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About Joto Afrika

Joto Afrika is a series of printed briefings and online resources about adapting to climate change in sub-Saharan Africa. The series help people understand the issues, constraints and opportunities that poor people face in adapting to climate change and escaping poverty.



Dairy goats farming in Zambia © Judith Chikonde Foundation

Adaptation to climate change and achieving resilience in East and Southern African drylands

Editorial

The African drylands are home to about 325 million people, or 40% of the continent's population, living in one of the most disaster prone areas in the world. The livelihoods of communities living here need fundamental transformation to ensure their ability to adapt to the impacts of the changing climate. We must find a new integrated way of working which combines development, adaptation, risk management and humanitarian assistance.

With this background CARE Ethiopia, CARE's Adaptation Learning Programme (ALP), the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) and the International Centre for Insect Physiology and Ecology (ICIPE) organized a learning event which brought together practitioners, researchers and policy makers from Botswana, Ethiopia, Kenya, Malawi, Somalia, South Africa, Sudan, Tanzania, Uganda, Zambia and Zimbabwe. The event focused on generating a better understanding of how Community Based Adaptation (CBA) can contribute to an integrated approach to achieving resilient development in Africa's drylands.

This special issue of Joto Afrika shares the conference outcomes, policy messages and success stories drawn from participants' experiences in CBA and resilience in the region. To set the scene, the IGAD Climate Prediction and Applications Centre (ICPAC) presented the current and future climate context in the region. ALP then created a common platform for discussion on CBA. The CBA framework shows how integration of resilient livelihoods, disaster risk reduction, adaptive capacity building and addressing underlying causes of vulnerability, all informed by climate knowledge and risks, can lead to effective adaptation. The highly interactive conference included a market place session where participants shared practical experiences and a range of innovative group discussion and learning sessions.

CBA is about planning and decision making at the local level on an ongoing basis. The Climate Change Impacts on Ecosystem Services and Food Security in Eastern Africa (CHIESA) project is working with local communities and stakeholders to develop a community-based climate change adaptation action plan for the Miwaleni

springs in Tanzania. In Somalia and Malawi, International NGOs are building climate resilient communities, starting with analysis of climate and disaster vulnerability and capacity and their causes, and then supporting community ownership of actions for diversified livelihoods and risk reduction.

CCAFS works with rural farmers in Climate-Smart Villages - sites where farmers and researchers work in innovative partnerships to test a range of climate-smart agriculture interventions. They respond to the risk profile of the community and support better adapted rural households, with higher incomes and greater food security.

Climate change is complex, with future uncertainties. But climate information, if accessible, can be useful and necessary to inform flexibility in adaptation and development decisions with local ownership. Scaling down climate services to the community level may increase trust and demand for scientific information. Studies undertaken in Ethiopia and Zimbabwe reveal that traditional forecasting is collapsing. Although community members trust their own knowledge, its reliability is reducing as the uncertainties of weather increase and biodiversity reduces. ALP has pioneered approaches which enable communities, with meteorological services, to blend and interpret traditional and scientific forecasts, leading to more reliable plans and greater confidence in the information produced.

In a nutshell, revitalizing indigenous systems and community safety nets have in the past helped to lift extremely poor households and support communities and households whenever crisis occurred, but more equitable access to new opportunities in communication, technology, diversified livelihoods and risk reduction are also needed. When these are combined with better ability for anticipating future scenarios, targeting the most vulnerable and institutionalizing flexible decision making systems, future resilience in drylands can become a reality.

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Participatory Vulnerability and Capacity Assessment Tool enhances resilient communities in Malawi

Chitera DRR members explaining the hazards through seasonal calendar, Malawi © Moses Kachiterji 2012

Save the Children International in Malawi has used a Participatory Vulnerability and Capacity Assessment Tool (PVCA) to enhance resilience through supporting community ownership of action oriented activities which support diversified resources for alternative livelihoods.

Climate change has exacerbated the impact of severe disasters resulting in loss of livelihood and property for vulnerable children and their households in Malawi. Disasters which affect vulnerable households have a negative impact on the development progress of the country, as well as making poor people, particularly women, elderly, children and people with disabilities, more vulnerable to future disasters as a result of climate change. Using the PVCA tool, vulnerable communities participate in an intensive process where they identify their vulnerability as a result of climate change, emerging risks, their capacity, and plan for action to lessen their vulnerability. The tool has helped the communities to own their actions at community level with diversified choices of livelihood strategies. These plans have supported communities to enhance their resilience when disasters strike.

PVCA process:

The PVCA process allows the community to validate the risk (hazards) and its impacts (vulnerability) and further analyse the causes to come up with the most effective strategies to mitigate the disaster impacts in each community. Using this process each community decides on priority activities to adapt to the impacts of climate change and reduce the risk of hazards. The community plans are supported by Save the Children International disaster risk reduction framework as an integral process of

development to build capacity of the communities to: reduce the risk of disasters, minimize vulnerabilities, and avoid the possibility of severe disaster impacts, and to mitigate and prepare for the adverse impacts of disasters. These activities include Community Based Disaster Management plans, early warning systems, proposal development to district assembly in disaster risk management, awareness rising in disaster risk management and how communities should prepare themselves for future hazards and ways to decrease their vulnerability in line with community based disaster management plans developed.

Local level action planning:

This has facilitated implementation of activities such as improved farming techniques and diversified crop production, watershed management, soil and water conservation techniques, promotion of drought tolerant crops, household economic empowerment through savings and loans and agribusiness activities, and capacity building in managing disasters. Through community led PVCA communities have taken ownership of the identified activities in their community based disaster management plans and demand for more action at community level.

Emerging lessons learnt from the approach:

A number of lessons have been learnt which have supported achievement of results at scale and replication of the approach within the organisation and at community level.

