

**East Africa Learning Event for
Practitioners, Researchers and Policy
Makers
On
Community Based Adaptation and
Resilience in East and Southern
Africa's Drylands**

**September 1- 4, 2014
Addis Ababa, Ethiopia**

Learning Event Report

Prepared by

Mary Nyasimi



RESEARCH PROGRAM ON
Climate Change,
Agriculture and
Food Security



Table of Contents

1	Executive Summary	5
2	Communiqué	7
3	Identifying a Vision of Integrated CBA and Resilience	12
3.1	Background - Status and Importance of Drylands in Eastern and Southern Africa.....	12
3.2	CBA – A Framework That Can Support Building Resilience in Drylands	14
3.3	Rationale for a Learning Event on CBA Adaptation and Resilience in ESA Drylands.	15
3.4	Objectives, Expected Outputs and Outcomes of Learning Event	16
3.5	Official Welcoming Remarks for the Learning Event.....	18
4	Setting the Scene for Drylands, Adaptation and Climate Change	19
4.1	Identifying a vision for integrating CBA and resilience.....	19
4.2	New challenges that climate change is bringing to Drylands.....	21
4.3	Existing gaps in the interface between Climate change adaptation and resilience.....	22
4.4	Opportunities for Adaptation to contribute to Resilience (World Café).....	23
5	Sharing and Learning through Practical Tools and Approaches	25
5.1	Background – Panel Presentations.....	25
5.2	Dryland Issues and Challenges, Sharing Good Practices and Success Factors	27
5.3	Market Place – Sharing and Learning about Practical Tools, Approaches and Methods	35
6	Understanding Synergies, Complementarities, Added Value of CBA for Resilience - Towards a Vision for Future Work	38
6.1	Taking Stock of the Workshop and Realizing the Limitations of our Work – Fish Bowl Debates.....	38
6.2	Co-Creating New Knowledge towards achieving Climate Resilient Development in East and Southern Africa Drylands	39
6.3	Group Presentations on vision statements, good principles and building blocks	40
7	Coming to a Consensus	50
7.1	Commentary on the knowledge wall: Recommendations for policy and practice.....	51
7.2	Key Recommendations for Policy and Practice	55
	<i>September 4, 2014.</i>	55
	<i>Mid-morning to early afternoon session: Commentary on the knowledge wall using Open Space Tool to discuss emerging issues. Filtering differences and overlaps and important building blocks for a communiqué</i>	55
7.3	Coming to Commitments: Country and personal (organizational)	64
7.4	Regional Forums.....	65
8	Participatory Tools Used during the Workshop	66
8.1	Open space.....	66
8.2	1-2-4-All Reflections	66
8.3	Videos for recap	66
8.4	Market Place.....	66
8.5	Knowledge wall	66
8.6	Fish Bowl.....	67
8.7	Visualization and diagramming.....	67
9	Conclusions – Looking Forward	68
10	References:	69
11	Appendices	72
	Appendix I: List of Participants.....	72
	Appendix II: Existing gaps in the interface between Climate change adaptation and resilience.....	74
	Appendix III: Additional opportunities identified:.....	75

List of Figures

- Figure 1: Aridity Index and land use/land cover maps for ESA Countries
- Figure 2: CARE's CBA Framework
- Figure 3: Open doors of hell - Issues not to be discussed or dwelt upon during the learning event
- Figure 4: Visualization of a resilient pastoral community managing risks
- Figure 5: Mind map developed for Pastoralist – Productive
- Figure 6: Visualization of a resilient dryland farming – risk management
- Figure 7: Visualization of a resilient dryland farming – productive
- Figure 8: Example of a knowledge wall - changing face of drylands
- Figure 9: Knowledge wall – Community based focus
- Figure 10: Ranking of recommendations for a key theme: Measuring Resilience
- Figure 11: Ranking of recommendations for governance and policy
- Figure 12: 1-2-4 All Reflections
- Figure 13: Multi-stakeholder Interactions Knowledge wall that was updated with key issues emerging at the end of each day.
- Figure 14: A visualization of integrated CBA and resilience – 2050

