

WWF-Pakistan – with the cooperation of Climate and Development Knowledge Network (CDKN) and global change SysTem for Analysis, Research and Training (START) - has developed this Policy Brief in the interest of informing policy development on the issue of mainstreaming climate change adaptation and disaster risk reduction in Pakistan.

POLICY BRIEF I 2014 MAINSTREAMING ECOSYSTEM BASED LIVELIHOOD MEASURES IN PLANNING AND POLICY



CCA AND DRR MAINSTREAMING

The iterative process of integrating climate change adaptation (CCA) and disaster risk reduction (DRR) into policymaking, budgeting and implementation processes at national, sector and subnational levels. It's a multi-year, multi-stakeholder effort that entails working with government actors, political parties and parliament, national statistics office, non-governmental actors, and development actors.

KEY POINTS

- Climate change and disaster affect several important economic sectors in Pakistan that are dependent on ecosystem based livelihoods; these sectors play pivotal roles in Pakistan's food security, income generation, and industrial growth.
- Mainstreaming of climate change adaptation and disaster risk reduction into official planning documents is needed to ensure sustainability of climate resilient ecosystem livelihood measures and interventions.
- Entry points for mainstreaming include: action points in planning documents, earmarking of budgets, and setting up coordination committees consisting of key government departments to align mainstreaming efforts.

THE ISSUE

One is easily able to identify "ecosystem based livelihoods" in economic sectors that have important roles in Pakistan's food security, income generation, and industrial growth. The sectors and the ecosystems that straddle them are evident throughout Sindh province, whose boundary is roughly the same as Birdlife International, National Geographic and WWF International's 40th most prioritized of ecoregions out of a global list of 200: the Indus Ecoregion. For example, small-scale paper, furniture, and artisanal industries rely on forests such as Pai (Shaheed Benazirabad) and Khebrani (Matiari), besides scores of entrepreneurial households selling village-scale fuelwood and construction wood supplies. Also, in the same ecoregion, urban amd rural consumption from Sindh's burgeoning dairy and meat industries is only growing and relies directly upon dry matter grown in rangeland ecosystems such as Chotiari Res-

ervoir in Sanghar, Finally, another obvious example is that of the "inland fisheries" sector which relies upon large freshwater ecosystems such as Keenjhar in Thatta, or, Manchar in Dadu amd Jamshoro.

Whether or not Pakistan at once pursues a green economy model, in which biological resources (e.g., livestock, or, rangelands) are sustainably managed while reducing ecological footprints (e.g., energy or water usage)

and generating employment, month-on-month growth in related economic sectors (e.g., dairy) will remain volatile and downtrending in the absence of practices that bolster climate resilience and sustainable harvests of livelihood dependent ecosystems (e.g., with climate induced droughts, down time in dry matter output from rangelands can be reduced by using practices such as rotational livestock grazing).

Before spending on climate/disaster resilient and sustainable management practices is incurred as part of a sequenced delivery plan, research of different kinds is needed. Often such research is technical and subject matter specific, e.g., it relates temperature change to sepcies-specific behaviors such as "spawning" and matches districts to flash points for such behaviors, or, it describes added requirements during floods such as oxygenation to counter accompanying effects of water turbidity on



gills of fish. With findings of this order of detail, interventions for ecosystem dependent livelihoods (e.g., acquaculture trainings) become even more relevant; and, besides, such research often establishes baselines that can be used to trace causality and measure the cost-effectiveness of state interventions.

Before considering commissioning research, note that recent ground-level trainings and research are beginning to shed light on the investment returns and cost-effectiveness of disaster/climate proofing in fisheries and livestock sectors in Pakistan. Impacts of natural hazards on the inland fisheries sector, for example, were studied for periods of up to 2 decades to reveal trends and extremes that tally with sector-specific boom-bust cycles. This was recently undertaken in 2014 by WWF-Pakistan in Jamshoro, Dadu, Thatta, Sukkur, Dokri, and Badin districts with support from the "Climate and Development Knowledge Network" (CDKN) and the "global change SysTems for

> Analysis Research and Training" (START). WWF-Pakistan also created a class of master trainers in aquaculture techniques in Thatta and Sanghar.

> The research has helped identify the most cost-effective intervention for a given sector, or, that it has helped target interventions where they are needed the most, you will still need to undertake "mainstreaming", which is still in its infancy in Pakistan as re-

gards sustainable development. The term refers, in our case, to creating an enabling policy environment and coordinated actions among concerned state departments and agencies, after persuading them of linkages between climate change adaptation and disaster risk reduction investments, on the one hand, and development planning, on the other. New laws, policies, budgets, steering bodies, action plans, strategies, are all examples of mainstreaming, as are inserting clauses to be followed into existing policy instruments, including Pakistan's Planning Commission 1 (PC-1) development spending proposals.

STUDY HIGHLIGHTS

 The CDKN/START funded project titled: "Mainstreaming Disaster Risk Reduction and Climate Change Adaptation in the Indus Ecoregion" (2013-2014) is aimed at enhancing the capacity of planners, practitioners, and policy makers in implementing integrated disaster risk reduction and climate change adaptive measures in livestock and fisheries sectors of Sindh province.