- Community level understanding of the process facilitates their ownership of the process; community action oriented results, and being accountable for their own actions. Throughout the PVCA process learning should be continuous to support understanding of the processes, community aspiration

and priorities and dynamics of local communities before formulating practical adaptation strategies supported by the NGO.

- There should be a balance between community aspiration and priorities and NGO level support. It is also imperative that throughout the process more vulnerable people's voices should be heard and there should be equitable access to resources to diversify livelihoods in order to achieve meaningful resilience for everybody.

Recommendations and way forward:

- Learning from the CBA and Resilience event, there is a need to scale down climate change information to support decision making and build adaptive capacity at community level.
- NGO level support should focus on evidence based adaptation practices which link the tool with community action through building community capacity to own the process and the project.
- Joint capacity building for local governance systems to better understand community based adaptation issues and to allow district assemblies (local government) to support local level community adaptation projects.
- Building capacity for NGOs and CSOs to support the community level adaptation tool (PVCA) and to value community based adaptation for inclusion in relevant policies.

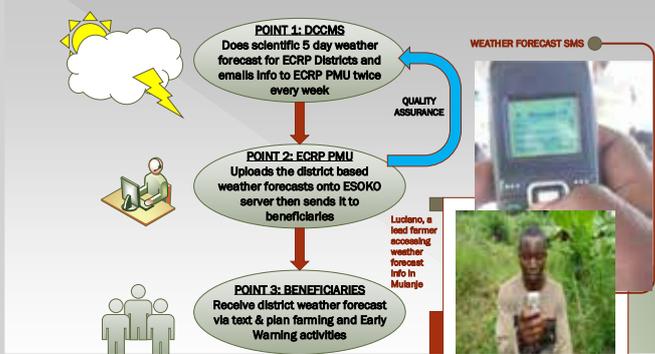
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ESOKO flow chart © ESOKO 2014

Building community resilience through an integrated approach in Malawi

Community resilience refers to the extent to which community members can use community resources to thrive in a changing and precarious environment. Promoting a wide package of integrated development, environmental protection, information provision and risk reduction activities is vital to enhance resilience among communities.

The Enhancing Community Resilience Programme (ECRP) in Malawi implemented by two different consortia lead by Christian Aid and Concern Universal respectively, is supporting communities to be resilient through an integrated approach. ECRP is promoting various approaches to building community resilience in Malawi. The programme is reaching out to 1.2 million people in the 11 most vulnerable districts of the country selected based on the National Adaptation Plan of Action (NAPA). These districts include Balaka, Chikhwawa, Dedza, Karonga, Kasungu, Machinga, Mulanje, Mwanza, Nsanje, Salima and Thyolo.

One of the interventions to achieve resilience is promotion of Climate Smart Agriculture Technologies (CSAT). Due to erratic rainfall and persistent seasonal dry spells in some districts, farmers are being encouraged to practice conservation agriculture to maximize utilization of available water and moisture for crop production. The conservation agriculture approach is based on three main principles; minimum tillage, soil cover and crop rotation.

Promoting low carbon technologies such as solar technology and improved cook stoves (*chitetezo Mbaula*) to reduce pressure on the already diminishing natural resources such as forestry is encouraged. Currently, less than 15% of Malawians are connected to the national electricity grid and close to 90% of households in Malawi use fuel wood for cooking (Community Energy Malawi 2014). The burden of collecting firewood mostly falls on women. Introducing technologies that reduce the time women spend collecting firewood and increase their free time for feeding children for improved nutrition are important.

Village Saving and Loans (VS&L) is being promoted in the targeted districts. Over 80% of VSL members are women. In groups where women have shared their savings

at the end of the year, they have been able to purchase farm inputs, buy more food for the household and send children to school. Having access to income in a “bad year” has helped these families to be more resilient.

Livestock such as goats are also being promoted in the programme as vulnerable families can quickly convert these into cash when faced with a shock.

Early Warning has been promoted as an important part of resilience to climate change. This is done through a wide range of interventions ranging from supporting District Councils to develop disaster contingency and disaster risk reduction plans to community level interventions such as training village civil protection committees in early warning systems for disasters, first aid and evacuation. The ECRP is also supporting districts to install river gauges on rivers that have a record of annual flooding.

In times of increased climate variability and risks, timely access to weather forecasts becomes crucial if a farmer is to make the right decisions about farming and general livelihoods options. In partnership with the department of climate change and meteorological services, ECRP is supporting the rural community to access downscaled localized weather information through their mobile phones, this system is called ESOKO. With assistance from the village leadership including civil protection committees, the weather forecast is further displayed in public places for those that do not have mobile phones to still have access to this information.

Within the package of climate change adaptation strategies, ECRP has taken small scale irrigation to greater heights. Farmers with access to irrigated land are being supported to grow crops more than once per year in the process increasing the total agriculture output in a year. This support also means that targeted farmers will be able to grow a crop even in times when rainfall has been scarce and will be able to grow crops more than twice a year. ECRP is also supporting farmers to grow crops that are resistant to droughts such as cassava, sweet potatoes, sorghum and millet.

Other interventions being promoted include agro-forestry and post-harvest management.

Through this integrated approach, it has been learnt that households that embrace more than three interventions have higher probabilities to build their resilience because they are able to still adapt when one intervention fails due to impacts of climate change.

