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A systematic analysis of enabling conditions for synergy between climate change mitigation and adaptation measures in developing countries

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ARTICLE INFO

Keywords:

Synergy
Adaptation
Mitigation
Enabling conditions

ABSTRACT

There is a growing quest for synergy between mitigation and adaptation due to concerns of inefficiency and ineffectiveness of the compartmentalized approaches to climate change. However, little has been done to explore the necessary enabling conditions for synergistic design and implementation. This paper proposes an analytical framework to assess enabling conditions for synergies at the national level and applies it to developing countries to explore the potential move toward synergy. Four enabling conditions for integrating adaptation and mitigation, i.e. policies and strategies, programs and projects, institutional arrangements and financial mechanisms, were used to score developing countries relative to each other. We hypothesized that low income and vulnerable countries might more likely pursue synergy given the urgency for both adaptation and mitigation. Despite the relative infancy of the synergy concept, about half of countries studied exhibited good synergy potential, 80% of which were middle-income developing countries. The assumption of vulnerability as a precursor for pursuing synergy was supported by the fact that small island states possessed relatively high synergy potential. Income was weakly associated with the synergy potential with least developed countries having low synergy scores. Emerging economies possessed strong synergy potential which might be associated with better capacity available and/or potential for shaping their global images due to their growing emissions. In sum, the proposed analytical framework could be useful to identify areas of emphasis to promote holistic and efficient climate policies. As this study largely focused on the enabling conditions, further studies are needed to scrutinize and manage the mitigation-adaptation balances in countries possessing good synergy potentials.

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<http://dx.doi.org/10.1016/j.envsci.2014.06.003>

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1. Introduction

Climate change is a risk for people and the planet, and two lines of defense have been defined: mitigation (reducing emissions of greenhouse gas (GHG) and enhancing sequestration) and adaptation (reducing vulnerability and enhancing resilience). Though both are now necessary to address climate change issues, they remain separate priorities in the way they are addressed. Mitigation so far dominated global climate change policy discourse with adaptation largely considered a responsibility for individual countries (Ayers and Huq, 2009). Despite increasing adaptation challenges, developed countries continue to focus on mitigation while adaptation is a key priority for more vulnerable developing countries. This pattern may have resulted from the past belief that mitigation as a first line of defense could be sufficient to address climate change (van Noordwijk et al., 2011). International climate policy has also focused on mitigation options such as the Kyoto Protocol, LULUCF (Land Use, Land-Use Change and Forestry), NAMA (Nationally Appropriate Mitigation Actions) and REDD+ (Reducing Emissions from Deforestation and forest Degradation) with adaptation policies, such as NAPAs (National Adaptation Programs of Actions) limited to the least developing countries. Even in countries where both policies exist, they remain nested in separate sectors (Huq and Grubb, 2007; Ayers and Huq, 2009). Financing mechanisms for adaptation and mitigation are also segregated with a dominant role for mitigation. For example, 96% of global climate finance (350 billion USD) in 2010/11 was allocated to mitigation activities alone (Buchner et al., 2012). This dichotomy is inefficient and ineffective in the land-use sector due to several overlapping potentials of mitigation and adaptation measures (Dang et al., 2003; Verchot et al., 2007), especially in the developing world.

Many authors have suggested that a more integrated approach to mitigation and adaptation (hereafter referred to as M + A) would be desirable, as it can be more effective and efficient (Dang et al., 2003; Klein et al., 2007) and reduce tradeoffs between the two (Kane and Shogren, 2000). Moser (2012) advocated for such a holistic approach stating that the overlap of M + A “demands a long-term, life-cycle, and systems perspective”. This has potentials for promoting sustainable development more effectively especially in developing countries (Dang et al., 2003; Swart and Raes, 2007). There are emerging thoughts that the synergy approach may form the basis of future climate policy (Tubiello et al., 2008). Klein et al. (2005), representing the small, but growing literature on synergy, expressed “synergies in climate policy are created when measures that control atmospheric GHG concentrations also reduce adverse effects of climate change, or vice versa. Such measures have ancillary benefits, which produce win-win situations”. Emphasis is therefore placed on the system as a whole rather than on climate change measures as isolated interventions (Kane and Shogren, 2000; Warren, 2011). Synergy between M + A is therefore an approach in which both measures are addressed without prioritization, mainly undertaken within a systems-thinking context to address climate change issues.

This paper focuses on the national level where international mitigation discourse and policy meets the national adaptation realities of many developing countries. The national level allows for the integration of strategies given that both measures rely on a similar set of parameters. This allows governments to consider the entire system and act to enhance synergy (Klein et al., 2007). Furthermore, the achievement of synergy is especially beneficial within specific sectors such as land-use and forestry (Swart and Raes, 2007). By examining climate policy at this scale, we could understand why countries pursue the climate strategies they do.

Despite the promising potential of the synergy concept and the salient need for synergistic approaches for addressing climate change issues, knowledge on how the approach is being implemented “on-the-ground” and the necessary enabling conditions to make it possible are generally lacking. An appropriate framework to analyze synergy and its enabling conditions at the national level is therefore required. In an effort to contribute to the identified knowledge gaps, this study aims to:

- (1) Develop a comparative framework for analyzing the state of enabling conditions for synergy at national level;
- (2) Identify and describe the institutional, policy and strategic options for enabling synergy and;
- (3) Explore factors associated with possible explanations for the relative performance of countries and country-groups with respect to synergy.

2. Methods

2.1. Data

This study relied on a combination of qualitative and quantitative research methods using a review of National Communications (NCs) submitted to the UNFCCC (United Nations Framework Convention on Climate Change) and an online survey questionnaire carried out to address its objectives. The NCs were analyzed in the following two areas: (1) how M + A were addressed; (2) indications of a move toward synergy as captured in existing policies, instruments, and mechanisms. The NCs were obtained from the UNFCCC website (www.unfccc.int) and were considered appropriate for review because they were: (1) the most comprehensive national-level documents addressing climate change issues that are globally comparative; (2) official documents prepared by the highest responsible bodies for addressing climate change in the countries; and (3) standardized documents relied on by the UNFCCC to assess climate change actions across countries. Fifty-three NCs mostly from non-Annex I countries and available in the English language were selected for review (See Supplementary materials for details). The extracted data was analyzed using basic descriptive statistics with Microsoft[®] Excel 2010.

The online survey, conducted using the SurveyMonkey[®] online survey tool, focused on similar issues as the review of the NCs though here individual views of the respondents toward the synergy approach to M + A was given emphasis

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