ASSAR

ADAPTATION AT SCALE IN SEMI-ARID REGIONS

2014–2018

EFFECTIVE ADAPTATION MEANS DIFFERENT THINGS TO DIFFERENT PEOPLE

AN ASSAR CROSS-REGIONAL INSIGHT

Different framings of effectiveness will influence the entire adaptation process, from identifying the vulnerabilities that adaptation aims to address, to determining who benefits and who is left behind, which adaptation actions are chosen and funded, and how they are implemented. Justice, governance, community-based adaptation, and sustainability framings are particularly important for ensuring outcomes that benefit vulnerable communities in semi-arid regions. But in any adaptation process, considering multiple framings is critical for facilitating effective, equitable and inclusive adaptation that is actively cognisant of the marginalised and most vulnerable. A clear exploration and articulation of effectiveness, from multiple framings, can guide organisations in setting adaptation priorities and outcomes, in defining criteria for funding adaptation projects, in assessing proposals, and in evaluating implementation.

ASSAR's focus on effective adaptation

Current and future climate change necessitates urgent adaptation action, especially in semi-arid regions across Africa and India which are home to millions of people, many of whom are acutely vulnerable to climatic and non-climatic risks. While researchers, practitioners and funders converge to accept the urgency for adaptation, there is less agreement on what this adaptation should entail. What outcomes should adaptation deliver? Which options should be implemented? Who should benefit? Where should adaptation be prioritised? What rules and institutional arrangements should apply? In ASSAR, we examined what 'effective adaptation' can mean for different disciplines, perspectives and actors, and explored the implications of these different meanings for adaptation in practice. Our findings are based on a review of the theoretical advances in adaptation and related research, as well as primary case studies across semi-arid Africa and India.

KEY INSIGHTS

ASSESSING "EFFECTIVENESS" FROM MULTIPLE FRAMINGS CAN ENHANCE THE SUCCESS OF ADAPTATION, AND RESULT IN A BETTER SET OF EXPECTED OUTCOMES

Defining and measuring effectiveness in adaptation is complex and challenging. It is difficult because climate change is a fast-moving target, delineating climate adaptation from development interventions is difficult, and there is low agreement on the indicators to measure adaptation. Critically, what is effective today may not be effective tomorrow, and present adaptation interventions may have trade-offs either in other places, for other people, or in the future. However, it is of utmost importance to plan for 'adequate' and 'effective' adaptation in a post-Paris-Agreement world. We argue that assessing effectiveness from different framings will enhance the success of adaptation, by taking a multidimensional approach, avoiding unintended consequences, and through a greater awareness of the assumptions that come into play when defining effectiveness.

Different ways to think about effectiveness

We have identified **eleven conceptual framings** that can influence how adaptation effectiveness is defined and measured. These framings often overlap, but at their core have distinct primary principles. For each framing, we reviewed the underlying thinking and epistemological origins, and show examples of how the framing has been used in adaptation theory and in practice. We then distilled each framing into a "principle for effective adaptation". These principles combine to provide a proposed list of issues that anyone engaged in adaptation should reflect on when designing, funding, implementing and evaluating an adaptation action.

Adaptation should minimise costs, and maximise benefit

Drawing on a utilitarian cost-benefit farming, adaptation is deemed effective if it is efficient. Usually framed in terms of financial cost, and the number of people who benefit, it has also been applied to look at minimising other costs, such as implementation complexity, and delivering multidimensional social and environmental benefits, as well as co-benefits with mitigation.

Adaptation should reduce risk and vulnerability

Drawing from a long history of disaster, food security and development studies, adaptation to climate change is successful if exposure and sensitivity to climate risks is reduced, or adaptive capacity is enhanced, with a particular focus on the most vulnerable. Adaptive capacity can be enhanced by focusing on five capitals (natural, physical, social, financial and human) which will result in effective adaptation to climate change.

Adaptation should be oriented toward socially-just, inclusive, and equitable processes and outcomes

This approach to effective adaptation focuses on three main aspects of justice, drawing from the environmental justice literature. The quest for distributional justice is to essentially understand who benefits and who loses in society, while procedural justice focuses on the fairness in the processes by which decisions are made. The idea of recognition justice tries to understand whose needs count and which concerns matter, when it comes to climate change adaptation.

Adaptation actions should take into account unintended outcomes, and explicitly look at potentially maladaptive consequences

A maladaptation lens forefronts the idea of acknowledging how adaptation actions may have cross-scalar, long-term impacts where an intervention could inadvertently increase GHG emissions, disproportionately burden the most vulnerable or increase vulnerability, have high opportunity costs, reduce future incentives to adapt, or create path dependency.

Adaptation actions should be economically, ecologically and socially sustainable

Drawing on ideas from sustainability science, this framing considers adaptation to be effective when it meets economic, ecological and equity goals (the three pillars of sustainability) with an explicit focus on understanding longer-term, cross-generational viability of adaptation actions. This thinking has led to the term 'sustainable adaptation' which attempts to bring the goals of sustainable development and effective adaptation together.