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Join the Joto Afrika Debate Online



Please send us your feedback on this special issue of *Joto Afrika* to jotoafrica@alin.net include your full contact address or email. *Joto Afrika* is available on the ALIN website. <http://alin.net/Joto%20Afrika>

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Joto Afrika Eldis Community Group:
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Driving changing practices among rural farmers in East Africa through knowledge

Champion farmer Lily Langat of Tabet Village in Kericho County, with part of her improved Gala goat herd © John Recha CCAFS

In remote villages in East Africa, new researchers are emerging. Like contemporary scientists, they are curious about new knowledge and yearn to find solutions to their local problems. These new researchers are smallholder farmers who work closely in their communities. Together, they champion new crops and tend to new livestock breeds that will transform the ability of their communities to withstand increasing heat and drought resulting from climate change and variable seasonal rainfall.

Through innovative partnerships, the CGIAR Research program on Climate Change, Agriculture and Food Security (CCAFS), works with rural farmers in Climate-Smart Villages (CSVs).

Climate-Smart Villages in East Africa
CSVs are sites where farmers and partners are engaged in testing a range of climate-smart agriculture interventions that respond to the risk profile of the community to support better adapted rural households with higher incomes and greater food security. There are 21 CSVs established in Kenya (Nyando) Uganda (Hoima) and Tanzania (Lushoto). Another 360 villages in these countries and in Ethiopia are being transformed to CSVs based on lessons learnt from the initial villages.

Useful links

CCAFS website
www.ccafs.cgiar.org

Smart Farming yields fruit in Nyando
<http://bit.ly/1xsaUMC>

Plump Goats and Pawpaws: A Story of Climate-Smart Farming in Kenya
<http://bit.ly/1v2ICtw>

Climate smart agriculture
<http://bit.ly/1DTiXqZ>

Climate-Smart Villages
<http://bit.ly/1hOGHQK>

Resilient crop varieties and livestock breeds

In Nyando, Western Kenya climate change and variability are manifest through increasing droughts, floods, unpredictable rainfall, and crop and livestock diseases, affecting agriculture and food security. The Nyando farmers are working closely with scientists from the International Livestock Research Institute (ILRI) on sustained uptake of improved small ruminants (SR), better adapted to the increasingly dry environment and emerging disease challenge. Farmers Daniel Langat and his wife Esther are managing a participatory goat breeding unit. Daniel keeps Gala goats; an improved breed with desirable traits of faster growth compared to the local East African goats. Likewise, farmer Joshua Omollo keeps improved Red Maasai sheep that tolerate internal parasites and mature faster than local sheep. These improved breeds adapt better to the changing climate in Nyando. Langat and Omollo's breeding model is expected to reach over 10,000 local farmers in the coming year.

Climate information services

Farmers in CSVs also have access to climate information in order to enrich their knowledge of risks related to seasonal crop failure. In Nyando, Maseno University, in partnership with the University of Reading and the Kenya Meteorological Services are working to ensure 5000 farmers receive climate information ahead of each planting season in order to make informed choices about the crops to grow. This is done through Short Messaging Service (SMS) platform that is complemented by face to face meetings with local agriculture extension agents who discuss implications of the forecasts with the farmers.

Building carbon stocks through improved land management

Farmers in the CSV are discovering the value of agroforestry, with rows of sorghum and other crops sandwiched between multi-purpose trees that stabilize and enrich the soil with nutrients. Subsequently, demand for trees has risen with nurseries springing up to supply seedlings. These nurseries are becoming an important source of income, particularly for women, who own about 60 percent of the nurseries in Nyando.

By partnering with researchers from the World Agroforestry Centre (ICRAF) and Kenya Agricultural and Livestock Research Organization (KALRO), farmers in Nyando have seen an increase in on-farm tree cover by at least 500,000 trees in the last three years. In an ongoing initiative, scientists from ILRI, Center for International Forestry Research (CIFOR) and ICRAF are now measuring greenhouse gas emissions from crop and livestock enterprises in the CSVs. This information will enable both farmers and scientists to determine on-farm greenhouse gas mitigation strategies that best compliment adaptation technologies in the villages.

Micro-credit schemes and scaling up innovations

Farmers have formed Community Based Organizations (CBOs) to pool together resources, ensuring better bargaining power and sharing of emerging lessons. More than 2000 households are members of these groups in Nyando and 70–85% of the active members are women. The scheme has made loans totaling KES 205,000(US\$18,000) enabling members' access to farm inputs. The CBOs convene annual farmer learning events that bring together over 3,000 farmers per event, for exchange of knowledge on local adaptation practices.

Tackling climate change requires innovative ideas generated and implemented through a participatory process in different farming systems. By partnering with key stakeholders, CCAFS is helping farmers access improved agricultural technologies and knowledge for enhanced food security.

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Local knowledge contributes to adaptation success

Indigenous water cooling technology in Zimbabwe © Nelson Chanza

One of the potential avenues for successful Community Based Adaptation and building resilient communities is the exploitation of knowledge, skills and experiences of people experiencing the impacts of climate change. Often referred to as Indigenous Knowledge (IK), this localised development knowledge, embedded in local cultures through community's interaction with the environment contributes to their adaptive capacity when facing the impacts of climate change and to the wider knowledge base informing adaptation actions.

Borana herders in southern Ethiopia and Dryland farmers in Muzarabani, Zimbabwe are applying local knowledge in different ways and timescales to adapt to an increasingly uncertain and variable climate. Borana herders have a rich tradition of climate forecast indicators and knowledge which is vested in and protected by local experts known as *Urgi Elaltus* and *Uchu*, who pass on their knowledge within the family. They use culturally embedded communication systems to enable all herders to access forecasts when needed.

Forecasting methods differ according to the timescale – astrological indicators (sun, moon and stars movements) are used to predict future climate over a season and up to six months or more, readings of animal intestines are used for two to three month predictions, while plant and animal behaviour is used for the coming month. For instance, future drought is predicted if cattle become calm and sleep in the pen very close to one another, excreting while in a sitting position or when the *Tedecha* (*Acacia tortilis*) and *Ret* (aloe) trees sprout few flowers and shed them more quickly than under normal circumstances.

