Perspectives on Contentions about Climate Change Adaptation in the Canary Islands: A case study for Tenerife
Abstract:
This case study is aimed at exploring climate change adaptation scenarios as well as concrete actions to increase climatic resilience in a small European island: Tenerife, Canary Islands (Spain), the largest and most populated of the seven islands of the Canaries. The effects of climatic and non-climatic hazards on local population health and ecosystems are reviewed, such as heatwaves, air pollution and the atmospheric dust which comes from the Saharan dessert. The potential combination or overlapping effects of these hazards are also explored. According to the literature reviewed,
heatwaves, air pollution, and Saharan dust events have been producing negative effects on the population, in terms of both morbidity and mortality, as well as the environment, such as forest fires related impacts. In terms of health impacts, elderly and local people with chronic diseases are those more vulnerable to the previous hazards. As a consequence of both population ageing and the expected increasing extreme weather events, vulnerability is believed to worsen. There are currently a certain number of policies at both the Canary Islands scale and at Tenerife scale that, either directly or indirectly, might deal with the multiple hazards analysed here. However, most of these policies have neither been specifically developed to increase the resilience against heatwaves, Saharan dust events, and climate change, nor to deal with their potential interactions. Therefore, their possible capability need to be explored along with other potential adaptation options. In order to do so, a participatory integrated assessment is proposed based on three steps: (1) a first one intended to define the issue under analysis and frame the problematique of adaptation to climate change in Tenerife; (2) a second step envisioned to explore scenarios to increase the island resilience as well as concrete actions to reduce the vulnerability to heatwaves, Saharan dust intrusion, and air pollution, and (3) a last step projected to assess the proposed scenarios and run a multi-criteria analysis so as to rank adaptation actions (this third phase will be carried out in a later stage). Local key stakeholders as well as citizens and lay people have been engaged from the beginning of the process for this purpose. Different participatory techniques have been applied, such as questionnaires, in-depth interviews and focus group sessions. One of the findings of the analysis is that there is a lack of institutions in the Islands in charge of climate change issues. According to most of the participants in the participatory techniques applied, the islands need an institutional structure in charge of mainstreaming climate change policy into private and public institutions. A second finding indicates that an integrated climate change risk management plan is also needed as well as the investment in high-resolution climatic models. Part II of this research project will be devoted to build scenarios for Tenerife. As will be presented, local citizens are not only concerned about adaptation to climate change, but how to be more resilient against external shocks, including extreme weather events as a consequence of climate change. Thus, those scenarios, still to be built, will propose paths that Tenerife may walk through from current times to 2040 in order to increase its resilience. These scenarios would concentrate on energy, agriculture, and food dependency, as well as other elements that might affect Tenerife’s resilience. Multi-criteria evaluation of adaptation actions will also be carried out in Part II, so as to compare concrete adaptation policy actions that could be implemented in certain periods of time. Thus, any alternative option could be associated to certain scenarios, such that the implementation of one alternative may put Tenerife on a concrete path to increase its resilience.

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