

**Community Based Adaptation in Action: A case study of two farming communities in Nugal Valley, Puntland State, Somalia**

**Project Report (Phase II)**

Rural Livelihoods’ Adaptation to Climate Change in the Horn of Africa (RLACC)

**Summary**

This report provides in a brief case study of a successful Community-Based Adaptation (CBA) good practices adopted by two communities in Nugal Valley to mitigate impacts of drought. By clarifying meaning and purpose of CBA, and synthesizing its guiding principles and challenges, the report provides replicable adaptation good practices that communities vulnerable to drought can engage in more thoughtfully and effectively to sustain their livelihood while living in drought prone areas characteristically common in Somalia and other parts of the Greater Horn of Africa (GHA).

Jibagalle and Village Twenty-Two (V22) are agro-pastoralists communities located in Nugal Valley some 22km away from Garowe in Puntland State of Somalia that employ local technology innovatively to pump water from boreholes using solar energy to irrigate their farms and also provide water for their animals.

Drip irrigation increases water use efficiency and energy efficiency for agriculture by reducing the overall consumption of water and energy. Increased efficiency leads to agricultural increased productivity and food security, as crops and fodder for animals are produced per drop of water. Water efficiency in irrigation also reduces the demand for energy (for pumping water) for agriculture. Such innovation has helped the two communities build resilience against drought and its impacts and help to restore environmental flows as a co-benefit.

Collective actions also helped the local community to build resilience against the socioeconomic impacts of drought. The development of resource mobilization, coordination of activities, and information sharing also helped the communities, in this region, to overcome the problem in a collective way.

These initiatives helped farmers avoid economic loss during extreme events like drought, ensured their social well-being and, above all, build strong resilience against similar events that may likely occur in the future.

To be most effective, drought adaption measures should be integrated into the existing community drought management practices (bottom-up) and plans. Government’s policies on drought (top-bottom) should build on community-based approaches to improve the long-term wellbeing of climatically vulnerable groups by encouraging community ownership of locally relevant interventions for sustainability.

Sharing and learning from tangible measures are some of the important parts of drought adaptation. Fore replication and upscaling of best practices, communicating, sharing of experiences and knowledge and cross learning are very important. Public, private and government stakeholders should be consulted prior to decision-making. Recording and documenting traditional knowledges and practices also helps in building location specific adaptation strategies.

**Introduction**

The vast concentration of Puntland’s rural population is located in drought prone areas in which climate-induced resource scarcity is escalating hunger and poverty. Much of the State is in arid and semi-Arid lands, making it relatively unproductive for growing of crops but with nomadic pastoralism as one of the potential source of livelihood. Pastoralists in this part of Somalia are highly vulnerable because of their dependence on rainfed rangeland grazing for their livestock. Pastoral nomadism is the primary way of life for most of the people living in the valley. Goat and camel raising form the basis of the economy, and frankincense and myrrh are collected from wild trees.

Climate change impact has brought with it alterations in climatic risk patterns. Currently, it’s exacerbating more frequent, higher intensity droughts reducing already scare water supplies in the Valley. For a long time, the impact of climate change has undermined development achievements and threaten the food security of communities residing in the area. The sixth Assessment report (AR6) of the Intergovernmental Panel on Climate Change (IPCC) reported a trend towards increasing climate variability associated with more extreme weather events that are likely to have direct effect on rural livelihoods, particularly in the Least Developed Countries (LDCs). Somalia and by extension, the Nugal Valley, would not be an exception.

Lack of water poses a serious threat to the health, wellbeing and livelihoods of agro-pastoralist communities in the Valley. This limits these communities overall economic and social development. Women, elderly and children are particularly the most vulnerable.

Temperature changes and land degradation are also some of the major contributing factors to increased displacement, migration and conflict over land and water resources in the region. For instance, recurring drought cycles have led to increased movement of pastoralists within neighboring countries of Kenya and Ethiopia in search of water and pasture, contributing to inter-ethnic tensions and leading to violent conflict.

As one of the most climate-sensitive sectors, agriculture is under pressure to reduce greenhouse gas emissions and develop sustainable adaptation strategies to counterbalance future impacts of climate change. It is imperative to identify and institutionalize mechanisms that enable the most vulnerable farmers and local communities to cope with climate change impacts.