Useful links

Weathering uncertainty:
Traditional knowledge for
climate change assessment and
adaptation:
<http://bit.ly/1wmOQVN>

Based on the forecasts, the herders respond with adaptation actions. They prepare for drought by strengthening enclosures through community by-laws, storing hay, sending scouts to look for water and pasture in abundant areas, migrating with or destocking animals, reducing expenditure and changing schedules of social and cultural festivities such as weddings. Where predictions shows good weather, herders prepare land for crop cultivation, open the enclosure for grazing early and prepare for social and cultural ceremonies.

This heritage is being undermined by external factors such as the influence of religion and modern education and increasing alcoholism. In the absence of documentation and effective knowledge transfer systems the vitality of indigenous climate forecasts may be lost.

The farmers in Zimbabwe are applying their local knowledge to innovate new adaptive measures in response to the climate impacts they are experiencing. Their mechanisms to save livestock from drought include harvesting crop residues soon after each crop harvest and stocking these as cattle fodder for use in critical times.

Conservation farming (CF) using zero or minimal tillage of the soil and dry planting to ensure ground cover over long periods are traditional practices to enhance food security. They conserve the soil against erosion, protect soil nutrients and moisture, enhance soil fertility and improve soil structure all of which improve the resilience of the land to climate impacts and hence increase productivity as well as reducing labour requirements.

Farmers are innovating ways to produce crops all year round through irrigation from rivers or flood waters and by shifting to short-season varieties of maize and small grains (e.g. sorghum (*mapfunde*), bulrush millet (*mhunga*), grain millet (*rukweza*), cowpeas (*nyemba*), and groundnuts (*nzungu*) together with cotton (*donje*) – a cash crop) which are more drought tolerant.

Lessons can be drawn from these experiences in two very different contexts:

- Indigenous-based knowledge, science, practices, and skills are potential avenues to leverage adaptation. Integration of knowledge forms – conventional knowledge and IK - is important for the selection and prioritisation of adaptation actions and to avoid maladaptation. Co-generation of knowledge that values indigenous science, with clarity on the participatory role of IK generators can go a long way in enhancing climate interventions, particularly where climate services are limited.
- Inventories of both indigenous knowledge practices related to climate change and of the knowledge generators themselves are needed – before the knowledge is lost, so that a framework for its recognition, validation and expanded use can be established. This should be informed by a policy regime that recognises the value of IK in climate science and CBA.
- Climate impacts themselves may further undermine the value of local knowledge as the indicators or the species used for indicators change or disappear. Innovation by farmers and herders will be essential for keeping knowledge and practice alive and adaptive to ongoing change.

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Useful links

Local and indigenous knowledge
for community resilience
<http://bit.ly/1yItXbp>

Time for an exit strategy to
traditional climate forecasting?
<http://bit.ly/14UJDQr>



Community-based adaptation action planning in northern Tanzania

Miwaleni Springs is the main source of domestic water for the neighbouring communities in Tanzania © Tino Johansson 2013

Landscape level adaptation plans which integrate water and land use management are critical to maintain water security and ecosystem functionality and to respond to the impacts of climate change in a given locality. In the Pangani river basin in northern Tanzania, the Climate Change Impacts on Ecosystem Services and Food Security in Eastern Africa (CHIESA) project is working with local communities and stakeholders to develop a community-based climate change adaptation action plan for the Miwaleni springs.

Mount Kilimanjaro is an important “water tower” as its glacial melt and rainfall on its forest belt supplies most of the fresh water for this important river basin. Glacial melt water and rainfall on the upper mountain infiltrate underground and emerge on the lower dry lands as natural springs which supply water and sustain flows of tributaries of Pangani River during the dry season. The impacts of climate change and local land use are resulting in increased surface run-off which adds the risk of floods on the lower parts of the mountain.

The Miwaleni springs take their name from the Miwale palm trees, *Raphia farinifera*, growing on its banks. Traditionally these palm trees have been valued and used for worshipping and water catchment protection and are still valued for their shade and building material. Miwaleni springs are an oasis in the semi-arid dryland but threatened by encroaching farms and pastoralist activities on the banks, as well as by growing demand for irrigation water by both large sugar estate and small-scale farms. Competing demand for water and land is the key challenge for the protection of the springs. Improvement of traditional furrow irrigation systems and a transition to modern systems, such as drip irrigation,

could reduce the evaporation and run off loss of this abstracted water and increase the average productivity of agriculture. Appropriate irrigation systems may also reduce water user conflicts through a more fair distribution of available water resource among different uses.

CHIESA has facilitated dialogue among different stakeholder groups to learn about their priority areas of action. Chairmen of the water users associations, representatives of the large-scale sugar plantation, and village executive officers together with experts from the Kilimanjaro region office have identified climate-driven problems and the immediate, underlying and root causes for these problems. They have prioritized activities that form the basis of the Miwaleni springs adaptation action plan for climate change: 1) promotion of appropriate irrigation systems, 2) protection and conservation of water sources and 3) strengthening integrated crop management.

As temperatures rise, insect species and the balance between those which are pests and predators will change, including rates of development of new generations and expansion or shrinking of their geographical range. Land use change, fragmentation of natural habitats and use of synthetic pesticides have also disrupted the interactions in agro-ecosystems. Unfavourable conditions for natural enemies, such as wasps, have ensured optimal growth environments for the insect pests leading to increased damage to crops. Integrated pest management which utilizes conservation agriculture and integrated pest management technologies will support adaptation to increasing rainfall variability and risk of diseases and pests.