List of Tables

- Table 1: New Challenges emerging in drylands due to climate change
- Table 2: Organizations that participated in market place
- Table 3: 2050 Vision statement and building blocks for pastoralist and dryland farming
- Table 4: Emerging themes for CBA and resilience in drylands and recommended activities

Acronyms

ACORD	Agency for Cooperation and Research in Development
ALIN	Arid Lands Information Network
ALP- CARE UK	Adaptation Learning Program of CARE
ASALs	Arid and Semi-Arid Lands
CBA	Community Based Adaptation
CBOs	Community Based Organizations
CC	Climate Change
CCAFS	Climate Change Agriculture and Food Security
CGIAR	Consultative Group on International Agricultural Research
CHIESA	The Climate Change Impacts on Ecosystem Services and Food Security in Eastern Africa
CIS	Climate Information Services
CBDRR	Community Based Disaster Risk Reduction
CMDRR	Community Managed Disaster Risk Reduction
DRR	Disaster Risk Reduction
ESA	Eastern and Southern Africa
FAO	Food and Agriculture Organization
GFCS	Global Framework for Climate Services
HLLM	Holistic Land and Livestock Management
ICIPE	International Centre for Insect Physiology and Ecology
ICPAC	IGAD's Climate Prediction and Application Center
ICT	Information and Communication Technology
IGAD	Intergovernmental Authority on Development
ILRI	International Livestock Research Institute
IPCC	Intergovernmental Panel on Climate Change
NDMA	National Drought Management Authority
NEMA	National Environmental Management Authority
NGOs	Non-Governmental Organizations
NMS	National Meteorological Services
NRC	National Relief Council
PMERL	Participatory Monitoring Evaluation Reflection and Learning
UNDP	United Nations Development Programme

1 Executive Summary

Climate change is a threat to human development in the drylands of East and Southern Africa (ESA). It is leading to increases in the frequency and severity of droughts and floods and is further increasing the vulnerability and exposure of pastoralists and dryland farmers and their resources (land, water and livestock) to new risks. Since the climate is projected to continue changing, communities living and deriving livelihoods from drylands urgently need to enhance their climatic resilience. At the same time, governments and other stakeholders need to implement climate resilient and disaster risk management strategies to ensure that the climate does not diminish the development gains made to date and negatively impact on future development.

The Adaptation Learning Programme for Africa (ALP), implemented by CARE International, in collaboration with CARE Ethiopia, the CGIAR Research program on Climate Change Agriculture and Food Security (CCAFS) and the International Center for Insect Physiology and Ecology (ICIPE) organized a four-day learning event between 1st – 4th September 2014 in Addis Ababa for practitioners, researchers and policy makers working in the drylands of ESA. Participants were drawn from 11 countries in ESA and a range of disciplines including climate change adaptation, disaster risk reduction, sustainable and eco-system based development and social protection.

Participants at the learning event collectively developed eight key recommendations for policy and practice (these were put together into a communiqué; See section 2). In brief, these were:

- a) **Enhancing community ownership, aspirations and capacities** is critical for enabling continuous adaptation to the uncertainties of climate change;
- b) Adaptation must recognise and **analyse differences in vulnerabilities and capacities, promote equity** and ensure inclusive participation;
- c) **Risk management** approaches need to take account of climate information and be mainstreamed into development planning;
- d) **Local and scientific knowledge** provide valuable information for adaptation decisions and should be more accessible, combined and mainstreamed;
- e) **Multi-level and cross sector stakeholder interactions** are essential for making flexible and responsive decisions;
- f) 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;
- g) **Governance and policy frameworks** are needed which integrate coordination across development, adaptation, risk and emergency response, in line with local development priorities; and
- h) **Measuring resilience** should go beyond numbers to focus on transformation of practices, systems and structures.

The participants made collective commitments towards strengthening the availability and use of traditional and scientific climate information and products to pastoralists and dryland farmers. The participants also agreed to promote collaboration and sharing of information among the many stakeholders working on dryland development, climate

and risk management right from community, sub-national, to national and regional levels.

The learning event identified visions for an integrated approach to achieving resilience and generated good principles and elements necessary for building more resilient drylands that can manage the risks posed by climate variation and change and achieve these visions. Through sharing of tools, methods and approaches, participants learned new and innovative CBA, DRR, sustainable development and climate information services approaches that they can incorporate in their work programs to improve livelihoods of communities in drylands and make them less vulnerable to climate risks and impacts.

