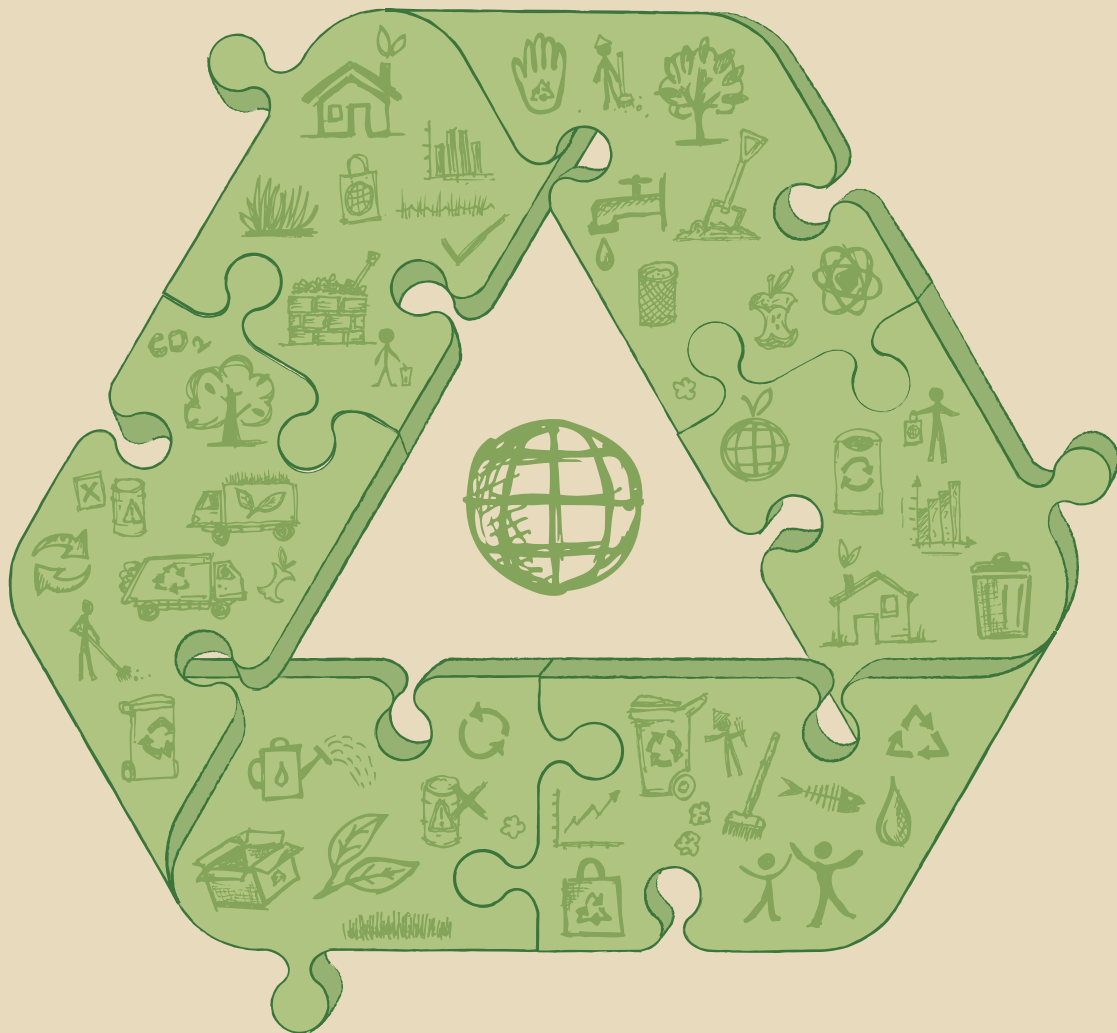


Valuing the sustainable development co-benefits of climate change mitigation actions

The case of the waste sector and recommendations for the design of nationally appropriate mitigation actions (NAMAs)



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The aim of this paper is to provide guidance to policy-makers and practitioners in the quantification and monetization of co-benefits of climate change mitigation, using the waste sector as a case study, and recommendations for the design of effective nationally appropriate mitigation actions (NAMAs). As a next step, we would like to see a take-up of key concepts expressed in the paper in actual NAMA design activities. The authors believe that the guidance provided in this paper is relevant for NAMA designers as well as supporters as the recognition of co-benefits in the design effort is likely to create financial leverage.

