

Case study summaries

Integrating indigenous knowledge in climate risk management in Kenya

The client CCAA PAR project, led by ICPAC, is aiming to help poor and vulnerable communities in western Kenya to adapt to climate change, using both modern climate science and the indigenous knowledge developed by local communities themselves. The assumption is that integration of formal and indigenous forecasts would enhance the resilience of vulnerable groups to the negative impacts of climate change.

The aim of the RPA case study is to help maximise the impact of the research project by investigating, *first*, who are the actors in climate prediction and adaptation. *Second*, what are their interests and existing discourses? And *third*, how could researchers ensure their findings shape a supporting comprehensive policy framework? Preliminary findings indicate that despite the important role that indigenous knowledge (IK) plays in helping communities cope with climate variability, it remains on the fringes of policy debates. In general the main actors in the climate change policies such as the Ministry of Environment and Mineral resources do not rank IK highly in formulating their climate change strategies.

There is a general perception that western science is superior to indigenous knowledge in generating climate information. Furthermore, the knowledge is rather diffuse and in most cases it is a preserve and a privilege of a selected few people and is not shared openly. As a first step towards integrating IK into climate risk mitigation strategies, IK ought to be demystified and popularised among the key actors. The results of the PAR project which have shown a very good convergence between predictions based on Western science and IK would be a good starting point. The ongoing processes of developing climate change strategy offers opportunity to introduce IK into the policy process.

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Client project: <http://www.africa-adapt.net/aa/ProjectOverview.aspx?PID=PUXVdbXh9bM%3d>

Enhancing Adaptation to Climate Change among Pastoralists in Northern Kenya



RPA project stakeholder mapping exercise in Katilu village, Turkana District, northern Kenya (Photo: KIPPRA)

and an assessment of the constraints on bottom-up policy shifts have begun to reveal relevant and appropriate policy spaces where policy processes could be more responsive to the adaptation needs of

The aim of the client CCAA PAR project has been to identify constraints and opportunities for the integration of local evidence in agro-pastoral livelihood systems into formal policy-making processes. The study was carried out in two sites in Turkana District in Northern Kenya, led by researchers at ITDG and NEMA.

The RPA case study maps the national and local adaptation policy contexts as they relate to pastoralism and traditional adaptation strategies. Pastoralism itself has been an adaptation strategy in its own right, but is increasingly becoming inadequate in the current climatic context, and has been undermined by inappropriate natural resource management policies. Analysis of institutions that drive change in policy and practice within this context

pastoralists. A range of policy influencing pathways have been identified, from strengthening the District Steering Group Committees, to collaborative enforcement of existing regulations on water resource use, to research feedback forums and community radio stations. These would likely give greater recognition and support for sustainable forms of land tenure and resource management, including a supportive framework for migration (transhumance), a critical strategy for securing water and grazing needs during drought.

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Adoption of a climate based malaria epidemic prediction model in Kenya

The client CCAA project is led by the Kenya Medical Research Institute (KEMRI). Its main objective is to transfer the Malaria Epidemic Prediction model (developed by KEMRI¹) to end users in Kenya and other countries in East Africa and to sensitize major national level stakeholders. Researchers behind the model have so far had a high degree of success in integrating its lessons in government policies, but challenges remain.



Photo: A. Githeko/KEMRI

The RPA case study investigates the possible strategies required to link the model to policy processes in Kenya to increase the chances of its widespread adoption. The objective of the case study is to investigate the policy development process including major actors who facilitate or serve as obstacles to the adaptation of policy, in order to identify pathways for effective policy influence by the MEPM - PAR Researchers, and ultimately to come up with an Engagement Plan which can be used by the client CCAA researchers to navigate their outputs through the policy process. Among others, the study will try to determine entry points of the interventions which will facilitate the PAR project towards effective delivery of their messages to the relevant policy makers and other stakeholders. Significant emphasis is put in the case study at present on the need for positive cost-benefit analysis to demonstrate its advantage over existing models. The analysis revealed gaps in full information about the models effectiveness and applicability and need for upscaling being communicated sufficiently to key actors, despite very positive recognition for this utility by those familiar with it.

One limitation of the model itself is its applicability to certain ecosystems. The WHO has stated a need for certain weaknesses to be overcome before they proceed with it. Various strategies that could have improved awareness and uptake have been identified, such as collaborative research and greater involvement of policy makers from the outset, or packaging the outputs in a way that is tailored more carefully to target audiences. The Community Policy Strategy as implemented by Great Lakes University of Kisumu (GLUK) is one channel to strengthen bottom-up policy influence through strong community-based and tangible experiences of implementation, which sensitizes both communities and authorities, alongside other forms of 'invited', 'practical' and 'conceptual/discursive' policy spaces.