Emerging lessons and opportunities

- Protection and conservation of water sources need to address the drivers of

change on both moist mountain forests and neighbouring coffee-banana belt as well as on the dryland areas of Miwaleni Springs.

- Supportive conservation policy and existing laws alone will not help solve the problem but require more political support for enforcement of regulatory mechanisms.
- Water supply, use and management is the major component in the community-based climate change adaptation action plan developed for the Miwaleni springs together with other activities which can enhance food security.
- Protection of natural enemies from pesticides and conservation and restoration of their habitats in the crop areas and surroundings are essential for pest management. This requires sustainable and ecologically sound management arrangements which aim at preserving and enhancing functional agro-ecosystems and their services. CHIESA is helping farmers to cope with potentially increasing insect menace through awareness-raising, technology transfer and training towards action plan implementation.

The CHIESA project is funded by The Ministry for Foreign Affairs of Finland, coordinated by the International Centre of Insect Physiology and Ecology (ICIPE) and implemented in cooperation with the University of Dar es Salaam (Tanzania), University of Helsinki (Finland), University of York (UK) and Sokoine University of Agriculture (Tanzania).

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Useful links

The Climate Change Impacts on Ecosystem Services and Food Security in Eastern Africa (CHIESA) Project <http://chiesa.icipe.org>

Potentials of and Threats to Traditional Institutions for Community-Based Biodiversity Management in Dryland Areas of Lower Moshi, Tanzania.
<http://bit.ly/16pvBTj>



The Miwaleni Springs in Moshi Rural District, Tanzania ©Tino Johansson 2013

Decision-making for an uncertain future: can climate information help?

Jasper Batureine Mwesigwa of ICPAC during a presentation of climate change impacts in East and Southern Africa in Addis, Ethiopia ©ALP 2014

During the learning event participants discussed how information about past, present and future climate conditions can be a key tool for communities to plan for and adapt to climate change. But several people questioned the value of climate science, claiming it is too complex, overly technical and not practical enough to be useful. Why does climate science provoke such strong reactions? And how can we unlock the potential value of accessible and usable climate information?

The following are observations based on our discussions.

Climate change is a complex phenomenon and the related science is complicated

Climate science involves using patterns from the past 20 to 30 years to predict climatic variation in the short-term and season by season, and also looking at changes in past trends (or more simply, the general direction in which the climate has been developing or shifting) to predict how the climate will change 50 years or more into the future.

Planning for the unknown is difficult

Visualising the short or long-term impacts of predicted climate change on daily life is challenging enough, particularly when scientists are often quoted as saying they expect to see 'increasingly volatile and unpredictable' weather patterns and related climatic events. With so many unknowns, choosing which adaptation and resilience initiatives to invest in, and when, can be tough.

Uncertainty is seen as a problem best avoided

Part of the complexity of climate science is that available information often has varying levels of accuracy and certainty. In the financial world, uncertainty and risk are fully accepted features of business. But 'uncertain' information about the future of our global climate is considered a barrier even though, when it comes to making plans which are climate resilient, uncertain information is more useful than having no information at all.

Climate information is supply-driven not demand-driven

Information produced by climate scientists is often driven by those who produce it, not by those who use it, so it does not always tally with what users need. As a result, turning complex data into practical, user-friendly information for adaptation and resilience can be a struggle.

Reflections on making climate information accessible and usable

Focus on the community: Community-based adaptation approaches identify climate vulnerabilities, capacities and challenges, recognise the diversity within different livelihoods and systems and help to ensure services are tailored to people's needs. Community voices, experiences and expertise contribute locally relevant solutions to existing and new climate risks and challenges.

Facilitate interaction among multiple stakeholders:

Bringing together users of climate information (e.g. pastoralists, farmers), producers (e.g. climate scientists) and intermediaries' enables different climate knowledge and interpretations to be understood, improves synergy and coordination amongst actors, and promotes consensus building and trust between diverse groups. This type of collective interpretation by concerned stakeholders enables locally-tailored climate information services and the joint production of new and innovative solutions to help manage an uncertain climate.

Downscale and localise climate

information so that it relates to local contexts and specific user needs – which is what people want, but is rarely available due to the poor coverage of local weather stations and historical information gaps. Downscaling can be enhanced through community climate records, for example taken from rain gauges.

Combine different knowledge

sources: Combining local and scientific climate information recognises the value of local knowledge in generating locally relevant information. When local records, knowledge and forecasting expertise are combined with available past data and meteorological forecasts, a more accurate localised forecast of the future climate can be developed. Joint interpretation unpacks the complexity of the information, and generates better understanding and trust in both sources of information and in the recommended actions based on the forecasts.

Build flexibility into decision-making:

Faced with uncertainty and a continually changing climate, adaptation is not simply about moving to new technologies. Nor is resilience a stable future state. What is critical is to ensure vulnerable people have the capacity to continuously absorb and adapt to changes, and transform their lives in relation to the changing climate and

other risks. A key ingredient is flexibility, at all levels of decision-making, planning, resource allocation and action. Approaches involving two-way learning and feedback promote flexibility and enable systems that factor in uncertainty, respond to changing needs and identify new solutions.

When discussing the reality of using climate information, these principles can help us look beyond the rhetoric and ensure that climate information is a useful tool for decision-making in the face of uncertainty.