Community Based Adaptation (CBA) programmes seem most appropriate to promote local adaptation, within a country with weak and lack of coherent framework of national policies. Adaptation involves adjustments to reduce communities’ vulnerability to climatic change and variability. In CBA, attention is given to the development of location-specific adaptation options that can manage future anticipated risks and take bio-physical, socio-economic and socio-cultural factors into consideration. A more systematic and consistent application of already known sustainable agricultural practices may serve as suitable entry point to adapt to and mitigate the impacts of changing climate and environmental conditions

This case study analyzes the resilience of poor and marginalized communities in Nugal Valley to the risk of extreme droughts events. Two typical agro-pastoral communities undertaking local adaptation strategies to mitigate drought exacerbated by climate change. In the first part is the introduction and rationale of the study. The second part presents replicable drought risk management strategies and good practices by the two communities in the context of climate change. It gives synopsis of how the two communities cope with drought phenomena using their endogenous skills, i.e., coping and adaptive capacities and how this deserves attention. The third part gives a brief overview of Community-Based Adaptation (CBA), challenges and how this study is its perfect replica that should be advocated for upscaling in other areas with similar climatic conditions.

Last part gives conclusion and recommendations from the good practices on the coping and adaptation strategies adopted by the two communities which is important for both impact assessment and to estimate adaptations which has occurred, plausible policy development, to advise on or prescribe adaptations.

**Rationale for community-based adaptation**

The rationale for CBA is to strengthen the adaptive capacity of communities most vulnerable to climate change.

The CBA approach emerged from discourses around the climate vulnerable poor, the relative weaknesses of top-down approaches, and relative advantages of bottom-up approaches in strengthening community-level adaptive capacity. To date, a high priority has been placed upon adaptation to climate change – adjustments in natural or human systems in response to or anticipation of climate change risks and impacts, which moderate harm and/or exploit beneficial opportunities. Currently, adaptation occupies a prominent place in global scientific and policy discourses and is seen as an essential means of addressing climate change vulnerability under the United Nations Framework Convention on Climate Change (UNFCCC).

The capacity of poor people to adapt is constrained by a number of factors, including a lack of adequate land, and limited access to productive credit, markets, technology, public services, reliable infrastructure, formal education, networks that allow for collective action and opportunities to gain new knowledge and skills. These constraints often prevent the poor from migrating or adopting alternative livelihoods. Some poor people also tend to live in environmentally risky areas – such as low-lying plains, which tend to be remote from services and information, prone to disasters and economically unproductive. Climate change is seen to threaten the viability of natural resource-based livelihoods, on which many of the population’s poor rely on.

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| Box 1: Geographic feature of Nugal Valley, the case study area.  |
| A major geographic feature is a large shallow drainage basin prone to flooding during the April–June rainy season. It is located in drought prone areas in which climate-induced resource scarcity is escalating hunger and poverty. Much of the area is in Arid and Semi-Arid lands, making it relatively unproductive for both crop and livestock rearing but with nomadic pastoralism as one of the potential sources of livelihood. |

The top-down adaptation advocated for in national policies have failed to cater for the grassroot vulnerable community needs as development tends to be bureaucratic, elitist, costly, and short-lived. Similarly, top-down adaptation efforts to date have reportedly failed to provide adequate adaptation support to those most vulnerable to climate change. Further, a top-down adaptation approach privileges hard infrastructure projects and technological responses to discrete climate impacts, rather than initiatives to strengthen the long-term adaptive capacity of vulnerable groups (Reid, 2014).

Bottom-up approaches on the other hand seek to improve the long-term wellbeing of climatically vulnerable groups by encouraging community ownership of locally relevant interventions. They are observed to have the potential advantages of reducing costs, enhancing participation of local stakeholders, mobilizing local knowledge, decreasing administrative burdens, improving local accountability and transparency, and improving outcomes for targeted populations.

**Guiding principles of CBA**

A broad approach yet concise overview of the guiding principles of the CBA is provided, based on the case study analysis and informal interview held with agro-pastoralists and experts in the study area. CBA uses the principles of bottom-up and participatory adaptation to amplify local voices in decision-making processes and support local solutions to self-identified problems. It is defined as a community-led process, based on communities’ priorities, needs, knowledge, and capacities, which should empower people to plan for and cope with the impacts of climate change.

CBA policies and interventions reflect on local values, priorities and conceptions of wellbeing – as opposed to those of external actors.