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¹ The model, developed in 2001, uses climatic factors to detect an epidemic 2-4 months before its occurrence, thus providing sufficient lead time for interventions. It combines climate observation with medical research to better predict the onset of highland malaria outbreaks in Kenya, Tanzania and Uganda

Client project: <http://www.africa-adapt.net/aa/ProjectOverview.aspx?PID=PjqEr7vaKTW%3d>

Transferring the malaria epidemic prediction model to Tanzania

The client CCAA project is the Tanzanian component of the project described in case Study 3 above. In Tanzania the project is led by the National Medical Research Institute (NIMR). Transferring the model developed in Kenya to Tanzania involves sensitization of major stakeholders on the effectiveness and availability of the model, as well as enhancing the capacity of policy makers to be able to use the model to develop useful early warnings of epidemics, and the capacities of vulnerable communities and groups to respond to warnings.

Building on experiences from the Kenya project described above, the RPA case study looks at the policy context for the model in Tanzania. The study has mapped the key actors and policy spaces in the health and meteorological sectors in Tanzania and the ways in which they constrain or facilitate policy development in these areas. In particular, the study is assessing the positionality of stakeholders towards the adoption of the model as an adaptation policy approach. Better coherence and coordination between climate change adaptation policy processes (NAPA) and existing Malaria prevention programmes and those working with the model will be critical to shifting these positions. Presenting the model in an accessible way in the right fora to the appropriate actors both at the local level (District Councils are important) and amongst national institutions up to Parliament are critical pathways to influence. Establishing the effectiveness of this model vis-a-vis other competitive models is also being highlighted as a critical strategy towards uptake. Further analysis on the more dynamic challenges to pursuing particular pathways is taking place including how the uptake and implementation of the model ensures recognition for and sensitivity to the knowledge and practices of communities for longer-term uptake and effectiveness.

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Client project: <http://www.africa-adapt.net/aa/ProjectOverview.aspx?PID=PjqEr7vaKTW%3d>



Adoption of weather information generation, packaging and dissemination

This case study builds on the client CCAA PAR project entitled *Managing Risk, Reducing Vulnerability and Enhancing Agricultural Productivity under a Changing Climate* which is being implemented in Ethiopia, Kenya, Sudan and Tanzania. In Tanzania, this project is led by PAR researchers from Sokoine University of Agriculture (SUA). Their study areas are in the semi-arid areas of the western Pare in Same District, Kilimanjaro Region. This project is founded upon the recognition that the way weather information is generated, packaged and disseminated has not been adequate in terms of providing farmers with relevant and timely information. Linking local indigenous rain forecasters with the Tanzania Meteorological Authority (TMA) has been an additional but significant dimension of the PAR project.

Focusing on the adoption of weather information, the RPA case study maps agricultural, meteorological and other stakeholders in Tanzania who would facilitate the policy development process for the adoption of the weather information generation, packaging and dissemination approach. The project has already

brought together a great many stakeholders in Same District, resulting in a decision-making forum for compiling forecasting information and packaging it alongside guidance on farming related decision-making. However, with the exception of the Food Security Division of the Ministry of Agriculture and Food Security and Cooperatives, WWF and TMA, the rest of the stakeholders consulted for this case study were not aware of the existence of the PAR initiative being implemented. Many expressed their wish that it would be useful for them to be involved earlier on in the whole process.

This case therefore assesses the effectiveness of the PAR approach to influencing change of perceptions of, and behaviour associated with, adaptation to climate change through workshops, farmer field schools (FFS), capacity building, communication and networking, scenario building, and the development of an intelligent decision making tool. From this, an analysis of key messages coming out of the project, and of the roles of different actors in realizing change, an engagement strategy seeks to set out existing and new policy spaces and who to target and how, with relevant and appropriate messaging. There is a focus on invited and bureaucratic spaces, with an emphasis on strong pilot projects to demonstrate model effectiveness. The strength of the narratives around agriculture as the backbone of the Tanzanian economy provides space for this type of adaptation initiative to gain recognition and uptake, particularly with the current drive on 'Kilimo Kwanza' ('Agriculture First') campaign.

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Mainstreaming agrometeorological advisory services into the national agricultural policy in Kenya

The client CCAA PAR project is the Kenyan component of the project *Managing Risk, Reducing Vulnerability and Enhancing Agricultural Productivity under a Changing Climate* (see case study 5 above). The project is implemented by Kenya Meteorological Department in collaboration with KARI, MoA, ICRISAT and local community which has focused on agromet advisory services through forecast bulletins. Provision of agromet services requires an enabling policy environment, collaboration between actors, effective interpretation and dissemination of forecasted information in ways that are easily understood by end users. This has been established through an in-depth review of agromet services (institutional arrangements and collaboration; data gathering, analyses and dissemination mechanisms employed) in other countries across the world.

Evidently, agromet advisory services are poorly developed in Kenya and cannot provide appropriate and timely information for guiding agricultural development. This has resulted from a number of factors relating to policy and institutional issues governing research, data gathering, extension/training, and policies. This study identifies the constraints, actors, and possible pathways that can be harnessed in mainstreaming agromet advisories into the national agricultural policy. This will require a policy for popularising agromet as a major service in the country in support of Kenya's economic growth and including the provision of agromet advisory services in the operation mandate of key national institutions.

