Governmental Organizations (NGOs), Academic and Research Centers, Protected Areas Management Bodies, Public Utilities and Associations - Chambers. The bodies at regional level are mainly the General Directorates and the Directorates of each Region as well as other entities.

2. Methods

2.1. Stakeholder Mapping

An extensive investigation of the organizational charts of the institutions was carried out for the identification of the SHs directly or indirectly linked with the implementation of the NAS and the RAAPs for CCA, in order to record the respective contact points in each institution.

At the national level, the identification of SHs focused on the Directorates of central administration services, whose responsibilities are directly related to CCA (e.g., Directorate of Environment, Spatial Planning and Climate Change of the Ministry of Rural Development and Food). Directorates whose responsibilities are indirectly linked to CCA were also identified, such as the Directorate of Public Health and Quality of Life of the Ministry of Health.

In addition, public utilities were identified as SHs, such as the Public Power Company (PPC) and the Water and Sewerage Company (EYDAP), but also Academic and Research centers that focus on research for adaptation and environmental management (e.g., Center for Renewable of Energy (CRES)). In addition, several Non-Governmental Organizations (NGOs) with environmental actions, such as the WWF, were recognized as SHs for CCA, as well as banks, mainly in terms of the economic dimensions of adaptation. The former Management Bodies of Protected Areas, recently integrated into the Natural Environment and Climate Change Agency - NECCA are also SHs, as

well as the associations and chambers directly or indirectly involved in the design and implementation of adaptation actions (e.g. Technical Chamber of Greece).

At the regional level, the identification of SHs focused on the General Directorates and the specific Directorates of each Region, whose responsibilities are related to CCA. The administrative structure of the 13 Greek Regions is similar, so the SHs were identified mainly in the General Directorates of Development and specifically in the Directorates of Environment and Spatial Planning and in the Directorates of Civil Protection.

2.1. Stakeholder Analysis

This study was divided into two stages, the mapping of SHs related to CCA and the stakeholder analysis. The analysis was necessary for determining the importance and role of each stakeholder in CCA and therefore developing an engagement strategy.

The stakeholder analysis was based on evaluation criteria and the assessment of their priority to CCA. (Stakeholder Management Pty, 2012). The selected evaluation criteria are Power, Proximity and Urgency.

Table 1. Evaluation Criteria

Evaluation Criterion	Definition
Power	SHs ability to influence or change adaptation process
Proximity	How close the SH is the adaptation process
Urgency	Level of importance the stakeholder attaches to adaptation process / how likely the SH is to take action

The relative influence of each stakeholder was evaluated by applying weighting factors for the 3 criteria in order to calculate a unique priority index. If a project has a high impact on the general public, a high weighting factor should be applied in the Urgency criterion. Projects that operate with collective decision-making and not with individual decisions should have a higher weighting factor in Urgency compared to Power.

The selected weighting factors are 4 for Power, 2 for Proximity and 5 for Urgency for the current study. Criteria and weighting factors were selected in line with the project characteristics (i.e., high impact on the general public, multi stakeholder decision-making process) as CCA results will have a great impact on the general public and key decisions are needed for its implementation, both at legislative and administrative level.

The priority index for each stakeholder is calculated by multiplying the scores set for each criterion (i.e., Power, Proximity and Urgency) by the corresponding weighting factors, and summing the final results. The higher the value of the index, the greater the influence of the stakeholder on CCA.

$$Priority\ Index = \sum_i Weighting\ factor\ i \times Evaluation\ Criterion\ Score\ i$$

Each stakeholder is rated from 1-4 for Power and Proximity and from 1-5 for Urgency, as defined in Tables 2, 3, 4.