The Learning event also demonstrated that climate change can continue to deepen existing gender inequalities and increase risks and vulnerabilities of women and the young. Participants agreed that women, youth and other disadvantaged groups should be brought to the forefront of CBA and resilience so that they can benefit from innovative processes that are based on equitable access to resources. This can be done by encouraging women to engage in complementary/alternative livelihoods such as value-adding activities.

The overall message that emerges from this learning event is that dryland communities and their systems are undergoing transitions and must be supported with climate information and products, agro-advisory services, alongside support to enhance and utilise their indigenous knowledge. This needs to be supported by enabling policy frameworks and increased investments to create viable alternative livelihoods, which increase the adaptive capacity and build resilience of communities living in the drylands. Even though communities living in drylands have traditional strategies for coping against climate change, what they now require is new forms of communication and linkages to key stakeholders to enable them to capitalize on their inherent adaptive capacity and make informed decisions and plans in order to continue to secure their livelihoods in an uncertain and unpredictable future.

2 Communiqué

Achieving resilience in East and Southern African drylands: Communiqué from the CBA and Resilience Learning Event, Addis Ababa, September 2014

This communiqué is the collective product of 83 participants from over 50 organizations engaged in policy, practice and research across 11 countries in East and Southern Africa (see participants' list in Appendix I). It conveys strong messages from the conference discussions on 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.

The Changing Face of the Drylands in East and Southern Africa

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 ecosystems, livelihoods and human health are potentially the greatest (IPCC, 2014). They are fragile, dynamic and challenging environments in which to pursue a livelihood, often marginalized in terms of infrastructure, investment and policies. Pastoralists, farmers, conservationists, tourism, energy and business services and more, depend on and make multiple demands of dryland natural resources.

Climate change adds another layer of uncertainty and risk to the existing challenges faced by vulnerable households living in the drylands. Traditional coping mechanisms and emergency response measures are no longer sufficient to ensure recovery to productive livelihoods. 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.

The livestock value chain in East and parts of Southern Africa is a multi-billion dollar business growing at ever faster rates and together with wildlife tourism contributes highly to national gross domestic product, demonstrating that the drylands livelihood system is becoming more productive overall despite climate change. However for many pastoralists and farmers whose lives depend on drylands, vulnerability and challenges are increasing. Degradation of the environment and rangelands, invasive species and conflicting land uses are disrupting ecosystem functionality. Recurrent droughts, changing aspirations, social and gender dynamics and mobility, population growth, transitioning and new livelihoods in peri-urban and urban centres are creating rapid changes in the family and social fabric. In Kenya's drylands, for example, more than 3 million pastoralist households are regularly hit by drought costing the economy an estimated \$12.1 billion in 2008 – 2011 (ILRI, 2014). Economic trends are creating fewer wealthy families owning a larger proportion of assets resulting in new 'drop outs' from productive livelihoods from poor and vulnerable families. The livestock value chain is yet to benefit 70/80% of the people living in rural areas (UNECA, 2012).

Key Conference Recommendations for Policy and Practice:

1. Community ownership and aspirations

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.

Recommendations:

- **Promote a people centred, rights based approach** to development of programmes and policies in the drylands, which focuses on empowerment and governance through increasing community rights, and voice in decision making towards locally owned development pathways.
- **Build capacity of communities** to continuously adapt to the uncertainties and impacts of climate change, absorb shocks and transform their lives by learning and sharing of experiences and good practices, innovation, accessing and generating information, making informed decisions and developing and implementing collective action plans.

2. Vulnerability and equity

Climate change exacerbates the risks facing people already marginalised by the inequitable distribution of resources and denial of rights, and increases these inequalities further, particularly for women and children.