Current constraints include: a limited capacity to handle agromet advisories effectively; bias towards aviation over agriculture; inadequate data gathering and information dissemination mechanisms; and a lack of awareness of the relevance of agromet services for climate change adaptation. The challenges presented in current policy processes include lengthy procedures, lack of effective follow-up mechanisms and poor information flows. Farmers also face many limitations in influencing policy. Despite a great number of actors who *could* play major roles in agromet advisories and climate change in general, the study has revealed that there are currently very few champions – either individuals or institutions – to drive improvements and policy change. Overcoming this requires greater collaboration between the key institutions identified and more knowledge sharing fora.

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Crop diversification to reduce farmers' vulnerability to climate change in Malawi

The main crop for farmers in Malawi has until recently been maize, but farmers are now diversifying their crops. Although it is not clear whether climate change is a motivation for farmers' changes, the client CCAA PAR research project (led by researchers at Chancellor College, University of Malawi) is supporting this change as maize crops are very vulnerable to current droughts and flash floods. Diversification could thus help reduce farmers' vulnerability to climate change.

The RPA case study addresses the client CCAA project's priority intervention – support to crop diversification – through determining to what extent lessons from such an adaptation strategy filter through to policy discussions at the district level, and whether and how researchers could feed local lessons into national level policy processes to integrate this knowledge into adaptation policies.

The RPA case study focuses on three key aspects. *First*, the extent to which the demonstration plots, on which crop diversification is being carried out, are influencing host communities and their neighbourhood to adopt the same on their individual plots. *Second*, the case study focuses on the extent to which lessons from community level would filter through to the district level policy discussions. Particularly in regard to crop diversification as a key strategy for protecting and boosting livelihoods in the context of changing climatic patterns. A *third* aspect that is being explored is the extent to which the PAR researchers will be in a position to feed lessons into national level policy processes arising from the experiences on the ground for debate and for possible incorporation in the diversification policy.

The case study is raising some interesting insights about the challenges facing crop diversification as a strategy for cushioning negative effects of climate change and variability. The results suggest unequivocally that policy processes are not merely technical but also hugely politically imbued exercises. This means that national politics matter in shaping and influencing the nature and form of policy processes. While the crop diversification drive is an officially sanctioned policy position, the political imperative to ensure food security at the national level through the fertilizer subsidy programme is promoting maize at the expense of other crops. Farmers are, of course, issued with flexible coupons to access alternative seeds such as millet and sorghum but these are almost always never available at the designated outlets. Consequently farmers are motivated to plant maize because both the seed and fertilizers are readily available.

Crop diversification at the study sites is further affected by the politics of access to water and marketing. One of the villages is near to a multinational sugar corporation. Farmers in this village own land which is just adjacent to the corporation's sugar plantation where they practice irrigated agriculture benefiting from water overflows from the plantation. The gist of the problem is that the sugar corporation controls water flow of the main river in accordance with the technical requirements to enhance the profitability of sugar production, yet this is often a period at which the farmers need the water the most. In another village, workers at a canning factory have captured a lucrative pineapple market for the farmers which served as a



Members of the National Consultative Group (NCG) with RPA researchers and client PARs after the inaugural meeting (Photo: Blessings Chinsinga/Malawi Team)

key diversification strategy. The canning factory provided a lucrative market for the farmers but in the last two years the company has resorted to buying pineapples from vendors who sell at a higher price than the company used to offer to the farmers. It appears that most of the vendors are agents of the canning factory workers. Farmers' negotiations with the company have not been successful. The company officials insist that if they have to restart buying pineapples directly from the farmers then it will have to be at a much lower price than that currently offered to the vendors.

Crop diversification is further being constrained by severe land shortages. Alternative cereals like sorghum and millet as alternative cereals yield much less per land area than maize. In addition, food stuffs made from maize are widely considered by farmers as much more dignified than those made from alternative cereals. In addition, there are limited market opportunities to dispose of sorghum and millet in case of surplus production.

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Urban-rural interdependence and the Impact of Climate Change in Malawi

The client CCAA project, led by the Institute of Resource Assessment, University of Dar es Salaam, is focusing on the growing urban population and its implications for food demand in cities and the pressure it puts on rural food production in the context of climate change. The project is conducted in Malawi and Tanzania, and aims to examine rural-urban interdependencies, document community-level vulnerabilities and coping strategies, and offer communities, local governments and those involved in food supply systems alternatives for adapting to climate change and climate variability. The project is in its starting phase, which is an opportunity for the RPA case study to work in parallel with the client project both to understand the relevant policy processes and to develop policy engagement strategies. The exact focus of the case study will be worked out once the PARs have undertaken the situation analysis that will inform the nature of interventions that will actually be implemented. The nature of interventions is quite important in guiding the delineation of the focus of the case studies particularly in terms of tracking policy processes that would add value to the underlying goals and objectives of the project.

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