Table 2. Scores for Power Criterion

Power Score	Definition
4	High capacity to formally instruct change
3	Some capacity to formally instruct change
2	Significant informal capacity to cause change
1	Relatively low levels of power

Table 3. Scores for Proximity Criterion

Proximity Score	Definition
4	Directly involved in the work
3	Routinely involved in the work
2	Detached from the work but has regular contact with various processes
1	Relatively remote from the work

Table 4. Scores for Urgency Criterion

Urgency Score	Definition
5	Immediate action is warranted, irrespective of other work commitments
4	Urgent action is warranted provided it can be accommodated within current commitments
3	Planned action is warranted within a relatively short timeframe
2	Planned action is warranted within the medium term
1	There is little need for action outside of routine communications

Following the proposed methodology, a Priority Index is calculated for each stakeholder and, based on the value of the Index, SHs are classified to High, Medium and Low priority.

3. Results

The results of the assessment are classified in 2 main categories concerning national level SHs and regional level SHs.

3.1. National level SHs

To facilitate the classification of the SHs in High, Medium and Low priority, they are organized into the following categories:

- **Directorates of Ministries (High Priority):** Directorates of the Ministries, whose responsibilities are directly related to the response to extreme weather events and CCA (e.g., General Directorate of Rehabilitation of Natural Disasters – Ministry of Infrastructure and Transport, Directorate of Climate Change & Atmospheric Quality - Ministry of Environment & Energy).

- **Directorates of Ministries (Medium Priority):** Directorates and Ministries whose responsibilities are indirectly related to CCA (e.g., Directorate for Protection and Management of Aquatic Environment - Ministry of Environment & Energy).

- **Other Public Bodies**: Their work is directly related to CCA (e.g., Green Fund) or plays an important role in it.

- **Academic / Research Centers**: Their research concerns aspects of CCA (e.g., Academy of Athens, National Observatory, University Schools and Departments).

- **NGOs**: Non-Governmental Organizations with voluntary action related to CCA.

- **Management Body of Protected areas/NECCA**: Responsible for the management of areas that have been defined as protected by Greek Legislation (e.g., National Parks, Natura 2000 Areas, Wetlands).

- **Banks**: e.g., the Environment Team of Piraeus Bank.

- **Public Utilities**: e.g., PPC and EYDAP.

- **Professional Associations / Chambers**: e.g., Technical Chamber of Greece, Association of Greek Tourism Enterprises.

These categories are classified based on the calculated index into High, Medium and Low priority as presented in Figure 1. Those with index values from 11 to 18 are considered Low priority SHs, those from 18 to 28 Medium priority SHs, and those from 28 to 40 High priority SHs.

3.2. Regional level SHs

The analysis was performed for all 13 Regions of Greece. The organizational structure of the Regions is similar, therefore in stakeholder classification only the General Directorates and Directorates representative of all the Regions are presented, as well as other bodies active in the Regions (e.g., Regional chambers). The bodies identified as SHs for CCA at the regional level are:

- **Environment & Spatial Planning**: Directorate of the Regions (usually under the General Directorate of Development Planning, Environment & Infrastructure of the Region).

- **Industrial Energy & Natural Resources**: Directorate of the Regions, under the General Directorate of Development.

- **Civil Protection**: General Directorate of all Regions.

- **Technical Works**: General Directorate of all Regions.

- **European Programs Management**: Special Department of the Regions, such as the European Information Center, under the Independent Directorate of Development Planning.

- **Tourism & Culture**: Directorate of the Regions, under the General Directorate of Tourism, Production and Development.

- **Development Planning**: General Directorate of all Regions.

- **Cooperatives**: e.g., Agricultural, Wine Cooperatives.

These categories are classified based on the calculated index into High, Medium and Low priority as presented in Figure 2. Those with index values from 11 to 13 are considered Low priority SHs, those from 13 to 22 Medium priority SHs, and those from 22 to 33 High priority SHs.

4. Future Research

SHs could play a crucial role in the implementation and ongoing development of a project. Over the last 4 to 5 years, an effort has been underway in Greece to establish an Adaptation Strategy at the National and Regional level, and enhance CCA. To that end, National and Regional SHs need to be identified and analyzed based on their influence on CCA in Greece, enabling the development of a customized engagement strategy and increasing the impact of CCA actions.