Recommendations

- **Ensure inclusive and meaningful participation of all groups**, including the most vulnerable and the youth, respecting their agency and supporting men, women and youth to recognise the value and complementarity of each other's different aspirations, skills, knowledge and capacity.
- **Recognise differences in vulnerabilities and capacities and increase investment in analysis and assessment** of social differentiation so as to avoid assumptions and respond effectively to norms and rules which determine differences in capacities, skills, rights and access to and control of information and resources.
- **Support a continuum of social protection measures** from social safety nets to springboard mechanisms like savings and loans which target the most vulnerable and promote pathways out of vulnerability and into resilience.

3. Risk Management

Climate change impacts exacerbate already recurring risks in drylands. Drought and floods are becoming more intense, frequent and unpredictable, occurring in places and times not experienced before. Avoiding disaster and chronic vulnerability from new and ongoing climate risks and uncertainties is critical to realizing resilient livelihoods.

Recommendations:

- **Mainstream risk management into development planning** in all sectors to ensure resilient livelihoods in the face of an uncertain climate, with contingency planning or risk spreading through for example insurance products, village

savings and loans, diversification of livelihood options or social protection systems.

- **Risk management approaches should be holistic**, integrating risk analysis, early warning and early action, risk reduction, preparedness and emergency response and recognizing the links between different risks – e.g. climate, competition over natural resources, conflict - and their impacts.
- **Risk management strategies are most likely to succeed when they are community based** and build on locally identified risks, existing coping strategies and an understanding of risk profiles and projections for different vulnerable groups.
- **Climate information is an important resource** for informing early warning systems, risk reduction and preparedness actions as well as reducing risk in livelihood choices.

4. Integrating Information and Knowledge Sources

Local knowledge and information systems are a valuable resource that builds on years of experience of pastoralists and vulnerable communities but which is gradually being eroded and lost, due to rapid biophysical and socio-economic changes.

Recommendations

- **Recognise and strengthen the value of local knowledge sources**, mainstreaming them into existing systems (like agricultural extension services), whilst also facilitating access and linking to new information, skills, knowledge and technologies such as climate information, mobile phones and radios.
- **Undertake joint inventories and validation of local knowledge and practices with local people**, which support climate change adaptation and resilience, for example local climate forecast knowledge can facilitate downscaling to produce locally relevant and useful information for decision making.
- **Promote participatory technology development** which combines local knowledge and practices with new technological innovations to improve the productivity of dryland livelihood systems, such as in animal health, pasture, land and water management.

5. Multi-stakeholder interactions

The impacts of climate change are complex and multiple and as such cannot be addressed by one group or individual alone but require multi-level, cross-sectoral approaches, which bring together a range of different stakeholders.

Recommendations:

- **Promote systems for two-way communication** between different stakeholders with regular interactions and feedback which enable ongoing and coordinated decisions for adjustments in response to changing circumstances and therefore effective adaptation.
- **Use multi-stakeholder forums to share** evidence of impact, good practices and learning, facilitate co-production of information that is locally relevant and

promote holistic decision making and planning, as well as dissemination and scaling up.

- **Use existing local, national and regional structures and opportunities** like the seasonal forecasts announcements to facilitate the institutionalisation of multi-stakeholder forums. For example, mainstream multi-stakeholder platforms which include community representatives into local government level planning and review systems.

6. Decision making under uncertainty

Climate change means that managing uncertainty is an increasingly important skill for communities in the drylands and can become a powerful adaptation tool when uncertainty is considered, understood and interpreted effectively so that shocks do not come as surprises and risks can be anticipated, reduced, managed or turned into opportunities.

Recommendations:

- **Improve access, interpretation, value and use of climate information** and forecasts from meteorological services, weather stations and climate science, which communicate anticipated impacts, and levels of uncertainty and probability in the information. Support climate science to understand user information needs and develop new products in response.
- **Combine and interpret local knowledge and climate science**, including uncertainty in the information, so that plans for seasonal and adaptation action relate to the local context and respond to changing needs and demands.
- **Enhance community recording and sharing of local climate and environment information** to build a body of locally based knowledge useful for anticipating future risks and impacts, innovation and actions to take.
- **Create systems that embrace uncertainty through in-built flexibility** for continuous and responsive decision making and planning including in funding and budget allocations.

7. Governance and Policy

Practical recommendations for adaptation and resilience will only be viable when policy and governance frameworks appropriately support their implementation at all levels.