**Overview of droughts: indicators of variability and extreme climate events**

Climate change effects have become increasingly evident worldwide. The Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment (AR6) report of 2021 for Policy Markers noted that 2020 was the hottest year recorded since 1992. Rising temperatures cause long dry seasons that result into various forms of drought. Droughts cause water scarcity that impacts crops, livestock, or extra-agricultural activities, and generates conflicts around access to resources. Extreme weather events due to climate change have received increased attention in the last few years due to the large loss of human life and exponentially increasing costs associated with them. Droughts affect a large number of people who are forced to migrate to urban centers as IDPs seeking for assistance. Droughts are among the most immediate impacts of climate change in Somalia.

**Communities’ adaptation strategies**

Communities’ adaptation responses to extreme climatic events in Puntland State and their corollaries (droughts, floods and water scarcity) vary across one place to another. They change their activities, sink wells near the river bed (lagger), purchase water, use borewell water, or move elsewhere with their animals in search of greener pasture.

Contrary to this, communities’ adaptation strategies to droughts among Jibagalle farming community entails sinking of boreholes and use of solar to pump water for irrigation. Adaptation strategies like migration, changing activity, and relief-seeking are similarly common in Somalia but shunned by Jibagalle farming community as they claim such measures are not sustainable.

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| Box 2: Impacts of 2010/2011 drought on the study communities  |
| A case study of Jibagalle farming community showed that the 2010/2011 El Nino related drought significantly reduced the cattle of communities in this valley. About 80% of the people lost all their cattle, and they migrated to regions around the Ethiopian highlands. During this period, they developed some extra-pastoralist activities such as fishery, farming or other activities, and trade. |

Based on an examination of communities’ adaptation strategies, we recommend that these strategies be augmented through a focus on training and/or capacity-building, and diversification of livelihoods. A preparedness programme that includes forecasting of extreme events, information on adaptation strategies, and building human resilience would help communities deal with the impacts of extreme climate events.

Local communities adopt coping and survival strategies to prepare for or respond to drought risk situations long before any outside assistance would (or would not) arrive. Having experienced damage and loss, they are interested in protecting themselves from climate risks through community-based disaster preparedness and mitigation. Empowering communities toward the use of viable adaptation practices for better management of climate change risks is essential for further improving livelihood adaptation and enhanced community resilience. The study found that local communities do establish their own learning and action platforms to increase their understanding and ability to diagnose social issues that play a catalytic role in mainstreaming and up-scaling climate risk management and potential adaptation options.

The entry point for discussion with communities was the consensus that a broader range of adaptation options adds value to existing coping strategies at the community level. The process of social mobilization appeared essential and effective for (i) motivating farmers and farmer’s groups to collaborate in a more organized way, (ii) catalyzing interest and awareness of climate variability and change and their impact on agriculture, and (iii) mobilizing self-initiative to find out and implement adaptation options locally. The process encourages community groups to develop relations with other stakeholders in order to gain assistance, administrative backup and other need-based supports.

Increasing the climate-risk preparedness of pastoralists across the State requires proactively improving access to good quality water and forage. Development of farms with fodder reserves and alternatives for fodder/feed during dry and lean seasons has led to a large number of animal survival during dry conditions.

**A brief overview of Community-Based Adaptation**

Community-based adaptation (CBA) is generally described as a bottom-up and strengths-based approach to strengthening community-level adaptive capacity, focused upon vulnerable communities[[1]](#endnote-1).

Community-Based Adaptation (CBA) is considered by many to be a ‘vital approach to the threat climate change poses to the poor.’[[2]](#endnote-2) However, no concise yet comprehensive overview of CBA exists. This section of the study report seeks to fill that gap by providing an overview of CBA, its core principles and challenges.

**CBA approach**

The aim of CBA is to support the adaptation needs of ‘communities most vulnerable:’ vast numbers of poor and marginalized people living in high-risk environments, primarily in developing countries. The vulnerability of communities is a function of their low capacity to adapt and cope, as well as their exposure and sensitivity to climatic variability and change, such as drought in this case study. These are often driven by concerns over the social injustices of climate change, since ‘those most vulnerable’ tend to contribute the least greenhouse gas emissions. It is considered an imperative that vulnerable communities are provided with adaptation support that is planned, participatory and specific to local contexts.