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Useful link

Facing Uncertainty: the value of climate information for adaptation, risk reduction and resilience in Africa.
<http://bit.ly/1tpLU6a>

Scaling up climate services for farmers: Mission Impossible:
<http://bit.ly/1wHOKeR>

Decision-making for an uncertain future: can climate information help?
<http://bit.ly/1yLOaJy>

Knowledge is power: Unlocking the potential of science and technology to enhance community resilience through knowledge exchange
<http://bit.ly/KTq3Fs>

Early Warning Early Action in East Africa: Mechanisms for Rapid Decision Making:
<http://bit.ly/1snPoah>



Building resilient communities in Somalia

Community Participatory Analysis discussion at Jowhar Awdhegla, Somali 2014 © Concern Worldwide

The conflicts that have dominated South Central Somalia for over twenty years and the resulting damage to society and to the natural resource base has steadily eroded many communities' resilience to withstand not only the impacts of war, but also drought, disease, flooding and other hazards. Climate change adds yet another hazard and threat to this already volatile situation.

Together, these hazards resulted in a serious famine in 2010-2011. It seems decades of humanitarian aid interventions in Somalia have saved lives but not livelihoods; it is essential to balance the need to provide immediate humanitarian assistance with the vital work of building community capacity to mitigate, withstand and recover from future shocks. Building resilience is complex and challenging in such a dynamic and fragile context, characterized by chronic shocks, massive human displacement, poor to no access to basic services.

Building local community capacity

Somali communities have historically shown strong capacity to withstand and adapt to shocks and stressors through robust local community structures and social networks. Building Resilient Communities in Somalia (BRCiS) consortium is enhancing the resilience of households in South Central Somalia by supporting communities to develop Community Based Disaster Management Plans (CBDMPs), which map community hazards, risks, vulnerabilities and local capacities. CBDMPs support communities to respond to short term immediate needs as well as long-term vulnerability reduction and sustainable livelihoods, exposing root causes which can be addressed through programme activities and identifying scalable community capacities and coping mechanisms which can be strengthened and supported.

Useful links

Reaching Resilience: Resilience Manual for Aid Practitioners and Policy Makers
<http://bit.ly/1tpRMMW>

Gender matters

A study on Exploratory Evidence on the Determinants of Resilience to Food Security Shocks in Southern Somalia done by Mercy Corps in October 2013 has shown that households where women had joint or sole control over household decisions such as major purchases, were more likely to be resilient to food security shocks. BRCiS is not only ensuring the participation of women in the program's development and implementation but also different age groups are engaged through targeted single-sex and age based focus group discussions.

Early warning

A key part of building community capacity to resist and prepare for shocks is the development of Community Based Early Warning Systems (CBEWS). CBEWS integrate traditional and formal early warning systems. Communities are actively involved in the development of community emergency plans and in the identification and collection of appropriate triggers. The triggers ensure sufficient time is available for the implementation of emergency activities both by the community and by supporting NGOs.

Somalis have a strong oral culture, which means that traditional information sharing mechanisms are common and effective, while new technology is also easily accessible and widespread. Mobile platforms are being used to combine grassroots data on market, weather and animal health collected through community focal points with information from regional sources for dissemination to entire regions via Short Message Services (SMS).

Working through economies of scale, innovation and learning

The consortium members are actively including communities in all stages of the process, to ensure decisions respond to their realities and needs, for example, ensuring the appropriateness of interventions for people in different livelihood zones and understanding the complementary interventions needed in order to achieve resilience. They aim to;

- Work on peer monitoring of interventions, thus leveraging the expertise of various members and ensuring maximum output. Harmonized

and robust monitoring and evaluation and accountability frameworks will be used to generate data that will help facilitate timely decision-making and programmatic improvements.

- Offer an integrated package of support to each community. This ensures greater impact and recognizes the real, multi-faceted needs of families and societies in their quest for positive change.
- Use innovative approaches, which combine in-depth knowledge of local communities with up-to-date technology to create effective and efficient market interventions and support adaptability.
- Enhance value for money through joint procurements, joint trainings, shared technical support, use of joint logistics capacity and so forth, where possible and appropriate.

Building Resilient Communities in Somalia (BRCiS) is a Consortium of five international NGOs (Norwegian Refugee Council – Lead agency, International Rescue Committee, Save the Children, Concern Worldwide and CESVI) supported by DFID.

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Useful links

What matters for resilience?
Exploratory Evidence on the Determinants of Resilience to Food Security Shocks in Southern Somalia
<http://bit.ly/1w1SIhb>

Resilience programming among Nongovernmental Organizations: Lessons for policy makers
<http://bit.ly/119LydP>



A vision for resilience? The future of drylands in East and Southern Africa

Young pastoralist woman from Garissa in Kenya,
©Tamara Plush/CARE, 2011

It is one thing to grasp the meanings and characteristics of resilience and community-based adaptation to climate change as an idea, and another to think about their practical implications in a specific, bounded context such as the drylands of East and Southern Africa. It is difficult but necessary to make long-term planning aspirations of climate change adaptation and resilience a reality, and learn to be more forward-looking in our actions, even when doing so blind-folded.

In the drylands of East and Southern Africa, the new risks and uncertainties of climate change meet a complex set of long-standing challenges faced by populations and ecosystems that have been at once extremely adaptable and very vulnerable to a volatile climate and other drivers of environmental, economic and social change. As participants involved in this learning conference on resilience and adaptation in Addis Ababa, Ethiopia, we could see there is a lot to be gained from looking more closely at the past, but also that the future vision for resilience and adaptation of human and animal populations in these lands remains uncertain and contested.

Looking to the past

Looking to the past, as Pablo Manzano pointed out in the previous special issue of this magazine: <http://alin.net/Joto%20Afrika> “adaptation is a key feature of productive systems in rangelands given the climatic uncertainties they experience”. The livelihoods of populations inhabiting these landscapes “have historically included powerful adaptation tools for centuries or even millennia, such as livestock mobility, communal land tenure, rangeland monitoring, extensive information networks and adapted breeds.”