Recommendations:

- **National climate change policy frameworks should empower local governments** to define needs and take actions which are tailored to their context and constituent communities' priorities, in line with local development priorities and governance systems and based on evidence and knowledge of successful approaches which can be scaled up.
- **Ensure policy and institutional support for strengthened and coordinated responses to risks** linked to community based systems and ongoing processes including drought monitoring, peace/conflict resolution, adaptation and development planning.

- **Enhance integrated approaches to policy development and investment** (public or private) that are multi-sectoral, multi-stakeholder and multilevel, promoting coordination across development, adaptation, risk and emergency response towards resilient and productive livelihoods in the drylands. For example integrated land and water management approaches which take into account the needs of different user groups and stakeholders, leveraging synergies whilst managing trade-offs and resulting in more effective use of resources and contribution to the wider economy.
- **Strengthen and integrate traditional community structures with formal governance systems and institutions so that** responses are embedded within existing structures, and promote inclusivity and ownership.

8. Measuring resilience

Although there is still much debate on the value of measuring resilience, a good understanding of the many changing socio-ecological factors in drylands: climate, crises, technology, development interventions and their impact on the lives of vulnerable people, is essential in order to assess and scale up and scale out good practices, and to identify areas for further research.

Recommendations:

- **Integrate adaptation and resilience into existing measurement, participatory monitoring and evaluation systems and develop new and innovative tools and approaches** to help better understand and measure resilience. For example, through the Resilience Analysis Unit set up by the Intergovernmental Authority on Development (IGAD) to strengthen coordination, learning and information sharing on measuring resilience across the Horn of Africa region.
- **Measuring resilience must go beyond the numbers** and focus on changes in adaptive capacity, transformation to new livelihoods and fundamental shifts in practices, structures and systems of governance which support resilience.
- **Establish a baseline of social, economic and environmental indicators** which can be used as proxies against which changes in resilience can be measured.

Acknowledgement to communiqué groups members from ALP/CARE International in Kenya; CCAFS East Africa; CHIESA programme, ICIPE East Africa; Beyond Subsistence and Kulika in Uganda; Metropolitan University, South Africa; NEMA, CREP, NDMA, ALIN, ACORD all in Kenya; CEPA and CARE International in Malawi; NRC, Somalia; MARIL, Ethiopia; and national Met services in Ethiopia and Sudan.

3 Identifying a Vision of Integrated CBA and Resilience

September 1, 2014: Morning Session

- Welcome by Facilitator
- *Introduction of the objectives and the learning event program, Introduction to Community Based Adaptation and Resilience in Drylands of ESA - presentation by Fiona Percy, Adaptation Learning Programme (ALP)*¹
- *ESA Drylands Climate Knowledge & Projections - presentation by Jasper Batureine Mwesigwa, IGAD Climate Prediction and Applications Centre (ICPAC)*²

