



Review

The science and politics of co-benefits in climate policy



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ABSTRACT

The co-benefits concept implies a 'win-win' strategy to address two or more goals with a single policy measure. There is much scholarly and policy attention paid to this concept as a way to avoid making trade-offs between developmental and environmental issues. However, there is no review paper that reviews the nature, evolution, strengths and limits of the co-benefits concept in relation to climate change. Hence, this review article addresses the question: What does the literature tell us about the definition, application and use of the co-benefits concept? Using a literature review approach, this article explains the evolution of the co-benefits concept and its strengths and weaknesses. We conclude that while the concept has tremendous advocacy potential in dealing with the problem that the costs and benefits of climate policy are temporally and spatially not aligned, its de facto potential is limited as mostly economists have engaged with this concept, and there is little trans-disciplinary work undertaken that also looks at the politics and institutional aspects of co-benefits. The article thus provides an impetus to rethink current approaches to studying co-benefits and points to the need for inter- and trans-disciplinary research drawing on economic, political and social sciences.

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1. Introduction

Since the 1990s, the term 'co-benefits' has been used in both academia and official policy documents. The use of the term has exploded in the last decade and 'co-benefits' has become a predominant concept in scientific writing that focuses on reconciling environmental and developmental goals. The influential Intergovernmental Panel on Climate Change reports now feature 'co-benefits' as a central concept (IPCC, 2007; IPCC, 2014a; IPCC, 2014b). Here, co-benefits refer to 'the positive effects that a policy or measure aimed at one objective might have on other objectives, irrespective of the net effect on overall social welfare' (IPCC, 2014b, p. 14). The concept appears to be very promising for developed economies and emerging economies, as it offers them a way of not compromising on economic growth while still allowing them to take environmental aspects into account. For example, countries like India have adopted the co-benefits approach as a dominant strategy to deal with the twin goals of climate change

mitigation and economic and social development. The National Action Plan on Climate Change released by the Indian government in 2008 identifies 'measures that promote [India's] development objectives while also yielding co-benefits for addressing climate change effectively' (PMCCC, 2008, p. 2). In both its scientific and political usage, 'co-benefits' has outpaced related concepts such as 'no-regrets' and 'double dividends' and is seen as significantly easier than concepts such as coherence, integration and mainstreaming.

Despite its prevalence in the scientific literature, there is no common definition of what 'co-benefits' means or what counts as a co-benefit. While a review of co-benefits studies can be found in, for instance, Pearce (2000), Rübelke (2002), Pittel and Rübelke (2008) and Bollen et al. (2009), these reviews have been conducted on the basis of articles that use macroeconomic models to estimate the co-benefits of a particular policy or in a particular country. Conversely, the meaning of the term 'co-benefits' and its political usage has attracted comparatively little attention. Of the short-listed 138 articles on co-benefits, not one focused on the meaning, contestations and usage of 'co-benefits' in practice. This can be ascribed to the dominant scholarly focus on seeing co-benefits as primarily a subject for the economic discipline as opposed to the necessary multi-disciplinary approach needed to analyse

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co-benefits. In the former approach, co-benefits are equated with positive externalities. As we shall argue, the concept of co-benefits is not an economic concept or a prescriptive policy approach but should be understood as an idea, and it carries political weight in its definition, application and use. If the latter is not understood, no amount of potential opportunities derived from the co-benefits approach will ever be realized in practice.

This article poses the question: What does a review of the literature tell us about the definition, application and use of the co-benefits concept? The article first outlines the steps taken in the literature review (Section 2). Section 3 analyses the meaning of 'co-benefits'. Section 4 reviews the application of the concept. The conclusion reflects on our findings.

2. Key elements of the literature review

To select journal articles for our literature review, we conducted a search in the ScienceDirect database in the spring of 2014. Four steps were applied to find suitable articles for analysis. First, a search for the key terms 'co-benefits* OR ancillary benefits*' in the database revealed 2273 articles. 'Ancillary benefits' is here and elsewhere used interchangeably with the term 'co-benefits' (see, e.g., IPCC, 2007). Second, articles were selected if they had one of these key terms in their title, abstract or keywords. Third, we applied three criteria to judge the suitability of the articles' content for our analysis: 'co-benefits' is the central part of the analysis; the article studies climate change mitigation or adaptation measures; and the article makes conclusions regarding 'co-benefits' as a result of these measures. Only articles that met all the three criteria were selected for further analysis. Fourth, the resulting sample of 138 articles was subjected to both quantitative and qualitative analyses. In practice, this meant that we focused on articles on climate change, but very often, the co-benefits issue meant that we also looked at co-benefits in the fields of economics, environment, social and institutional studies (see Fig. 1).