Useful links

ESA Learning event communique:
<http://bit.ly/1yfEPLK>

ESA Learning event full report:
<http://bit.ly/1qEc2j3>

ESA Learning event presentations
and notes on event wiki:
<http://bit.ly/1uuFa7A>

The discussions at the learning conference highlighted how external interventions, such as regulations of natural resource use, and social safety nets put in place to protect the most vulnerable households from climatic and other shocks need to be examined more closely. Do they undermine or strengthen indigenous systems of risk management and resource pooling and sharing? Adaptation and resilience building in the drylands should consider how these systems helped keep human livelihoods in balance with ecosystems until external influences and interventions began to erode this delicate balance.

Imagining the Future

Jasper Mwesigwa of ICPAC set the scene at the learning event with a daunting outlook on the climatic future of the East and Southern African drylands. The likely effects of the expected increase in mean temperature by the end of the century imply almost unthinkable questions about the long term viability of dryland livelihoods and landscapes. At the same time it seems impossible to predict what will really happen. Future scenarios depend on a number of interdependent and quickly shifting variables – economic development, technology, population, energy demand and supply, and land use, among others. Trying to envision what resilient, adaptive livelihoods can look like in a context where climate and economy are volatile, land use is contested and hundreds of thousands are moving to cities, how far are we really able to look ahead? Just think about it: how many of today’s problems and advancements we were able to predict and prepare for thirty or fifty years ago, in 1984 or 1964?

Institutional challenges

Climate change adaptation aims to address long-term timeframes and transformation. Yet, as perceived by many among the range of actors working on addressing climate change, it has become synonymous with time-limited actions that are not very distinguishable from existing development or disaster (especially drought) risk management practices in the region. This reflects a lack of institutional change and imagination among the actors involved in climate change adaptation. We have been slow to look beyond our sectoral silos, and have difficulty planning and implementing transformative initiatives with a project or

planning cycle mindset. Our own capacity for change and transformation, as planners, decision-makers, researchers and ‘doers’ involved in climate change adaptation and resilience, thus seems a key place to start.

With our own capacity for change in mind, perhaps asking ourselves these questions can help us move on:

- What are the assumptions and ways of working we have held dearest over decades, and how are they helping us - or not? – in addressing the magnitude of climate change impacts and other challenges?
- Are we really prepared to learn from the past and present and anticipate the future changes dryland landscapes are facing?
- What do better coordinated responses from development to risk reduction to emergency response look like, and what does it really mean, in practice, to introduce more flexibility to shift between them and to operate on different timescales?

Agnes Otzelberger, Climate Change Adaptation and Gender Coordinator, CARE International – Poverty, Environment and Climate Change Network
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Participants discussing resilience during ESA event ©Anthony Mugo, ALIN 2014



Employment of CBA approaches in policy and planning processes

Wangare Kirumba during an interview at NEMA offices in Kenya ©Esther Lung'ahi ALIN,2014

The form of governance that is adopted is essential to determining which voices are heard in decision making. Effective governance systems must be in place to enable communities and civil society to engage in planning and monitoring adaptation, ensuring that policy agendas include a focus on the poor and vulnerable and that funding is channelled to enable appropriate resources to be allocated fairly.

Wangare Kirumba is a Senior Environmental Planner at Kenya's National Environmental Management Authority (NEMA) – the principal government agency that coordinates and supervises matters relating to the environment, and which has recently been accredited as the National Implementing Entity (NIE) for the Adaptation Fund. Wangare reflects on the learning event on CBA and Resilience, particularly on how integration of community based approaches in policy development and implementation can support communities to achieve resilience.

What is your view on Community Based Adaptation (CBA)?

CBA is a concept that seeks to build climate change resilience by enhancing communities' capacity to cope, based on their local knowledge and day to day interactions with their environment. Communities have a long and daily intimate relationship with their environment thus they are best placed to understand what effective response strategy they can follow.

Useful links

Governance for Community Based Adaptation
<http://bit.ly/11JjONG>

Joto Afrika 13 Integration of CBA into local development planning:
<http://bit.ly/1zYpcr5>

NEMA:
<http://www.nema.go.ke/>

The role of governance should be to identify and support relevant adaptation strategies that support them to build their resilience.

What were your main lessons from the CBA and Resilience in East and Southern Africa Learning event?

The ESA learning event provided an opportunity for me to deeper interrogate my previous contributions in Climate Change planning and consider more practical and effective planning responses for Climate Change adaptation. The main learning points were;

- A flexible decision making mechanism is an essential aspect in development of policy, planning and management of climate change adaptation programmes because climate change is continually happening.
- It is important to factor in the aspirations of communities especially when generating long-term strategies. This is one way of ensuring social transformation.
- Integration of climate information is integral in planning climate change adaptation actions
- CBA can help communities to achieve resilience, but will require recognition and integration of its main principles in governance planning processes

What learning from the event have you incorporated or plan to incorporate in your work?

I am in the team of Environmental Planners who organises for development of Environmental Action Plans and also undertake their reviews. I also undertake the day to day operations of the NIE function at NEMA. The lessons learnt and knowledge gained at the learning event have been very useful to me especially while reviewing draft County Environment Action Plans (CEAP). In these CEAPs, I am now able to identify and prescribe transformative strategies especially in planning for Climate Change responses both at governance structures and at Community level. Also, in planning for Climate Change, it has become very clear that the changes will continue to happen, and therefore the plans developed must

employ flexible mechanisms. Integrating flexibility in planning processes is a relatively new area in the planning context, which I plan to incorporate in my short and long term work assignments. In the implementation of the NIE Climate Change Adaptation Programme and in its food security component, we will incorporate the use of Climate information and I hope to include the principles of Participatory Scenario Planning. These will inform the communities on how to plan for the seasons.

Based on your learning from the event, what are your recommendations to improve the delivery and impact of future adaptation programmes?