3.1 Background - Status and Importance of Drylands in Eastern and Southern Africa

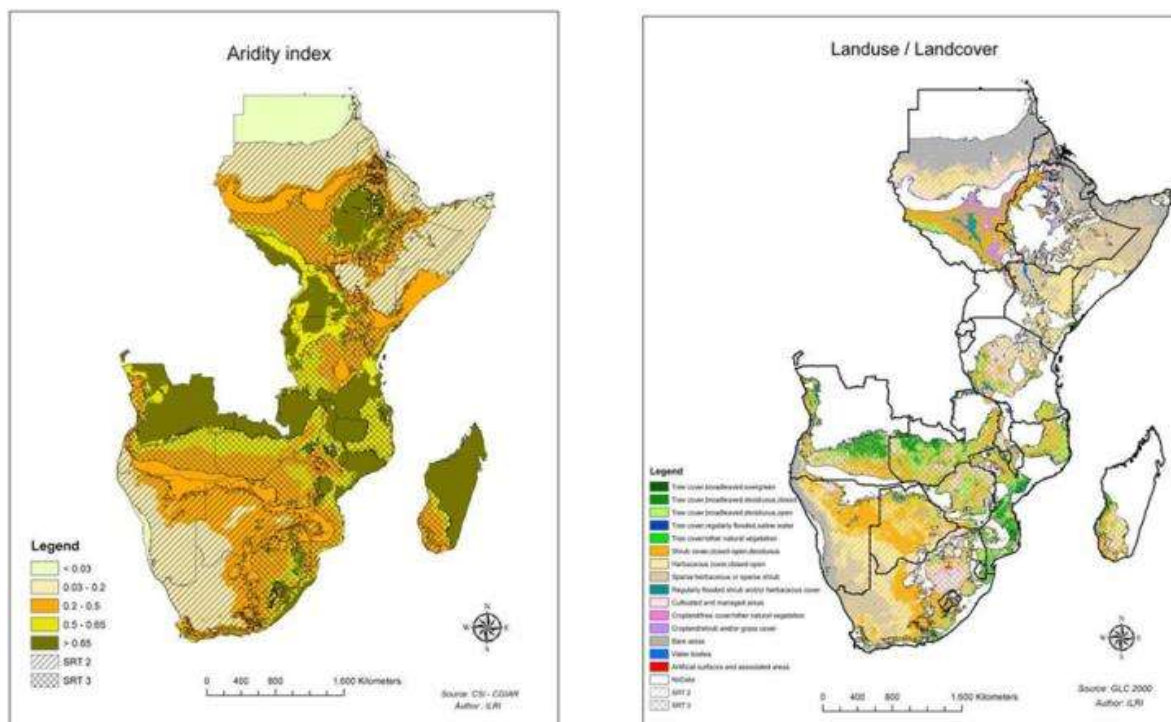
Production systems in the ESA drylands involve a complex combination of livestock (cattle, goats, camel and sheep) and crops, trees and shrubs that are generally low in productivity and unable to meet the growing food demands (Thornton et al., 2006). Three production systems are identified and include pastoralism, agro-pastoralism and rangelands for wildlife and tree conservation. Pastoralism is the most popular livelihood strategy (Davies, 2010). In ESA, drylands experience highly variable precipitation and temperatures, with low and erratic rainfall and prolonged droughts (Figure 1) increasing water scarcity, water salinity, have low inherent soil fertility, are susceptible to severe land and natural resource degradation and in extreme conditions, desertification is occurring and are losing biodiversity at an alarming rate. In addition to this dryland systems face socio-economic and institutional constraints, underdeveloped markets, poor infrastructure, and above all are lacking investment from national governments and private sectors (UNEP, 2011). Furthermore, lack of enabling policies for drylands and/or pastoral livelihoods and insufficient investments in research and development for dryland production systems pose further challenges (UNDP and UNCCD, 2011; WISP, 2008).

A changing climate is exacerbating the fragile physical and socio-economic environment. In ESA, changes in precipitation amounts, extreme temperatures, emerging livestock and human diseases and pests are just some of the impacts of the climate changes in drylands (Sidahmed, 2008; Siri et al., 2008). The effects of climate change will be compounded further by high poverty levels, weak infrastructure, poor natural resources management practices and dependence on rain-fed agriculture (Getahun, 2010; Christine, 2002). Climate models predict rainfall pattern will change in ESA region whereby southern Africa will become drier, and east Africa is expected to become wetter. Drought-prone areas of Botswana, Ethiopia, Sudan and Zimbabwe are likely to become more vulnerable to climate change than areas of the United Republic of Tanzania or Zambia (IPCC, 2007; Hulme et al, 2001).

¹ See the full presentation: <http://www.slideshare.net/cgiarclimate/communitybased-adaptation-and-resilience-building>

² See the full presentation: <http://www.slideshare.net/cgiarclimate/alp-presentation-climate-change>

Figure 1: Aridity Index and land use/landcover maps for ESA Countries (Source: <http://geoagro.icarda.org/en/cms/category/maps/15/regional>)



Traditionally, pastoralists have coped with the threat of drought through mobility and crossing international boundaries in search of water and fodder for their livestock (Bolling and Schulte, 1999). The socio-cultural practices ensured that the community was well connected, able to withstand and recover from extreme weather conditions. But with restrictive boundary issues, encroaching agriculturist and climate change, pastoralists are having challenges recovering and rebuilding their herds and livelihoods after drought. This has made them extremely vulnerable, and ensuing droughts will definitely threaten their very survival. Moreover, when everyone in the community is suffering at the same time, it becomes harder for them to help each other through the crisis (Calvosa, 2010).

