



Task Force 6
Accelerating SDGs: Exploring New
Pathways to the 2030 Agenda



A FRAMEWORK FOR QUANTIFYING THE CLIMATE CO-BENEFITS OF DEVELOPMENT PROGRAMMES

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Abstract



Globally, worsening climate change is causing not only environmental crises, but social crises as well as it exacerbates existing social inequities. G20 governments, irrespective of the country's level of development, are implementing various development programmes and safety net schemes to respond to these consequences of global warming. Often, these schemes yield unintended but significant benefits, including climate co-benefits, which are not widely monitored, quantified, or reported. The Center for Study of Science, Technology and Policy, a think tank based in India, conducted

an assessment of a rural development programme—*Usharmukti* in West Bengal—for the climate co-benefits of the natural resource management (NRM) activities provisioned through the programme. This study led to the conceptualisation of a framework that can guide quantification of the resilience, adaptation, and mitigation co-benefits of NRM-based development programmes. Operationalising this framework can help governments assess and showcase the climate co-benefits of NRM-based development programmes, thereby contributing to the achievement of climate targets and the SDGs.



The Challenge



1

The Climate Change and Development Conundrum


Heatwaves, droughts, floods and cyclones are examples of climate disasters, the frequency and magnitude of which are increasing year after year because of climate change. This underlines the urgency to build resilience against, adapt to, and mitigate climate change, thereby ensuring a safer, and more habitable and equitable world. Climate change affects the operationalisation of development programmes by impacting environmental, social, and economic conditions. However, without sustainable, resilient and low-carbon development, the current climate crisis will be amplified, leading to an established feedback loop.¹ Therefore, development initiatives have to be cognisant of climate change—how they can contribute to, be impacted by, or address climate change. This is possible only when development policies and programmes categorically recognise the climate co-benefits or trade-offs associated with their implementation. However, knowledge, information and understanding of the climate co-benefits of development programmes remain limited or unquantified.

Defining 'Climate Co-benefits'

There is broad consensus that climate policies and actions, aimed at tackling climate change, can also deliver on sustainable development priorities, such as clean air and water, green jobs, public health, and preservation of biodiversity. These benefits of climate actions help bolster support from local stakeholders and increase the likelihood of these actions being approved and taken up by decision-makers.

The inverse of this is also true, i.e. development programmes, in addition to delivering development goals, can provide climate co-benefits by increasing the resilience of natural systems, helping populations adapt to current and future climate impacts, and mitigating carbon dioxide. The Intergovernmental Panel on Climate Change (IPCC) defines co-benefits as “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.”²

While organisations such as the World Bank acknowledge that their investments and financing that



support development objectives enhance climate action,³ development programmes, implemented by governments, do not often realise their potential for climate co-benefits. Regardless of the development level of a nation, governments allocate large shares of their budgets for development programmes and welfare schemes. These programmes or schemes are implemented to achieve nationally determined socioeconomic goals. However, some of the activities implemented often have spillover benefits; these can improve the resilience of communities and natural systems, help socioecological systems adapt to actual or expected climate disasters, and sequester carbon.


For example, the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), a flagship development scheme in India, has gained the attention of researchers and policymakers over the past decade for its ability to create rural employment. A few case studies have revealed the potential of MGNREGS for delivering climate co-benefits, thereby prompting the government to acknowledge MGNREGS as one of the ‘24 key initiatives’ that can address climate change in the country.⁴

However, that is not the case with other development programmes implemented across the country on different scales. Thus, the need to quantify, monitor and report on the climate co-benefits of development programmes has not been mainstreamed in India or elsewhere. This creates an additional quantification and reporting requirement for implementing agencies that tend to have a single focus, which brings us to the next interlinked challenge—lack of horizontal networking.

Limited Horizontal Networking

Government departments that implement development programmes and schemes generally work in silos because of a lack of effective coordination mechanisms between them.⁵ Limited inter- or even intra-sectoral collaborations or horizontal networking between implementing agencies can result in duplication of investments and failure to resolve cross-cutting issues, such as climate change.

For example, in India, which has a significant rural population⁶ living below the poverty line,⁷ the Ministry of Rural Development carries out a number of development programmes that focus on rejuvenating the natural resource base



that rural economies are dependent on, apart from improving access to basic amenities. While regenerating natural resource capital and improving the welfare of communities, these programmes accrue considerable climate co-benefits. However, the Ministry of Environment, Forest and Climate Change is responsible for all climate change-related outcomes. With little to no horizontal networking between these two agencies,⁸ the need to quantify and report on the climate co-benefits of development programmes remains neglected.


With each country having to report on its progress on the SDGs, nationally determined contributions (NDCs), and forthcoming adaptation communications under the Paris Agreement, a comprehensive framework for monitoring, quantifying and reporting on climate co-benefits, is an imperative. Climate co-benefits reveal the multidimensionality of many development programmes and, therefore, equip policymakers with a new lens to view future development challenges.