Following the mapping and analysis of SHs, it is necessary to define the challenges they face or are expected to face during the planning and implementation of CCA actions. The identification of stakeholder needs in terms of knowledge, funding and training on CCA is a key first step in order to develop suitable training actions. These needs could be identified through questionnaires and semi-structured interviews.

Questionnaires and semi-structured interviews could be used to:

- Map the way in which each organization integrates or addresses the risks of climate change.
- Assess the readiness and administrative capacity of the body to implement policies and measures for CCA.

- Identify needs for training and development of new skills, in order for the organization to be in line with CCA needs
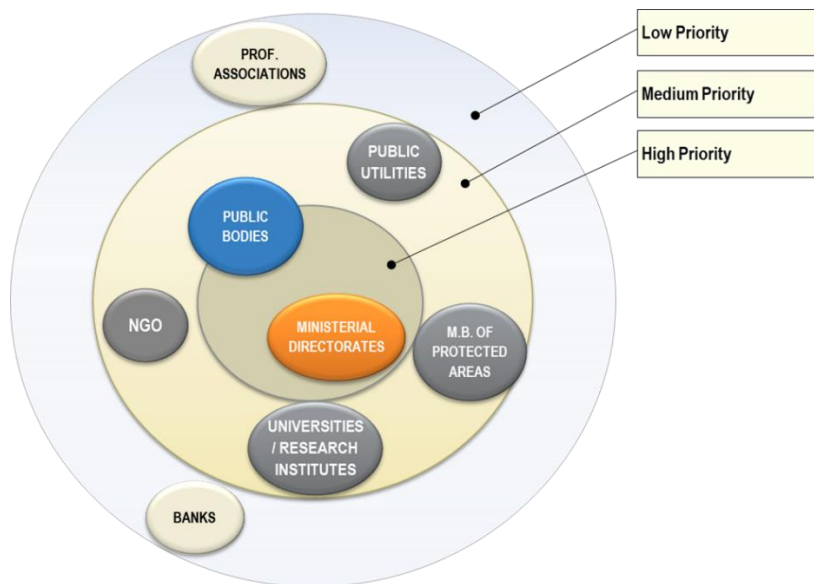

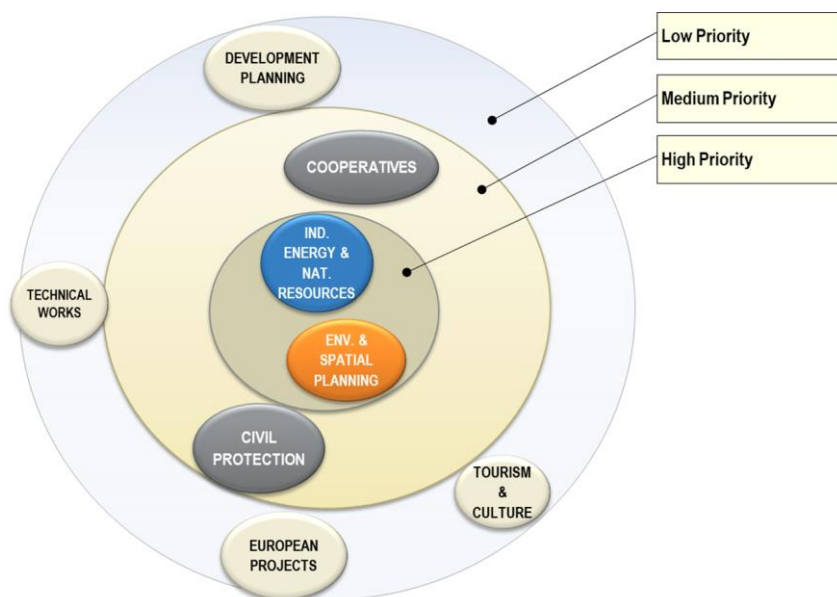**Figure 1.** Classification of National level SHs into Low, Medium and High Priority

Figure 2. Classification of Regional level SHs into Low, Medium and High Priority

Acknowledgements

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