Adaptation should be oriented towards achieving good governance across scales

Governance arrangements that support greater participation, decentralisation, and inclusion within and across scales will support better definition of adaptation needs and options, as well as more effective implementation. The complexity of governance has been measured using indicators for transparency, accountability, participation, inclusion, knowledge sharing, flexibility, political leadership, technology, funding, and stakeholder engagement.

Adaptation should support achievement of material and subjective wellbeing goals

Drawing from the capabilities approach, a wellbeing framing focuses not only on material aspects of wellbeing, but also on subjective wellbeing. In doing so, it goes beyond structural and distributional aspects of assets and capitals that are possessed by individuals, to aspirations of what people really want to do or be. This allows for adaptation that not only reduces vulnerabilities, but also works towards supporting achievement of people's aspirations for "a good life" in the face of climate change.

Communities are central to adaptation processes, and co-creation/co-production of approaches ensures more effective and sustainable adaptation

Drawing from bottom-up, participatory development approaches, community-based adaptation (CBA) encapsulates the critical role of communities in formulating, implementing and maintaining local adaptation. A CBA lens can help forefront communities in defining adaptation priorities, articulating expected outcomes that deliver on aspirations and needs of the marginalised. It can also build the agency of vulnerable communities, highlighting the importance of capacity building, co-production of solutions, empowerment, and institutional and financial devolution.

Adaptation should increase resilience so that systems have the ability to bounce back from climatic shocks and adapt to climatic changes

Resilience thinking has its roots in the ecological sciences in that it acknowledges ecological limits to adaptation. While parallels and contrasts have been drawn to the concept of vulnerability, the ability to bounce back from shocks and stressors is really what makes systems resilient, and enhanced adaptive capacity can both decrease vulnerability as well as increase resilience. Factors that confer resilience to systems are diversity, functional persistence, and self organisation. Spatial and temporal trade-offs, and trade-offs between objectives, become relevant when thinking of resilience in human-environmental systems.

Adaptation should invest in ecosystem management and restoration to reduce climate change impacts on ecosystem services, and hence on society

An ecosystem-based approach to adaptation (EbA) highlights the critical role ecosystem services play in supporting local adaptation. For example, conserving water resources, maintaining soil fertility, and protecting forest cover can build natural capital and contribute to well-functioning socio-ecological systems. Given that a large proportion of vulnerable populations are dependent on natural resource-based livelihoods, an EbA lens focuses on ecosystem functionality and how it can be enhanced to support these livelihoods.

Adaptation as a process that fundamentally alters how systems operate

A transformational adaptation framing highlights the need to fundamentally reorient human practices in the face of climate change, and overtly challenges the social, political and economic structures that generate vulnerability to its impacts.

IMPLICATIONS FOR ADAPTATION IN PRACTICE

- **Different framings privilege certain aspects of effectiveness**. For example, a justice and equity framing tends to forefront thinking about who benefits from adaptation, and who is involved in adaptation processes. Contrastingly, an efficiency framing that tends to use cost-benefit analyses to define what is effective hinges on utilitarian ideas of the greatest good for the greatest number, reducing costs and maximising benefits, while ignoring differential aspects of vulnerability.

- The eleven **framings can be used as guiding principles** for adaptation, ideally in a pervasive manner, but at least in any relevant part of a process. For example, to define adaptation objectives and outcomes, to address equity, to design and implement governance arrangements, to preempt unintended negative outcomes, and to understand and address deeper political-economic drivers. Keeping these principles as a checklist during project conceptualisation can help forefront intangible but critical aspects of adaptation such as a focus on building flexible, robust and inclusive institutions (good governance framing), or prioritising bottom-up, people-oriented solutions (drawing on the CBA framing). Adaptation financing facilities can use these principles to inform their guidelines for funding, and in the evaluation of the projects they fund.

ASSAR CASE STUDIES

We provide a list of illustrative cases from the semi-arid regions to showcase that meeting multiple aspects of effectiveness is possible.

CASE STUDY 1:

GROUNDWATER AND RURAL LIVELIHOODS IN INDIA

In India, where 34% of the land area is semi-arid, and 50.2% of the population is engaged in agriculture for at least six months of the year, groundwater exploitation has played a central role in expanding irrigation to reduce sensitivity to seasonal drought, leading to higher agricultural productivity and household wellbeing. We studied the role that groundwater played in intra-household relations, particularly gender dimensions such as the division of labour within the household, and vulnerabilities and risks across identities.