CSTEP's Rapid Assessment: An Overview

Considering the aforementioned challenges, CSTEP conducted a rapid assessment to quantify the climate co-benefits resulting from the implementation of *Usharmukti*, a river rejuvenation programme operationalised by MGNREGS in West Bengal, India. The programme is implemented across six districts and employs micro-watershed management works, such as water harvesting structures, irrigation canals, continuous contour trenches, rock checks, and horticulture and social forestry plantations.

To conduct a rapid assessment, the implementation area and the total number of works executed were stratified and randomly sampled. A total of 541 works across 13 watersheds were assessed for climate co-benefits by using a combination of field- and survey-based methods.

The study found that the works implemented had not only provided income benefits, but had also



sequestered carbon and helped communities in building resilience and improving their adaptive capacity.⁹ This provided proof of concept and led to the development of a framework for quantifying the climate co-benefits of


MGNREGS works. The framework has further been adapted to suit all NRM-based development programmes that are known to offer apparent direct benefits¹⁰ and have the potential to ensure climate co-benefits.



The G20's Role

2





The multiple initiatives taken by the G20 to address climate change and other cross-cutting environmental issues show that the grouping has considerable influence and can help in forging commitments to address climate change at the global level. This Policy Brief proposes mainstreaming a monitoring and evaluation framework that will help in quantifying and reporting on climate co-benefits of NRM-based development

programmes, thereby addressing development and climate challenges simultaneously. The role of the G20 forum is clear: it can act as a platform to foster consensus among member states and promote adoption and implementation of the framework. The influence of the G20 extends beyond the ambit of its member states and the forum has consistently demonstrated a history of shaping global agendas with an emphasis on cooperation, mutual benefit and multilateralism.



Recommendations to the G20

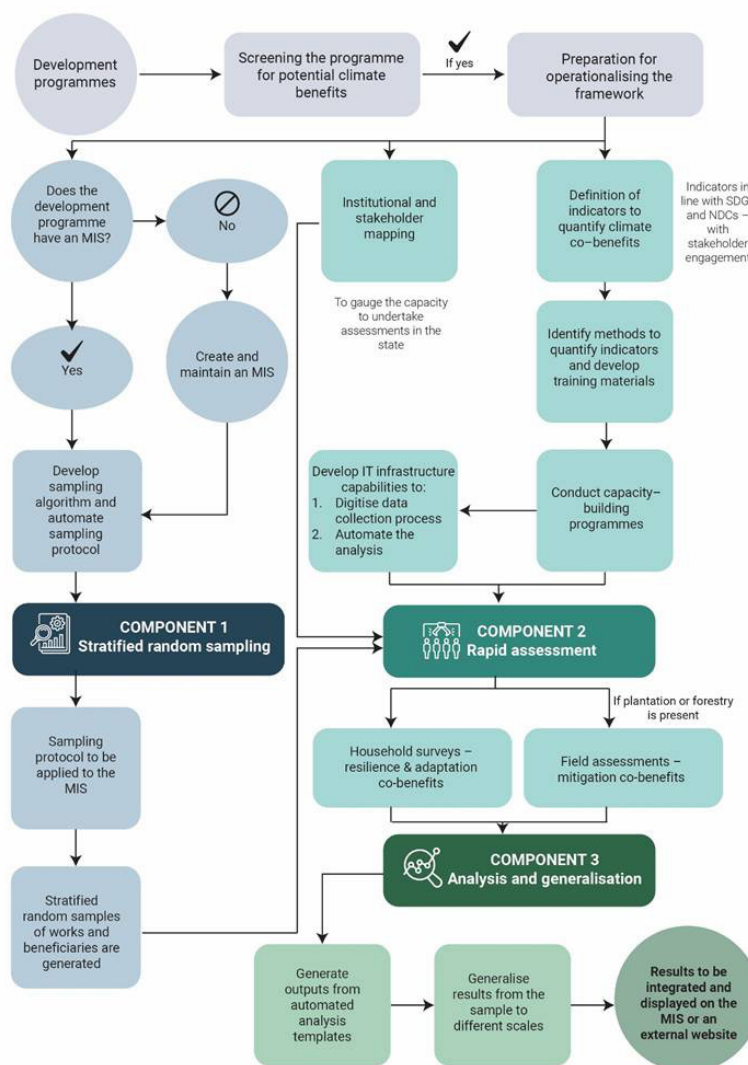
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The G20 is the right forum for promoting the operationalisation of a framework, such as the one proposed here, to quantify the resilience, adaptation and mitigation co-benefits of NRM-based development programmes. This is the primary recommendation of this brief. The framework developed to quantify, monitor and report on climate co-

benefits of development programmes is presented in the following figure.