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List of abbreviations

3R	reduce, reuse, recycle
BUR	biennial update report
CDM	clean development mechanism
CER	certified emission reduction
CO₂	carbon dioxide
CO₂e	carbon dioxide equivalent
COP	conference of the parties
DALY	disability-adjusted life-year
DFID	Department for International Development, UK
DNA	designated national authority
GHG	greenhouse gas
ICA	international consultation and analysis
ICROA	International Carbon Reduction and Offset Alliance
IGES	Institute for Global Environmental Strategies
ILO	International Labour Organization
IMF	International Monetary Fund
INDC	intended nationally determined contribution
IPCC	Intergovernmental Panel on Climate Change
IRENA	International Renewable Energy Agency
IRRC	integrated resource recovery centre
LCA	life-cycle assessment
MDG	millennium development goal
MRV	monitoring, reporting and verification
NAMA	nationally appropriate mitigation action
OECD	Organization for Economic Co-operation and Development
REN21	Renewable Energy Policy Network for the 21 st Century
SDG	sustainable development goal
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UN ESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNFCCC	United Nations Framework Convention on Climate Change
UNU	United Nations University

EXECUTIVE SUMMARY

Nationally appropriate mitigation actions (NAMAs) have gained increasing interest as a tool for countries to promote climate change mitigation actions in the context of national sustainable development strategies. NAMAs have the potential to be a meaningful and powerful driver of sustainable development in developing countries. In order to do so, NAMAs should maintain or improve what has worked within the clean development mechanism (CDM) and address its limitations.

The CDM has been particularly successful with projects with high relative greenhouse gas (GHG) emission reductions (such as large scale industrial projects), but did not work for projects with high “co-benefits” (such as small-scale community-based projects). One of the reasons for this is that the CDM only monetizes GHG emission reductions. However, this is just one source of “value to society”. Good projects have many other sources of value that should be unlocked, recognized, quantified and, if possible, monetized.

In this context, we believe that a meaningful framework for the promotion of projects with a high degree of co-benefits, via valuing co-benefits and getting the incentives right, ought to be at the centre of NAMA design. Such an approach holds considerable relevance in the context of both the United Nation Framework Convention on Climate Change (UNFCCC) and the global sustainability agenda, including the post-2015 development agenda.

What drives mitigation actions and the reporting of the impacts or effects of these actions in national communications under the UNFCCC is the sustainable development benefits. For most developing countries and to a large extent donor communities as well as the private sector, the potential of projects, programmes and/or policies to deliver tangible co-benefits forms the basis of investment decision making. Co-benefits serve to strengthen the political case for NAMAs, drive intended nationally determined contributions (INDCs) and the desire to obtain international support to design and finance mitigation actions that deliver mitigation and development benefits.

Moreover, the implementation of the Rio+20 outcomes and the post-2015 development agenda will require decision-making processes and policy formulation to highlight the contribution of policies towards the achievement of various development goals, rather than focusing on sector-specific goals. A framework for identifying and quantifying co-benefits can therefore play an important role in this respect.

One of the sectors with the greatest opportunities for co-benefits is waste management, which is a major problem in developing countries. Prevailing solid waste management practices typically consist of end-of-pipe solutions, such as open dumping and uncontrolled landfilling, which not

only lead to methane emissions from untreated waste streams, but also to significant environmental, social and economic impacts in the local context. These negative impacts include, for example, environmental degradation around disposal sites, the spread of disease vectors, and the high costs incurred by municipal governments in collecting and disposing of waste.

While the share of the waste sector in terms of greenhouse gas emissions is relatively small compared to other sectors such as energy supply, the sustainable development co-benefits associated with certain reduce, reuse and recycle (3R) approaches are potentially very large. Experiences in implementing small-scale, decentralized and pro-poor solid waste management in developing countries have shown that they can generate a broad number of co-benefits, such as green job creation, improved health, improved waste collection, cost savings from reduced need for landfilling, and improved crop yields through the use of compost, among others. In the case of composting projects in selected developing countries in Asia-Pacific it was calculated that these **co-benefits can be as high as US\$ 184.21 per ton of CO_{2e} reduced**. The promotion of such projects calls for the need to value and quantify the associated co-benefits in order to give greater substantiation to decision-making and policy design, including NAMAs.

Based on the observations above, the paper proposes four key principles for the design of NAMAs.

