

Climate change adaptation (CCA) and disaster risk reduction (DRR) synergies of interventions

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The study on climate change adaptation (CCA) and disaster risk reduction (DRR) synergies of interventions has been carried out with a combination of approaches consisting of country-specific case studies in Nepal and India in South Asia and in the Republic of Ghana in the West Africa along with an online survey eliciting responses from the stakeholders engaged in climate change adaptation and disaster risk reduction. The case studies in Nepal consisted of conducting focused group discussions (FGDs) with project beneficiaries in two DRR projects and one CCA project to elicit the benefits accrued from these projects. In the case of the Republic of Ghana, the FGDs were conducted in four CCA projects representing major CCA programs being implemented in the Republic of Ghana (Figure 1). In India, the study was focused on a specific intervention instead of several projects so as to evaluate and elicit CCA and DRR benefits from a known intervention. In this case, the study focused on the risk insurance project in the Andhra Pradesh state of India. For eliciting various benefits from the insurance, a detailed questionnaire was developed addressing the beneficiary and non-beneficiaries of insurance. The online survey consisted of closed-ended and open-ended questions on various aspects of CCA and DRR synergies. The questionnaire was posted on-line and respondents were invited to participate in the survey. The study results have largely indicated that there are no discernable differences in the outcomes of DRR and CCA projects included in the case studies. The conceptual framework followed in the study is shown in Figure 1 indicating synergies and differences between DRR, CCA and development. CCA and DRR both deal with climate risk management, CCA focuses on long term strategies, while DRR often focuses on immediate support.



Figure 1: The study is based on the direct focused discussions with the beneficiaries of the projects implemented in the case study countries

In India, the risk insurance was identified as a focused intervention to study the DRR-CCA synergies. The communities in the study area were extremely vulnerable to climatic disasters such as droughts, most of the agriculture in the area is rainfed and droughts are frequent with an recurrence rate of once every two years. Losses from disasters were usually large and disaster losses have locked the communities in a constant cycle of poverty. Insurance has been offered

from the government and is a prerequisite for the farmers to obtain crop loans. Local NGOs also offer an agricultural insurance product. As a result, the insurance coverage is quite widespread in this region. Insurance payout is received almost every year, it is primarily used for immediate coping with disaster impacts including providing for household necessities and agricultural inputs for the next season. Insurance payout does not completely cover the disaster losses however it did aid in decreasing the severity of the loss; informal borrowing from money lenders and the distress sale of livestock has decreased after the introduction of insurance contributing to DRR outcomes. Decrease in distress selling of assets has also helped in the preservation of assets. In the absence of other DRR measures in the study area, insurance acted as a partial DRR mechanism, it helped in absorbing the initial shocks from the disaster but may not have been sufficient to cover all the losses from the disaster, supporting initiatives from the government and DRR strategies are necessary to effectively manage disasters in the community.