In the qualitative analysis, all articles were scrutinized in relation to their definition and application of the concept of 'co-benefits' as well as their applied methodology in order to get a deeper understanding of the concept as well as to develop

categories for the subsequent quantitative analysis. To assemble a database for quantitative analysis, each article was coded on seven variables with multiple categories (Table 1) to allow for a more objective evaluation and the recognition of patterns in the application of the concept.

3. Diversification in the meaning of 'co-benefits'

This section analyses the meaning of 'co-benefits' in the academic literature. First, we identify three strands of common understandings of the concept and provide associated definitions. Second, we review the scope of the concept by providing an overview of possible co-benefits from our sample. Third, we explain why the concept of co-benefits has replaced the earlier concepts.

3.1. The use of 'co-benefits' in the academic literature

The qualitative analysis of how scholars define the term revealed that there is no univocal definition of what 'co-benefits' actually means. We find, first, that authors frequently fail to provide an explicit definition. Second, the common ground in all approaches is the elaboration of a 'win-win' strategy through which at least more than one objective is achieved through a single policy. Third, since our search focused on climate change, we found that in this field the term has been used to describe synergies between climate change mitigation/adaptation and other goals. Fourth, the analysis shows that the co-benefits terminology has been used in different ways throughout our sample. We argue that there are three strands of usage in empirical research that can be distinguished along various lines (Table 2).

A first cluster of articles refer to co-benefits as '*climate co-benefits*'. The policies studied in these articles are not specifically designed to address climate change. Conversely, co-benefits refer to the impact that development plans or sectoral policies might have on global climate change in line with the 'development first' approach (see, e.g., Bradley et al., 2005). The primary goal of such policies might thus be energy security (Mondal et al., 2010), health benefits (De Nazelle et al., 2011) or

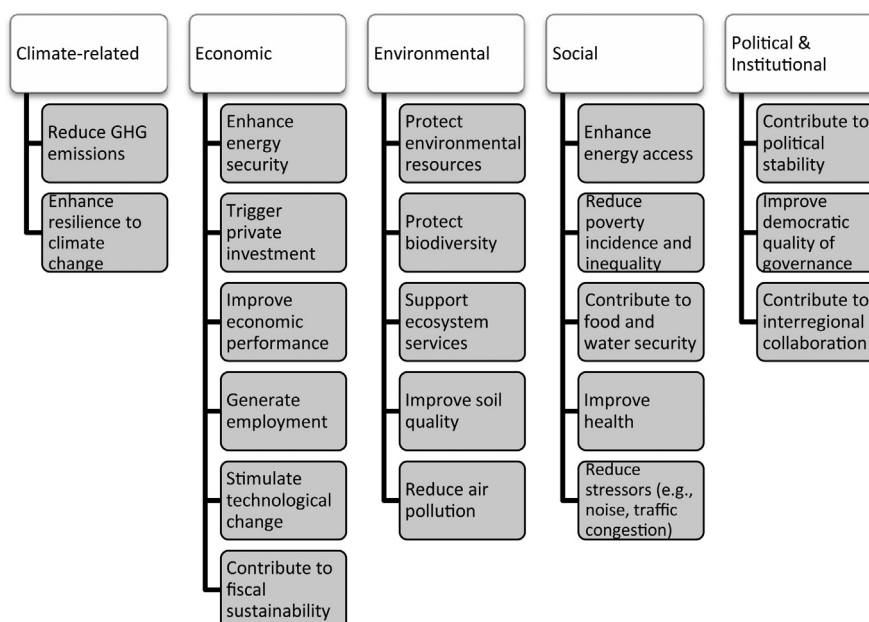


Fig. 1. Types of co-benefits.

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