Drylands of ESA contribute significantly to the economies of its countries, supporting livestock (cattle, sheep, goats and camels), crops, vegetation and other forms of production (e.g. biodiversity) for vast numbers of pastoral and agropastoral communities (Figure 1). In Kenya, over 60% of the national livestock herd is found in drylands, providing 67% of the red meat consumed (Mortimore, 2003). In Sudan, livestock provide 80% of agricultural gross domestic product. Drylands also provide wood fuel and charcoal, the common energy source for most rural households (Hesse and Cotul, 2006). Above all, drylands in ESA are home to the largest concentration of wildlife, attracting millions of tourists each year. In Southern Africa, Botswana and Namibia, annual revenue from tourism is estimated at \$539 million and \$473 million, respectively. In East Africa, the

Extent and Composition of Drylands in Africa
 In Africa, dryland regions comprise 43% of the total land area (globally 41%), and are home to 50% of the population (IRIN, 2007). 75% of Africa's poor live in countries in which at least one-quarter of the population lives in drylands. By 2030, the number of Africans living in dryland regions will increase from 460 to almost 800 million, increasing pressure on natural resource base. In sub-Saharan Africa, 25 million pastoralists and 240 million agro-pastoralists depend on livestock as their primary source of income (McCarthy et al., 2000).

annual revenues are much higher whereby Kenya, Tanzania and Ethiopia earn about \$1182 million, \$950 million and \$963 million respectively (Hesse and Macgregor, 2009).

Despite the huge revenues acquired from drylands, governments still face challenges of successfully developing drylands due to their inherent fragility, vulnerability to climate change and limited agricultural potential as a result of inherently poor soils and extreme weather (Getahun, 2008; Ellis and Swift, 1988). Drylands are usually brought to attention during emergency caused by droughts, social conflicts or both and financial resources are mobilized by humanitarian organizations. These emergency responses are quick and organizations depart once the crisis is seemingly over. Few resources and energies from this are diverted to build resilience and establish the basis for sustained growth. A paradigm shift from emergency responses to building community resilience is thus needed for drylands development. It is on this basis that CARE International is adapting a Community based adaptation approach (CBA) to empower pastoralists and dryland farmers, reduce vulnerability and build community resilience to the effects of climate change.

3.2 CBA – A Framework That Can Support Building Resilience in Drylands

Why the CBA approach is appropriate for building resilience in ESA Drylands

Adaptation to climate change is becoming a major concern for ESA countries, especially for Southern African countries where decline in rainfall amounts are projected. Most of the ESA countries have carried out in-depth vulnerability and baseline studies and have developed or are in the process of developing national adaptation plans (NAPs) that will be implemented at various timescales – short, medium and long term. Most of the proposed activities outlined in the NAPs are to be implemented at community level. These activities aim at improving the wellbeing of communities, ensuring food security, improving livelihoods and work towards achieving sustainable development. However, this approach has some limitations including a) the proposed adaptation strategies aimed at reducing vulnerability and increasing resilience through mainstreaming adaptation did not engage participatory methods and involvement of communities, b) the proposed adaptation strategies at the national level pose a challenge in that, there is still a lot of uncertainty regarding climate change impacts and site-specific vulnerability. This brings us to CBA, a participatory approach that can be used to understand vulnerability and capacity through the eyes of the community, and develop site-specific adaptation strategies that will in the long run foster resilience.

