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Opening up storylines of co-benefits in voluntary carbon markets: An analysis of household energy technology projects in developing countries



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ABSTRACT

This paper analyses how co-benefits have been conceptualized by experts and practitioners in household energy technology carbon offset projects. Offset projects, where emissions in one place are compensated through reducing emissions elsewhere, are justified on the basis of providing local development co-benefits in addition to global emissions reductions. What constitutes a co-benefit, who is entitled to it and what range of issues co-benefits address has received little attention. Three types of household energy technologies that have been popular in voluntary carbon markets are analyzed: improved cookstoves, biogas digesters and ceramic water purifiers. The co-benefits of these technologies are conceptualized by experts and practitioners through three different storylines: achieving health benefits, challenging carbon credit ownership and creating sustainable local markets. While the first and last storylines have been dominant, they also contain a tension over supporting local production of the technologies in developing countries versus importing more efficient technologies. The storyline of carbon credit ownership is more marginal. Opening up the different storylines of co-benefits demonstrates that behind offset projects lie different motivations and interests. How the co-benefits of household energy technologies are conceptualized influences what type of projects are successful in voluntary carbon markets and how voluntary offsets are governed.

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1. Introduction

Carbon markets have become formalized as one of the solutions to climate change in intergovernmental arrangements such as the United Nations Framework Convention on Climate Change (UNFCCC) and parallel voluntary approaches [36]. Both compliance and voluntary markets have embraced the notion of offsetting, whereby reductions in emissions in one place can be used to compensate for releasing emissions elsewhere. The incentive to participate in carbon offsetting is fostered in developing countries through promises of mitigation projects contributing to poverty reduction, local development and technology transfer [26]. Such local development benefits are referred to as co-benefits or side benefits, and include, for example, improved energy access, community development, biodiversity conservation or improved health, created in addition to the global emissions reduction [30].

The pursuit of co-benefits in carbon offset projects has also been referred to as win–win strategies, where the proposed actions benefit both the targeted communities and third parties [45]. Whether carbon markets in developing countries are actually able to fulfill multiple goals through creating both global emissions reductions and local sustainable development benefits has been at the centre of critiques on carbon markets. A majority of previous analyses on the main carbon offset mechanism, the Clean Development Mechanism (CDM), conclude that achieving multiple goals is difficult. Carbon offset projects have focused largely on the production of verifiable emissions reductions, while social development impacts have lacked clear definition and indicators, and been poorly monitored [49,37,51,5,1,38]. Expectations for delivering local development impacts have shifted more towards voluntary offset projects [29]. Voluntary offset projects have been presented as having a higher potential for development impacts due to their smaller project size, stronger sustainable development focus and lower transaction costs [31].

Household energy technology projects are a project type that has increased its popularity in voluntary carbon markets. Emis-

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sions reductions are created through the uptake of technologies that either increase energy efficiency or use renewable energy at the household level.¹ Such technologies include, for example, improved cookstoves, biogas digesters (biodigesters), water filters, solar water heaters, solar cookers, and energy efficient lights and bulbs. In energy research, household energy technologies in developing countries have often been overlooked in comparison to more ‘advanced and modern technologies’ [48]. Yet their daily usage for life-sustaining purposes, such as cooking and heating, indicates their crucial importance for a large part of the global population [48]. In addition to producing emissions reductions, the uptake of these technologies by households in developing countries has been connected to creating local development impacts through improvements in health, incomes and market opportunities [53,7,3].

In voluntary offset markets, the production of co-benefits is arising as an increasingly important selling point for offset projects, particularly household energy technologies [30,42,40]. Offsets from voluntary carbon projects are demanded because they have a story linked to local co-benefits associated with them [31]. These stories that connect reducing ones’ climate impact to also enhancing local development in developing countries are sought by, for example, corporate buyers and individuals interested in improving their public image [30,45]. At the same time, voluntary carbon markets are an example of private governance led by standard setting organisations that have no universal governance system for the production of emissions reductions and co-benefits [22]. Rather, each voluntary offset standard has their own processes for producing and monitoring emissions reductions and co-benefits [52]. Voluntary offsets are sold through different stories and images of delivering local co-benefits but at the same time lack universal measurement and monitoring practices. This paradoxical situation implies that how offset projects’ co-benefits are conceptualized matters. It influences individual projects, whose success in voluntary carbon markets depends on what sort of co-benefits the project can claim to create and with what assurances, and how these resonate with offset buyers’ expectations [30]. It also matters for discussions on how voluntary offsets are governed and how, if at all, the local and global benefits associated with voluntary carbon markets are realized.