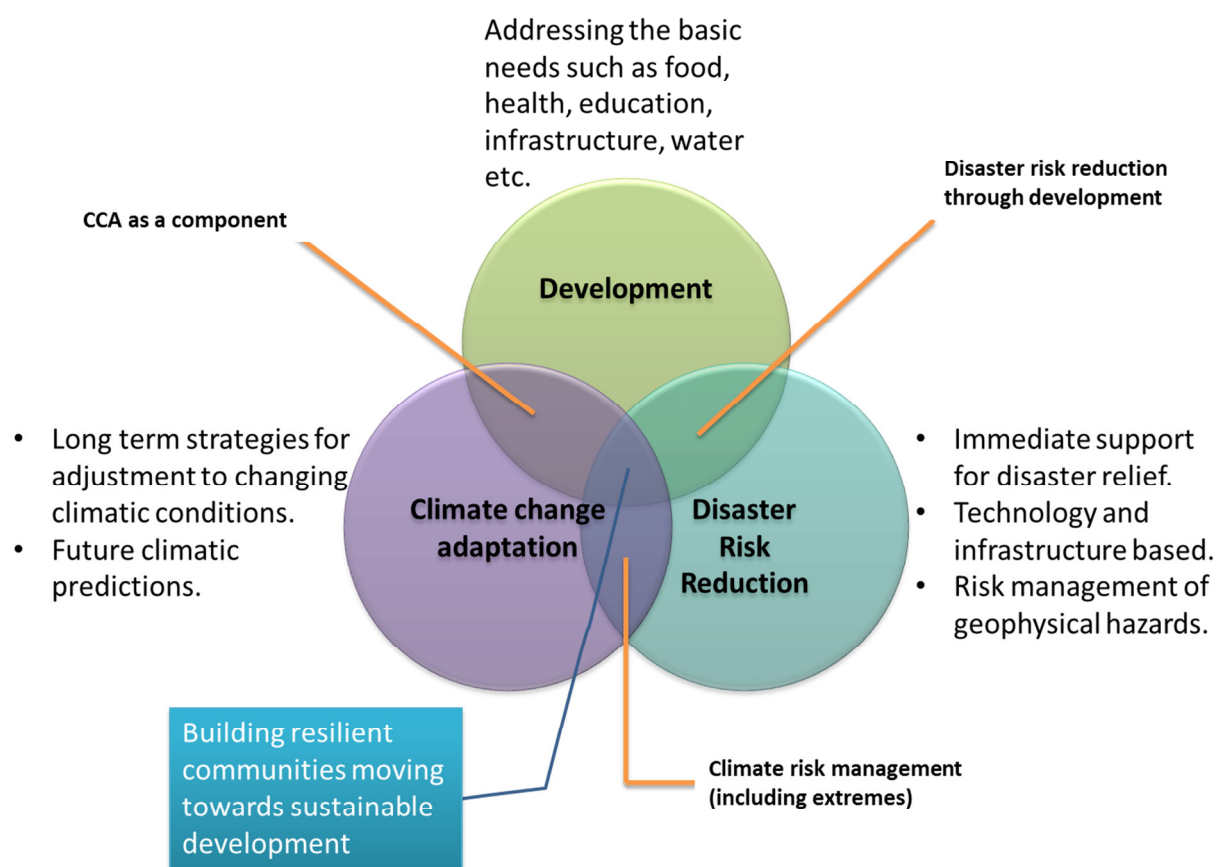


Figure 2: Synergies between climate change adaptation and disaster risk reduction

Most of the farmers associated the presence of insurance with increased confidence to take more risky cropping decisions. Farmers are aware to a certain degree of the effects of climate change and associated it to irregularities of rainfall and increasing drought. In light of this, farmers have begun to adopt farm management strategies; however the main deterrent has been the lack of

sufficient finances with the farmers. Presence of insurance positively influenced farmers' decisions to take up adaptation strategies, this is partly because of the fact that they received capacity building from the insurance providers (particularly NGOs) in better crop management strategies. Capacity building, knowledge enhancement and availability of weather information provided along with the insurance product seem to be considerably more effective in the promotion of agricultural adaptation practices than the insurance product alone. Regular insurance payouts during disaster years have resulted in reduced livelihood variability along with the preservation of assets leading to reduced vulnerability to some degree. Savings and overall development of the community has improved over the last ten years but cannot be directly attributed to the insurance. Insurance in association with enabling government and NGO programs have helped in building resilience to climate change albeit at a very slow pace which may not be sufficient to cope with the impacts of the climate change.

Table 1 provides the summary of projects evaluated and the classified benefits accrued from these projects in Nepal and the Republic of Ghana. It can be seen from the table that irrespective of the nature of the interventions, most of the interventions have resulted benefits that have high potential to result in disaster risk reduction and climate change adaptation synergies (please see the last column). In Nepal, the study has focused on assessing the CCA and DRR benefits of three projects. The three sites (2 for DRR and 1 for CCA) were visited to observe the activities implemented as well as to interact with the beneficiaries through FGDs. Based on the FGDs, it can be concluded that there is no fundamental difference between DRR and CCA outcomes at the ground level or at the implementation level. The activities being carried out by various agencies, whether under the name of DRR or CCA or other development/livelihood centered projects/programmes, are almost similar. Most of the activities were focused on: 1) increasing and stabilizing income (either by livelihood diversification or using improved varieties of seeds, breeds, using modern technologies etc.), 2) constructing various engineering structures (e.g. water retaining structures, river training structures, slope protection structures etc.), 3) enhancing capacities of local communities through various trainings, awareness raising programs, exposure visits etc. and 4) institutionalising DRR and CCA at the local level by forming local level committees, disaster management plans etc.

In Ghana, the CCA pilot projects implemented in Xedzozdoekope located mainly in a grassland and Odomasi located mainly in a wooded to semi-wooded area both in the Afram Plains were similar even though some aspects were tailored to suit the different geographic features. The pilot project in Kankama was considered a CCA project with DRR components in the official document while the pilot project in Apam was a CCA project but unlike the other three projects, the only one related to health.