In some instances, CBA can be integrated into government-led policies and programmes (bottom-up approach). Being a Community of Practice (CoP), CBA aimeds at share knowledge, strengthen connections, build capacity and inform policy and practice. Moreover, it is receiving increased attention even at the international level, including at the United Nations Framework Convention on Climate Change (UNFCCC) Conference of the Parties (COP).

**Principles of CBA**

The overall aim of CBA is to empower communities to prepare for and respond to climatic stress by facilitating adaptation that is inclusive, community-driven and sustainable. In practice, this is achieved by enabling local communities to plan for the impacts of climate change and determine the methods and goals of adaptation. The aim is to build upon existing adaptive capacities, which consist of existing local knowledges, networks, practices, skills, technologies, expertise, norms and institutions—as well as peoples’ intrinsic motivations, aspirations and goals. The process seeks to build the overall capacity of communities regardless of whether or not specific climate change impacts manifest.

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| Box 3: Case study of Jibagalle community in Nugal Valley, Puntland State, Somalia |
| The dominant vulnerable groups are small and marginal agro-pastoralists, located in Nugaal District – south east of Garowe – Puntland State of Somalia. The community employs CBA to graze their animals throughout the year in a drought prone area without losing their animals. Geophysically, the area is highly vulnerable to drought, and excessive evapotranspiration has been an added phenomenon.The study found that climatic conditions contribute towards the vulnerability of their livelihoods. Climatic factors are unfavorable and drought strikes regularly, but with local capacities practices, skills, technologies, and intrinsic motivations are able to manage major threats to their livelihood. There are no state-oriented adaptive responses that would help in reducing their vulnerabilities, but it is the improved local settings and physio-graphic situation that allows for their animal survival in hash climatic conditions. The community supplement with irrigation facilities to reduce the impact of drought to some extent. The study identified some local practices and perceptions towards risk management. For instance, the community believes that drought is an act of God and there is nothing that can be done about it.Several adaptive practices or coping measures are put in place by the community to overcome drought impacts. In this case study, the adaptive capacities and actions to local cultural contexts of the people have improved while preserving local autonomy acceptable to local community. |

Ideally, CBA is a community-led and driven process rather than something done for and imposed upon local community. The processes of assessment, planning, intervention and evaluation must be participatory—including all sections of local society, and incorporating peoples’ diverse priorities, concerns, perspectives and cultures. CBA practitioners must aim to tailor adaptation strategies and actions to local cultural contexts, in order to preserve local autonomy and produce endogenous outcomes that are relevant and acceptable to the local people.

This good practice needs to be scaled-out for wider impact rather than remain as an isolated activities within a community. This will require communicating local needs to higher levels of decision making by turning such small-scale projects into large-scale endeavours and/or expanding local adaptations over a large geographic area. Such successful CBA initiatives should be mainstreamed or integrated into national adaptation and development schemes. Mainstreaming expands the reach of CBA in order to benefit a greater number of people. It also allows the needs of the most vulnerable to be reflected in subnational, national and international adaptation programs, policies, plans and investments.

**Challenges in practice**

In principle, the CBA approach aspires to be inclusive, empowering and context-specific— supporting the adaptation needs of those most vulnerable to climate change. However, these aspirations are difficult to achieve in practice. In this section, we highlight some of the key challenges CBA has and also drawing analogy to the outcome of the case study conducted in the Nugal Valley.

**Misperceptions of ‘community’**

The term ‘community’ is often used in a way that implies a cohesive group of people with shared cultures, values, aspirations and goals. However, local populations tend to be ‘characterized as much by internal differences (in the priorities, needs, vulnerabilities and capacities of the people) as by commonalities.’[[3]](#endnote-3) They also tend to have uneven, and often unfair, distributions of power. It is suggested that ‘communities’ should be seen as loosely connected social and cultural groups composed of a diverse set of beliefs, values, identities and factions.

**Achieving meaningful participation**

It is challenging in practice to achieve inclusive, fair and meaningful participation of local peoples— particularly the poorest and most marginalized. The concerns, priorities and perspectives of those less powerful tend to be dominated by the voices of the powerful elite. Often, ‘participatory’ decision-making tends to reflect the ‘needs’ of the elite, who disproportionally capture benefits from interventions tailored to the poor and vulnerable. Adaptation planning is also complicated by conflicting and competing priorities and short-term interests. A lack of ‘social capital’ can inhibit people from coming together to make collective and democratic decisions, and to take collective actions. Furthermore, the rhetoric of ‘participation’ is often reduced in practice to a means for external institutional actors to legitimate and build public acceptance of pre-planned policies and interventions.