The majority of research on co-benefits in both the compliance and voluntary offset markets has focused on how well the CDM or certain voluntary offset schemes deliver or fail to deliver co-benefits (e.g. Ref. [12]). There has been very limited discussion on what actually constitutes a co-benefit and according to whom within the field of household energy technologies. In contrast, the issue has been extensively discussed in REDD+ [50]. This article delves into the question of co-benefits through critically examining how experts and practitioners working with household energy technologies conceptualize co-benefits. My aim is to address how these actors define a co-benefit, who is entitled to it and what range of issues can and should a household energy technology offset project address. I employ discourse analysis to examine how different conceptualizations are constructed. Discourse analysis focuses on how a shared meaning of an issue is created and sustained through particular routines, norms and rules [20,21]. Even in a specific field such as household energy technology offset projects, there are multiple views on who should benefit from offset projects and how. I present three storylines through which the interviewed experts and practitioners conceptualized the co-benefits of household energy technology offset projects. This

provides insights into what issues the promoters, developers and funders of household energy technology projects consider significant, how they relate to each other, and what possible tensions emerge.

The paper is structured as follows. First, I give an overview of co-benefits in voluntary carbon markets and household energy technology projects as offset projects. Second, I present the materials and methods of the research, focusing on how discourse analysis can be applied to the question of carbon offsets. Third, I present three storylines through which experts conceptualize the co-benefits of household energy technologies, followed by a discussion and conclusions.

2. Co-benefits in the voluntary carbon market

The main carbon offset mechanism for developing countries is the Clean Development Mechanism (CDM), which contains a dual objective to produce both global emissions reductions and local sustainable development benefits in the countries the projects are hosted in. The CDM has been widely studied since its inception, and voluntary carbon markets have often been researched through comparison to the CDM [31,12]. Unlike the CDM, however, voluntary carbon markets have continued to grow despite global economic crises. With climate governance increasingly being manifest through voluntary, bottom-up and private approaches [8], voluntary offset markets need to be examined as a ‘fast-developing private area of the carbon regime’ [22,p. 344].

Standard setting organisations are the main actors through which verified emissions reductions in voluntary carbon markets are produced [18,22]. Co-benefits are addressed in various ways in the different standards organisations. The most popular standard is the Verified Carbon Standard (VCS), which does not contain measurement and monitoring requirements for co-benefits. In contrast, the Gold Standard, established by WWF and other NGOs in 2003, aims to ensure that projects deliver both emissions reductions and local sustainable development impacts. It places more emphasis on co-benefits through increasing stakeholder consultations of projects, excluding all project types besides renewable energy and energy efficiency, and creating the Gold Standard Passport for the monitoring of co-benefits. In forestry, the Climate, Community and Biodiversity standard (CCB) is used as an add-on to address co-benefits. Offset projects that want to be associated with delivering local development impacts tend to describe themselves as ‘premium’ or ‘charismatic’ and choose the Gold Standard, or in forestry the CCB standard [52].

The price of emissions reductions in the voluntary carbon market is more sensitive to perceptions of the co-benefits of projects [30]. The more local sustainability benefits a voluntary offset project can claim to produce, the higher a price it tends to generate in the markets [41]. Alongside the high demand for projects with co-benefits has been an increased interest to verify these co-benefits through measurement and monitoring practices. A news provider on the voluntary carbon market stated that 2013 could ‘expect a continued emphasis on carbon projects’ social and other “non-carbon” co-benefits’ [16]. A market survey from 2011 by Crowe [14] finds that carbon offset actors are generally interested in the co-benefits of projects, with co-benefits as the second most important criterion for project selection following project additionality. The focus on co-benefits has been particularly prominent in household energy technology offset projects. In 2014, offsets from household device distribution had the highest average price by project category, and buyers paid more for project types that were associated with co-benefits [39].

¹ While all technologies linked to energy used at the household level could be referred to as ‘household energy technologies’, I take this term to refer specifically to those technologies that reduce emissions compared to previously used technologies and practices.

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