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Does REDD+ Work? Examining the Ecological and Economic Impacts of a Pilot Programme in Nepal

Paying communities to preserve and manage their local forest resources using the internationally recognized REDD+ approach can be a practical and effective way to combat climate change. A 'before-and-after' and 'with-and-without' evaluation of a pilot program in Nepal indicates that REDD+ can contribute to carbon sequestration and improve forest management without hurting local livelihoods. Thus, policy makers should begin the process of scaling up REDD+ with a strong emphasis on supporting communities to shift to bio-gas as an alternative to fuelwood.

Examining a REDD+ Pilot in Nepal

To find out whether REDD+ has the potential to deliver the required environmental and social benefits, a team led by Bishnu P. Sharma from SANDEE looked at a pilot REDD+ project in Nepal. This pilot, set up in 2009 with support from NORAD's Climate and Forest initiative, provided monetary payments to 105 community forestry user groups to reduce deforestation and forest degradation in three watersheds. Researchers evaluated the REDD+ pilot by comparing the actions of 21 communities that were part of the REDD+ programme with those of 21 neighboring communities who were not involved, before and after the intervention. Differences in REDD+ 'treatment' and non-REDD+ 'control' communities were assessed in terms of carbon stored, ecological indicators such as forest fires, firewood collection,

Reducing Emissions from Deforestation and Forest Degradation (REDD+)

Climate change is now an acknowledged fact, with increasingly evident negative consequences. Forest conservation has the potential to reduce global greenhouse gas emissions by up to 20 percent. REDD+ is an ambitious international strategy to tackle climate change through forest management.

The REDD+ approach seeks to promote sustainable forest management and carbon sequestration by creating markets for carbon. Through this mechanism, industrialized countries are expected to pay forest-rich developing countries to conserve and enhance forest-carbon stocks. While the global vision for forest-carbon sequestration is clear, there is significant uncertainty over how to implement the REDD+ mandate.

This policy brief is based on a forthcoming SANDEE working paper No. 95-15, 'Impact of REDD+ on Forest Carbon, Ecology and Household Welfare: Learning from a REDD+ Pilot in Nepal' by Bishnu P. Sharma, Subhrendu Pattanayak, Mani Nepal, Priya Shyamsundar and Bhaskar S. Karky, Tribhuvan University, Kathmandu, Nepal. E mail: bishnus@sandeeonline.org. The full report is available at: www.sandeeonline.org

SANDEE

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SANDEE's Policy Brief Series seeks to inform a wide and general audience about research and policy findings from SANDEE studies.

This policy brief is a joint output of a research project undertaken by SANDEE and ICIMOD under a REDD+ pilot program in Nepal. This program is implemented by ICIMOD with financial support from NORAD and the Norwegian Ministry of Foreign Affairs.

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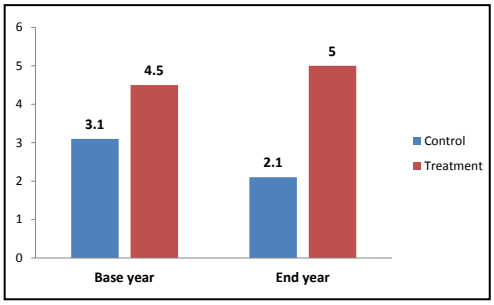
forest encroachment and biodiversity and economic indicators such as forest income. The use of improved cook stoves and biogas, as mechanisms for reducing forest degradation, was also examined.

Findings

Four sets of important results emerge from this study:

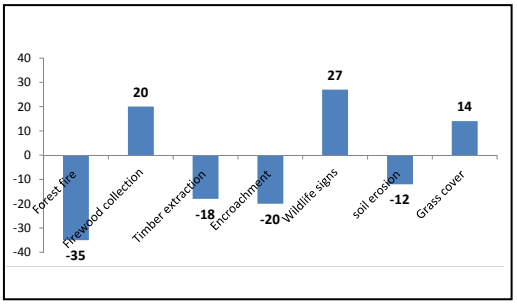
- There was no overall change in forest-carbon stocks in REDD+ pilot forests, but litter biomass increased. Thus, community forests are generally being conserved, but the pilot may have contributed to additional carbon sequestration that may become more evident with time.
- REDD+ clearly contributed to improvements in forest management. There was a significant reduction in the incidence of forest fires, forest encroachment, timber extraction and soil erosion in REDD+ areas, while grass cover and wildlife signs improved.
- There was a decline in the share of firewood used in cooking. In addition, houses in the REDD+ areas shifted from firewood to using bio-gas for cooking.
- There was no significant change in income from community forests among groups involved in REDD+. In other words, the pilot project did not harm local livelihoods, an important finding because it allays concerns that managing forests for a global good may reduce local forest income.

Figure 1: **Leaf litter carbon increased in Pilot REDD+ forests**



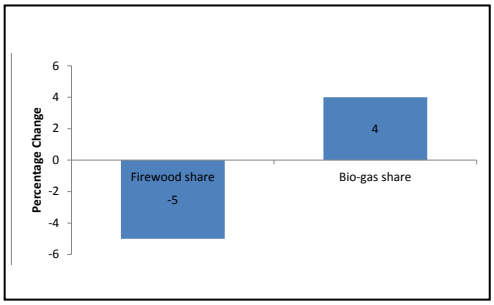
Source: Field Survey (2011and 2013)

Figure 2: **Changes in ecological indicators attributable to REDD+**



Source: Field Survey (2011and 2013)

Figure 3: **The use of biogas and firewood in REDD+ communities**



Source: Field Survey (2011and 2013)

Recommendations

The pilot REDD+ program initiated in Nepal suggests that REDD+ can support local livelihoods while conserving forests and carbon. The payments provided by the REDD+ pilot project were of a token nature. Thus, a larger-scale and more institutionalized REDD+ scheme has considerable potential. However, this will require resources, a well-designed monitoring-verification-payment system and an examination of the challenges of scaling-up.

One major change that the REDD+ approach requires households to make is to move away from forest-based fuels to cleaner non-forest fuel sources. Thus, it is vital to provide communities with alternative, sustainable fuel options. Bio-gas provides just such an option and should be promoted and made as accessible as possible.

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