- Planning for climate change adaptation must focus on both short term measures (the springboards) and long term solutions (the transformative actions) that take account of inherent capacities of an environment and its inhabitants.
- Acknowledgment that climate change is dynamic and development must be a constant process - what was a solution last year is not necessarily a solution now.
- Relevant knowledge generation should be continuous and not only provided when responding to crisis- knowledge is valuable when put into action.
- In planning for climate change, the community aspirations should be factored in as just as the climate is constantly changing, so communities are undergoing constant social transformation, therefore adaptation must take account of this.

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Reflections from the ESA Learning Event on CBA and Resilience

1st to 4th September 2014 , Addis Ababa - Ethiopia

All photos: ESA Learning Event Market Place
©Yonas Tefesse, CARE Ethiopia 2014

Climate change cannot be addressed by national governments alone but calls for integrated efforts; learning events provide rare opportunities to learn from each other and offer mutual support to enhance resilience in drylands of Eastern Africa.

Wilfan Moufouna, Climate Science expert UNECA



Although Africa is not greatly responsible for climate change, it's the most affected. Africa has to be ready to build resilience and adaptation. Many communities have a wealth of knowledge on how to adapt. This learning event will help us share experience towards CBA in dry lands.

Atto Ber Solomon, Director -Ministry of Environment and Forests, Ethiopia

The event has been very good and true to its title -'learning'. We all had different views of what climate change adaptation is and how it links to resilience. As practitioners we should have a common understanding about the link between climate change adaptation and resilience which in my realization is not that common.

Caroline Agosa Kirungu from IGAD Centre for the Pastoral Areas and Livestock Development (ICPALD)



IPCC reports show the need to speed up on adaptation. Climate change is dynamic and we need to continue to generate and share new information.

Maren Radeny, CCAFS



Paradigm shift for development and humanitarian aid needed – long term strategies with flexible funding, the level of resources required for changes to achieve resilience requires a paradigm shift away from short term specialized approaches.

Wangare Kirumba, Senior Environmental Planner at NEMA, Kenya

I am going to review my programme and see what can be taken from the CBA learning. I have also contacted some of the participants to send me the documents on what 'climate smart agriculture' means and make use of it in my program.

Teamrat Belai, Senior Program Officer for Livelihood Program, Joint Program office of CAFOD/SCIAF/Trocaire



I feel that we have enough networks and resources to move adaptation and resilience forward among dryland communities. The pathway is through making whatever knowledge and networks we have work. Shared learning is critical.

Emmah Owidi, Consultant, Climate Change Adaptation, ICIPE/CHIESA Project



CBA and resilience communiqué

Participants during ESA learning event in Addis, Ethiopia ©Yonas Tefesse CARE Ethiopia 2014

Farmers, pastoralists and their communities are critical agents of change in realising climate resilient development in drylands. But new, scalable approaches for adaptation to climate change and realizing resilient livelihoods are needed which link local knowledge and adaptive capacity with economic opportunities, risk management and welfare systems, equity, and innovation in land use management. This was concluded by 83 participants from over 50 organisations in East and Southern Africa attending a learning conference in Addis Ababa, Ethiopia. Engaged in policy, practice and research across 11 countries participants developed 8 key messages from their collective discussions. This summary reflects the need to develop effective approaches to community based adaptation (CBA) and secure resilient and productive livelihoods for communities living in the region's drylands, in the face of an uncertain and changing climate.

Drylands account for more than 40% of the world's land area and are home to over 2 billion people, 325 million of them in Africa. Yet they are among the regions in the world where climate change impacts on livelihoods, ecosystems and human health are potentially the greatest (IPCC, 2014). Pastoralists, farmers, conservationists, tourism, energy and business services and more, depend on and make multiple demands of dryland natural resources.

Dryland communities have their own aspirations and the right to determine their own futures and engage actively in local and national development. Provided with the

appropriate support to harness and enhance existing local knowledge, skills, information and structures they are and can become agents of change in addressing the impacts of climate change rather than recipients of pre-determined solutions. This requires inclusive and meaningful participation of all groups, including the most vulnerable and the youth and increased investment in analysis of and response to social differentiation, local knowledge, capacity and access. It requires an integrated approach with innovation for diversified livelihoods together with risk management approaches which are informed by climate change knowledge and how to anticipate and manage its inherent uncertainty. Given that the impacts of climate change are complex and multiple, adaptation and resilience require multi-level, cross-sectoral approaches which bring together a range of different stakeholders for dialogue and collective planning. National climate change policy frameworks should therefore empower local governments to define needs and take actions which are tailored to their context and constituent communities' priorities and to scale up successful approaches.

Key Conference Recommendations for Policy and Practice:

1. **Enhancing community ownership, aspirations and capacities** is critical for enabling continuous adaptation to the uncertainties of climate change.
2. Adaptation must recognise and **analyse differences in vulnerabilities and capacities, promote equity** and ensure inclusive participation.
3. **Risk management** approaches need to take account of climate information and be mainstreamed into development planning.

4. **Local and scientific knowledge** provide valuable information for adaptation decisions and should be more accessible, combined and mainstreamed.
5. **Multi-level and cross sector stakeholder interactions** are essential for making flexible and responsive decisions.
6. The use of relevant **climate information improves decision making** in the face of uncertainty through anticipating and responding to future risks, impacts and changing needs.
7. **Governance and policy frameworks** are needed which integrate coordination across development, adaptation, risk and emergency response, in line with local development priorities.
8. **Measuring resilience** should go beyond numbers to focus on transformation of practices, systems and structures.

The Communiqué elaborates on these recommendations: <http://bit.ly/1yfEPLK> and is an open resource for use by all those supporting and working on adaptation to climate change in drylands.

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