**Subordination of local perspectives**

In theory, CBA is an attempt to break away from ‘top-down’ discourses of climate change vulnerability and adaptation—allowing for local peoples to determine adaptation agendas. However, the ‘scientific’ knowledge systems that dominate the international adaptation community tend to frame adaptation as ‘additional’ to development— techno-scientific responses to particular climate- related stresses. Such top-down perspectives risk subordinating local perspectives, priorities, knowledges and cultures, inhibiting local self-determination and limiting meaningful participation.

**Issues with focusing on the ‘local’**

CBA’s focus on local adaptation risks downplaying the way structures, policies and actions outside communities influence how climate impacts are experienced in specific places. In addition, focusing too much on small-scale, bottom-up, local, project-based activities may limit the potential to provide adaptation support to the vast populations of climatically vulnerable populations in developing regions.

**Insufficient and uncertain financing**

Developed countries have always committed during COP meetings to mobilize US$100 billion annually to address the needs of developing countries in responding to climate change. During COP 26 held in Glasgow, 1 -12 November 2021, developed countries renewed their commitment to this discourse, however, even if this is achieved, this level of financing for adaptation is considered insufficient to meet the adaptation needs of billions of vulnerable people.[[4]](#endnote-4)

**Lack of distinction between CBA and development**

CBA interventions often resemble development actions, since addressing vulnerability through strengthening adaptive capacities often requires addressing existing ‘development deficits.’ This lack of distinction makes it difficult to identify good CBA practice, attract donor funding and align projects with adaptation financing requirements.

**Integration into government policies and programmes**

Experiences suggest that mainstreaming CBA into national development planning can be difficult—particularly in Somalia where there is weak system of government with no policies enforcements. This is particularly true in cases where there is lack of political systems, rapidly shifting agendas and a lack of political will. Mainstreaming is further inhibited by a lack of coordination and collaboration between and within government. In addition, the staff of State governments sometimes lack the required technical expertise, funds, resources and labour capacities to integrate CBA into government policies.

**Sensitivity to local cultures**

Local cultural factors may contribute to communities’ vulnerabilities, and may inhibit both planned and autonomous efforts to strengthen adaptive capacity. For example, local gender norms may limit opportunities for women to contribute to participatory decision-making processes, and may constrain their ability to build resilience to climate stress and adopt alternative livelihoods. Engaging with cultural particularities is complex and challenging, and requires CBA practitioners to remain empathetic, sensitive and responsive to local cultures. In many instances, peoples’ worldviews, beliefs, values and motivations can be a resource that CBA practitioners can engage with to enable adaptation.

**Conclusion**

Community-Based Adaptation aspires to be an effective, socially just and sustainable approach to support the adaptation needs of the climatically vulnerable poor and marginalized. However, as with any development paradigm, there are barriers that constrain the realization of ‘best practices.’ Attaining a robust and shared understanding of the principles of the approach, and reflecting critically on its key challenges, provides an opportunity for ongoing improvement. Moreover, it allows us to engage in debates about the ethics and efficacy of working with local peoples, to consider how lessons learnt in practice can inform theory, and conversely, how theory can influence practice. As a relatively new, emerging and expanding paradigm and practice, we suggest that further research and critical debate is needed to continue to improve the effectiveness and fairness of the way that the adaptation needs of those most vulnerable to climate change are met.

**Notes**

1. Patrick Kirkby, Casey Williams & Saleemul Huq (2017): Community-based adaptation (CBA): adding conceptual clarity to the approach, and establishing its principles and challenges, Climate and Development, DOI: 10.1080/17565529.2017.1372265 [↑](#endnote-ref-1)
2. Huq, S. & Reid, H. 2007. Community-Based Adaptation: a vital approach to the threat climate change poses to the poor. IIED Briefing Paper. International Institute for Environment and Development (IIED). [↑](#endnote-ref-2)
3. Miyaguchi, T. 2011. Community-based adaptation to climate change: the concept, challenges and way forward. SANSAI: An Environmental Journal for the Global Community, 5, 21-35. [↑](#endnote-ref-3)
4. World Bank 2010. Economics of Adaptation to Climate Change: Synthesis Report. Washington, DC: The World Bank. [↑](#endnote-ref-4)