The framework has three main components: sampling, rapid assessment, and analysis for generalisation. Several steps are required as preparation for operationalising the framework and these are described in detail under each of the following components.



Component 1: Stratified Random Sampling

Development programmes are implemented on a large scale, with beneficiaries spread across vast areas, such as a region, a state or a country; because of this, a census survey becomes impossible. Therefore, the first step towards implementing the framework is to identify a sample to assess the development programme that has been chosen.


To identify the sample, a stratified random sampling protocol, which uses data from the management information system (MIS) of a programme, will need to be developed and automated. If the programme does not maintain an MIS but has the potential to deliver climate co-benefits, the first step will involve creating and maintaining an MIS. It should be designed to present data at the level of the smallest administrative unit. The data should include but not be limited to beneficiary names and the type of activities they are benefiting from. The random sample generator will provide a statistically significant random sample of beneficiaries from a large population, thereby informing the assessors about where to sample for

field-related measurements and whom to sample in the case of surveys.

Component 2: Rapid Assessment

Data collection, relevant to the development programme being assessed, is crucial. The first step is to identify and map specific activities of the programme that are delivering climate co-benefits. Following this, indicators that represent the key performance of the work and attest to its climate co-benefits should be conceived. It is recommended that the processes of conceiving indicators be in line with national goals and targets, such as the SDGs and the NDCs. The greater the overlap of indicators between the development programme and the national objectives, the higher is the incentive for the government to evaluate climate co-benefits from the programme.

Once the indicators are conceived, a methods manual needs to be prepared to provide step-by-step instructions on quantifying the indicators. For example, a development programme seeks to help farmers by establishing horticulture plantations. The main benefits



include fruits and timber that provide supplementary income to farmers. At the same time, a climate co-benefit is achieved through carbon sequestration, apart from potential climate resilience and adaptation co-benefits. The methods manual in this case needs to provide instructions on quantifying the carbon sequestered from the plantation. Details of the types of measurements required and the allometric equations for quantifying the carbon sequestered should be provided in a lucid manner.

Given the large scale at which the assessments should be performed, the following efforts are recommended:


- i. execution of an extensive stakeholder-mapping exercise to identify institutions, organisations and personnel with the capacity to perform field assessments;
- ii. identification of simple but robust methods for quantifying the indicators to ensure that these are easily executed by field personnel;
- iii. development of training material and its integration into existing capacity-building programmes to

ensure that the capacities of all stakeholders involved are built; and

- iv. wherever possible, digital recording of data or use of the optical mark recognition format, which is recommended to ensure transparency and allow seamless aggregation of data from all locations surveyed, thereby saving time and money, especially in developing nations, where the institutional capacity to carry out assessments is comparatively low.

Component 3: Analysis and Generalisation

Data collected through field assessments and surveys should be analysed and generalised from the sample to cover the overall region, the population or the state. A template can be created to automate the process of data analysis and reporting. This will be especially helpful for indicators that require slightly advanced techniques for quantification, such as carbon sequestration. However, an automated mode of analysis will be possible only if the data is collected digitally. Therefore, digital data collection should be made a priority within Component 2.



The study conducted by CSTEP highlights the climate co-benefits of a development programme. The adoption of a framework, such as the one presented here, will help quantify and report on the multiple co-benefits accrued by a single programme. For example, if a development programme offers the co-benefit of flood protection, using this framework for assessment and quantification can reveal the total population that has adapted to current or expected flood situations because of the programme. In the case of mitigation, the framework will provide information on the quantum of carbon sequestered.


If the development programme has a well-functioning MIS, the results can be included as part of regular reporting on the system. If this is not possible, a separate portal may be created, such as the MGNREGS-SDG dashboard, to showcase results. Spotlighting the multiple intended and unintended co-benefits of a development programme can be directly fed into a country's reporting requirements on SDGs, NDCs, and adaptation communications.



Conclusion

4





As the G20 provides a plan of action to the world's largest economies, the forum can promote the process of collaboration and reporting on unintended climate actions while achieving sustainable development. Temperature and rainfall are projected to increase in the coming decades. Moreover, the magnitude and frequency of extreme rainfall and heatwave events, cyclones and second-order impacts of flooding, dry spells or droughts and landslides are likely to increase.

Therefore, climate benefits realised through dedicated climate actions are important but not enough. A framework such as the one proposed here, needs to be integrated into the monitoring and reporting process of development programmes. The framework also provides an opportunity to assess the effectiveness of development programmes and incorporate course corrections, if needed, to increase climate co-benefits.

Attribution: Tashina Madappa Cheranda et al., "A Framework for Quantifying the Climate Co-Benefits of Development Programmes," *T20 Policy Brief*, May 2023.

Endnotes

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