NAMA Design Principle No 1: A successful NAMA is driven by the value it generates towards domestic policy priorities

We argue that a successful NAMA is one that is driven by domestic public and private interests unrelated to climate mitigation. From the perspective of the public sector, such interests are related to the creation of valued “social assets”, public goods which the public sector is interested in or would have funded (at a higher cost) anyhow. From the perspective of the private sector, such interests are related to strategic business objectives, such as profits, increased market share or innovation/product differentiation opportunities.

NAMA Design Principle No 2: A successful NAMA has a mechanism to transfer value from those that benefit to those that create the benefit

Barriers to the implementation of projects that are high on co-benefits are related to a failure to monetize the value (in terms of willingness to pay) of such co-benefits/social assets. A successful NAMA therefore must provide mechanisms that:

- a) Assess and quantify the co-benefits associated with mitigation actions identified;
- b) Establish who is willing to pay for the provision of such co-benefits/social assets;
- c) Determine their willingness to pay per “unit” of created co-benefit/social asset, and
- d) Facilitate a transaction of this willingness to pay to the producer of these co-benefits.

A common approach to assessing the possible willingness to pay for co-benefits is to identify existing spending for the generation of such co-benefits within the current public budget, or, to the extent that the generation of such co-benefits is privately funded, via private spending. In relation to private interests, private sector entities will take action as soon as an investment-enabling environment has been created by the NAMA. This includes the provision of direct monetary incentives as well as indirect incentives, including removal of investment barriers.

What is therefore required is a mechanism that transforms society's valuation (willingness to pay) for those benefits to project implementers. We have identified a number of existing mechanisms that could be used to implement such transfers in the waste sector:

- **Tipping fees:** a payment by waste producers to a waste management company.
- **Feed-in-tariffs:** a payment by electricity utilities to reward production of electricity from waste.
- **Tax exemptions:** a waiver of taxes or fees on profits, income or imports of equipment for low carbon waste management investment projects.
- **Subsidies:** a grant or low interest loan to co-finance the implementation of low carbon waste management projects.
- **Carbon credit payments:** a financial payment against the delivery of certified emission reduction credits from waste management projects, with a premium on co-benefits created by the project.
- **Pay for performance schemes:** a different kind of results-based payments to reward the production of co-benefits from waste-sector mitigation actions.

NAMA Design Principle No 3: A successful NAMA requires cooperation between the agencies that are expected to benefit from the generation of impacts which are within their jurisdiction and the NAMA designing agency that coordinates the transfer of incentives to implementers of mitigation actions

In almost all cases, control over existing spending for the generation of these co-benefits will reside in a government institution different from the one that is in charge of NAMA implementation (or in case of international support within a development budget not related to climate). This implies that the design of a successful NAMA requires cooperation between those agencies that are expected to benefit from it via the generation of co-benefits whose provision falls under their jurisdiction.

At the same time, it will be critical to provide adequate financial support to leverage the role of sub-national actors in the design and implementation of NAMA activities. In the waste sector, in particular, the responsibility of waste management lies with local governments but no or little resources are transferred to local governments, while the ability of local governments to raise revenues is very limited.

NAMA Design Principle No 4: NAMA designers in government need to ensure that NAMA incentives are tangible, accessible and substantial enough to grab the attention of decision-makers

NAMA incentives must be “easier to get” (fast, simple process) and more “bankable” than CDM carbon credits. Related to this is the requirement that the institutional framework in charge of delivering incentives to investors is predictable, transparent and accessible. Institutional arrangements should facilitate rapid start-up, be integrated into domestic policy, local objectives and international climate finance. Eligibility criteria should go beyond project-level additionality; they should be accessible for every action that contributes to achieving the voluntary targets defined within the NAMA. Incentive payments to investors should be accounted for with simplified (compared to CDM) monitoring, reporting and verification (MRV) as leakage risks within the larger NAMA system are inherently lower.

In conclusion, we argue for a more systematic evaluation of co-benefits, and their monetization and integration into decision-making, in order to promote mitigation actions high in co-benefits, such as pro-poor and community-based waste-to-resource projects. Climate financing could play a catalytic role in incentivizing investments into such projects and properly-designed NAMAs should remove the barriers that currently hamper their up-take. A framework for quantifying and monetizing co-benefits would also hold considerable relevance in the context of both the UNFCCC and the global sustainability agenda, including the post-2015 development agenda. The methodological approach presented in this paper has been developed with the aim to provide a useful tool for policy-makers in developing countries and in the hope that it will be adopted in the design and implementation of current and future NAMAs.

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