In our study of two villages in Tamil Nadu we found that the expansion of groundwater irrigation has led to dramatic shifts in cropping, with cash crops replacing rainfed grain such as millet. This adaptation had benefits and disbenefits. Working on cash crops placed more physical burden on women, but also improved wages for poorer women labourers as demand for labour increased. While groundwater improved some wellbeing outcomes in the short run, in the long run it also increased vulnerability: borewell failures were exacerbated by poor awareness of government support, excessive bureaucracy, and an inefficient delivery system that led to a greater reliance on private contractors, and informal sources of credit. The socially-differentiated implications of groundwater exploitation also emerged: while men competed with each other to dig deeper wells, and felt an enhanced sense of masculinity, women's assets were often used to finance borewell digging, resulting in financial insecurity and marital conflict. This case brings to light temporal and spatial trade-offs at different scales of the household, community, village and ecosystem. Groundwater dependence can lead to maladaptive outcomes that undermine the resilience of systems, and increase vulnerability of some members of the village, while successful borewells lead to bumper crops, resulting in unequal and unjust outcomes.

A better governance framework would help to strengthen the resilience of Tamil Nadu's stressed groundwater system. Although the Groundwater Regulation Bill was passed in 2003, the act was repealed in 2013, and no further progress has been made on governing groundwater. Understanding how groundwater differentially affects different social groups can help avoid inequitable outcomes.

CASE STUDY 2:

NAMIBIA'S NATIONAL DROUGHT POLICY

We analysed Namibia's multi-level governance arrangements through which the National Drought Policy was developed and implemented, and the extent to which the policy targeted and supported the wellbeing aspirations of vulnerable households in the Omusati region.

By looking at the governance structures we highlighted how the policy was driven by a few key voices in government ministries, and stakeholders from the agriculture and environment sectors. While rural communities were the primary beneficiaries of the policy, they were seldom consulted.

The policy focused on addressing the sensitivity of agriculture and water supply to drought, and aimed to support rural communities in reducing their vulnerability to drought through income diversification, sustainable land management, and integrated water resource management.

The policy also clearly distinguished between alleviating food insecurity due to chronic poverty and due to drought, noting that poverty should be addressed through separate mechanisms.

The implementation of the policy is fragmented across government departments, meaning that different components of work on risk reduction are not well coordinated, and there is little flexibility when interventions are implemented. While the aim of the policy was to enhance adaptive capacity and reduce vulnerability of communities, appropriate mechanisms were not put in place; on the contrary, government continues to provide food relief to communities despite this strategy not being cost effective in the long term. Also, participation by communities in decisions and strategies at the local level is patchy. There are local-level platforms, such as the Constituency Disaster Risk Management Committee, where community needs can be discussed, but these committees do not have autonomy to make decisions about drought actions.

We also surveyed the social- and material-wellbeing statuses and aspirations of households in several villages in Omusati. We found both alignment and mismatch of some people's wellbeing aspirations with the drought policy and the way it was implemented, indicating that the policy is only partly meeting the needs of communities. Further we find instances of unintended consequences, where social grants and drought relief build a dependency on the state and undermine individual adaptive capacities.

Our analysis demonstrates how it is important to use several lenses when designing and implementing adaptation actions, namely: wellbeing, maladaptation, CbA, governance, justice and equity, and the consideration of longer- and shorter-term financial costs and benefits.

CASE STUDY 3:

MIGRATION AS ADAPTATION

Migration from rural to urban areas is often identified as an adaptation strategy that helps people diversify away from agrarian livelihoods. Across Africa and India, ASSAR examined the drivers and outcomes of migration to understand the role of climatic risks in driving movement, and whether migration builds adaptive capacity.

In India, we found that rural to urban migration helps people move out of certain climate-sensitive sectors such as farming, but can expose them to new risks, such as precarious and unsafe working and living conditions. Using a rural-urban continuum approach highlighted how risks and responses are connected and shift spatially, and can lead to unintended consequences, or even maladaptation.

Overall, across four cases - in India, Kenya, Ghana and Namibia - we found that household risk and response portfolios vary seasonally and over longer timescales, leading to equally varying household and intra-household wellbeing and adaptive capacities. We found that migration outcomes also flow across geographies, thus remittances in the urban landscape often financed borewell digging in the rural landscape, with critical sustainability implications. Crucially, we found that migrating to cities might increase material wellbeing but it can reduce subjective wellbeing (perceived quality of life).

Our analysis demonstrates that a lens that forefronts dynamics across spatial and temporal scales helps to highlight the tensions and trade-offs inherent in livelihood choices and outcomes. Further, a wellbeing lens teases out what effectiveness can mean for men and women from within the same household, and how it can differ materially and subjectively.

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This work was carried out under the Collaborative Adaptation Research Initiative in Africa and Asia (CARIAA), with financial support from the UK Government's Department for International Development (DfID) and the International Development Research Centre (IDRC), Canada. The views expressed in this work are those of the creators and do not necessarily represent those of DfID and IDRC or its Board of Governors.

Design and layout:
Rothko Brand Partners
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