A project study titled: "Assessment of Climate Change Impacts on Indus Ecoregion Fisheries" made use of Pakistan Metrological Department's (PMD) 22-yrs time series temperature and precipitation data covering 6 districts of the Indus Ecoregion (Badin, Dadu, Dokri, Jamshoro, Sukkur, and Thatta). The study focuses, over the period from 1990-2012, on identifying trends in extreme events and identifying "ecosystem based livelihood" practices needed in response. Based on the results of its "extreme event analysis", the likeliest flashpoints for future public investments are Thatta, Dadu, and Jamshoro districts that received the highest monthly average precipitation among the 6 dis-

tricts, resulting in floods in 2010 and 2011 (at 1.2 mm/month Jamshoro and Badin's average rainfall was twice that of Sukkur for 1990-2012). Practices recommended for coping with future disasters and climate impacts include installation of early warning systems and developing emergency plans to avoid damage to fish farms and fishing ports. Costing for future investments may

therefore include procurement of early warning infrastructure/communication devices and training of communities in sustainable aquaculture practices.

A project study titled: "An Application of the Difference in Differences Method to Estimate Livestock and Fisheries Productivity Losses at Manchar and Chotiari" examined the immediate and long-term impacts of disasters on the well-being of flood affected households. Results for Chotiari (Sanghar) and Manchar (Dadu and Jamshoro) indicate that on average floods do not have long lasting effects on consumption, income or assets in either of the two sites. Nonetheless, planners are advised to retain a staggering outcome in terms of the fate of productive assets such as land, but also boats, tractors, and storage facilities, among others: on average, the per household loss for such assets is as high as 50% for flood stricken households at Chotiari. From a policy perspective, the highest income quartile (who typically own such assets and report their loss) is also targeted by small and medium scale enterprise (SME) investments and encouraged to break-out into higher value added segments of production. Should climate/disaster resilience practices be mainstreamed into SME policies for the fisheries sector? The loss figures suggest Chotiari would be a priority location, at least for the high income quartile category of affectees. At Manchar, investments of a different kind – perhaps of a social safety net nature – may be required for losses among low income quartiles which are restricted to consumption and incomes.

 A project study titled: "Political Economy of Climate Change Adaptation in Pakistan: Overview and Analysis

> of Inland Fisheries and Livestock Sectors in the Indus Ecoregion" attempts to fill a policy gap by evaluating current national climate change adaptation and disaster risk reduction policies in context of fisheries and livestock sectors and to identify underlying political, economic, and historic factors that serve as barriers to effective implementation of climate change adaptation and disaster risk reduction measures. A key finding of the

study is that the capacity of government officials, especially at the district/union council level, and stakeholders such as community based organizations active in livestock and fisheries, needs to be strengthened for specific kinds of actions: deputy commissioner notification and use of a "climate adaptation/disaster" fund, design of land use plans, and scaling of practices by building centrally-placed demonstration ponds/rangelands.

An academic article titled: "Building resilience of women through integrated disaster risk reduction and climate change adaptation in rural Sindh" proposes cultural-sensitive and gender focused measures that can assist women in rural communities to lower the risks of climate change impacts and disasters on their livelihoods. These primarily include innovative livelihood measures such as ornamental



fish breeding, dairy farming, and integrated livestock fish farming, as well as, participatory processes such as establishing women led community based organizations and linking women with local buyers so that they can sell they outputs directly at higher returns.

POLICY RECOMMENDATIONS

As concerns mainstreaming, following recommendations will help planners and policy makers successfully integrate ecosystem based livelihood measures into planning and policy documents in relation to climate change adaptation and disaster risk reduction:

IDENTIFY PAKISTAN-SPECIFIC PRIORITIES

As a starting point, planners and policy makers would need to borrow some estimates and findings contained in the present CDKN/START funded studies and apply them to economic sectors such as livestock and fisheries. In order to ensure climate/disaster resilient sectors, agreement on priority measures and locations or jurisdictions must be established.

CONSULT STAKEHOLDERS ON POLICY ISSUES

Until recently, and this is possibly a currently practiced modus operandi, the Government of Pakistan has awarded sectors, e.g., the fisheries sector, a share of fiscal year budgetary allocation proportionate to the sector's contribution to or share in Gross Domestic Product (GDP). This is perverse. It encourages year-on-year increases in production and sales without enhancing replacement or regeneration practices.

Stakeholder engagement, especially among those responsible for fiscal planning in a first instance, is needed to assure years ahead that money is set aside to improve spending on replacement and regeneration of ecosystems such as rangelands, forests, and lakes.

IDENTIFY POSSIBLE ENTRY POINTS FOR MAINSTREAMING

In order to position livelihood issues well within the public agenda, entry points for mainstreaming ecosystem based livelihood measures into development planning need to be effectively identified. A list of possible entry points in Pakistan is presented in Table 1 below:

PLANNING LEVEL	ENTRY POINTS
Federal government	• Vision 2025
	Annual Development Plans
	• MDG/SDG based national develop- ment strategy
	• National budget allocation process or review (e.g. public expenditure review)
	• National statistics (Economic Survey of Pakistan)
	• Monitoring and evaluation documents
Sector ministries	• Sector strategies, plans and policies (e.g. Climate Change Policy, Agricul- ture and Food Security Policy, National Disaster Management Plan)
	• Preparation of sector budgets
	• Public expenditure reviews
Provincial and District authorities	Decentralized policies
	• District plans
	• Preparation of provincial budgets

Table 1: Possible Entry Points for Mainstreaming Ecosystem Based Livelihood Measures into Development Planning of Pakistan



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