It could be seen that in the two Afram Plains projects, different benefits to meet different needs (i.e., erosion control of the slopes through tree planting for short-term flooding in Odomasi and mulching for soil dryness in Xedzozdoekope) were realised in addition to the common benefits realised in both communities. The activities implemented in the Afram Plains, Kankama and

Apam were different, yet similar benefits accrued to the communities. Economic benefits (as increased income) were reported in all four communities. Knowledge acquired to address the challenges facing the communities and sharing this knowledge with the future generation was also reported in all the communities. Strengthened social cohesion and increased resilience/adaptive capacity were reported in three communities. It could be said that a higher number of similar benefits were realised from different projects and although only one DRR project (combined with CCA) was used for the comparison, it is obvious that both the DRR and CCA projects were only different by name as the ultimate outcomes were similar. Hence no discernible differences can be said to be occurring between these two project areas but rather a high level of linkage is suggested.

From this exercise, it could be concluded that most CCA and DRR interventions tend to have synergistic impact on community ability to adapt and reduce disaster risks. However, these outcomes are not automatic i.e. these outcomes need to be channeled for the ultimate impact in terms of CCA and DRR. For example, a higher income doesn't necessarily mean that the communities could adapt to climate change and be able to reduce the disaster risks. However, higher income certainly provides them a greater opportunity to do so than in a poverty situation. Same explanation can be made to other benefits such as increased savings, growth in assets etc. Hence, there is a need to put in place proper enabling conditions that would ultimately convert in these benefits into DRR and CCA outcomes. Interventions such as capacity building, awareness generation and insurance can help channeling these benefits towards fuller CCA and DRR outcomes.

Table 1: Projects with accrued benefits in Nepal and Ghana based on FGDs conducted in the respective project locations.

Project Title and activities	Accrued benefits			
	Benefits	DRR	CCA	Common
Nepal				
Mainstreaming livelihood centered approaches to disaster risk reduction (DRR), Kirtipur Village, Devchuli VDC, Nawalparashi [DRR]	• Increased food security			O
	• Increased savings			O
	• Growth in livestock			O
	• Reduction in landslides	O		
	• Better leadership skills			O
	• Better livelihood capacities			O
	• Better awareness on disaster risk reduction		O	
Disaster Risk Reduction and Humanitarian Programme (DRR&HP), Karinjor VDC -8, Sarlahi [DRR]	• Diversified livelihoods			O
	• Reduced cost of cultivation			O
	• High animal production			O
	• Better access to finance			O
	• High savings			O
• Irrigation canal improvement				
• Improved cattle sheds				
• Afforestation				
• Capacity building				
• Livelihood support activities				

Project Title and activities	Accrued benefits			
	Benefits	DRR	CCA	Common
• Risk sharing	• Reduction in flood related losses	O		
• Women participation in DRR activities	• Better livelihood capacities			O
• Construction of river banks	• Better awareness on disaster risk reduction	O		
• Capacity building				
Increasing the resilience of poor communities to adapt to the impacts of climate change, Kabilash VDC-1, Jugedi Khola Watershed, Chitwan [CCA]	• Better access to irrigation			O
	• High income			O
	• Reduced flooding and losses	O		
	• Reduction in forest fire	O		
	• Better understanding on CCA		O	
	• Better livelihood capacities			O
Ghana				
Food security and adaptation to climate change in the Afram Plains of Ghana, Xedzozdoekope [CCA]	• Confidence of being resilient	O	O	
	• Increase in farm production			O
	• High social capital/networking			O
	• Less dependency on government programs			O
	• Better income			O
	• Better vegetation			O
	• Greater awareness on alternative livelihoods			O
Food security and adaptation to climate change in the Afram Plains of Ghana, Odomasi [CCA]	• Better income			O
	• Confidence on being resilient	O	O	
	• High social capital			O
	• Ability to plan			O
	• Better means to share knowledge			O
	• Reduction in slash and burn farming		O	
	• Reduced erosion			O
	• Reduction in water-borne diseases			O
	• Increase in crop yields			O
AAP: Fanteakwa District Pilot Project, Kankama, Fanteakwa District [CCA-DRR]	• Diversified livelihoods			O
	• Natural resource conservation			O

Project Title and activities	Accrued benefits			
	Benefits	DRR	CCA	Common
• Tree planting	• Better DRR knowledge	O		
• Poultry and livestock production	• Stabilized river flows			O
	• Better social capital (cohesion)			O
Gomoa West/Apam Pilot Project, Apam, Gomoa West District	• Better health			O
	• Better local economy			O
• Creating awareness on CC and health	• Better fishing practices			O
• Tree planting exercise	• Better fish catch			O
• Monthly sanitation exercises				