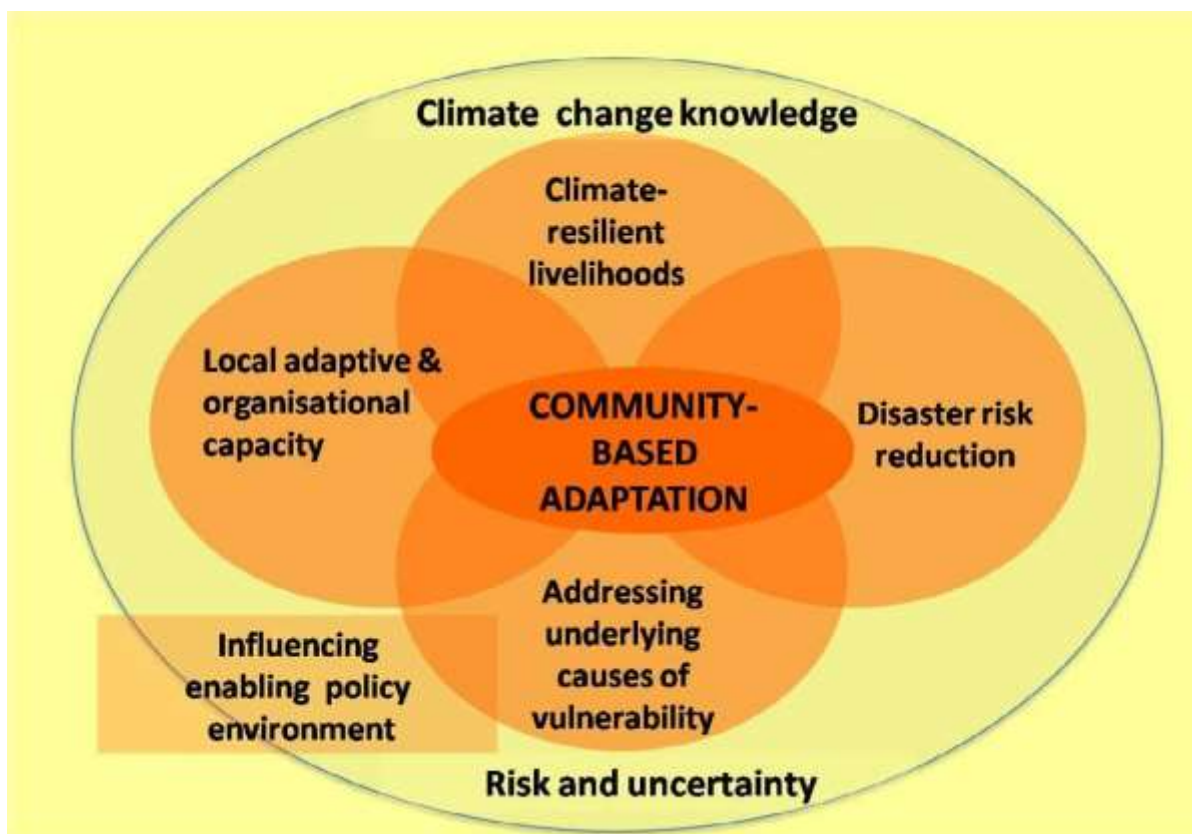
CBA is an approach that puts communities in the frontline of shaping their future. It is a learning process that increases community's adaptive capacity and resilience (Figure 2). It is not an emergency response to crisis (as most development agency consider for drylands) but an integrated and holistic process that includes individual and community development to ensure an enhanced problem solving capacity, and the capacity to anticipate and prepare for extreme climatic events and develop adaptation plans so that future shocks are buffered (Tschakert and Dietrich, 2010). Inclusion of participatory methodologies to generate ideas and innovations for adaptation is one of the tools within CBA approach (Figure 2). Community members (women, men and the youth) sharing their experiences of climate change, impacts, insights and visions for the future within the participatory action research process are a significant driver in building resilience. It is important that climate change adaptation strategies are informed by an understanding of local knowledge and thereafter integrated with scientific knowledge. This knowledge also has a value, measurable not in monetary terms but in the success or failure of household livelihood strategies over time. And we can generate this type of knowledge through usage

of CBA approaches.

CARE has developed and is using a CBA approach to engage drylands communities in understanding the changing climate in their environments and to develop appropriate localized adaptation strategies (Figure 2). Other principles of CARE's CBA include (adapted from King, 2014):

- a. Gender equality and women's empowerment: understand the gender dimensions of climate change and empower women as resilience champions.
- b. Climate Information: Community's access to and use of Climate Information Services (CIS).
- c. Ecosystem approaches: Socio-economic analysis and natural resource assessment. Support bottom-up approaches that make use of indigenous knowledge, existing social networks.
- d. CBA as a process: climate change is dynamic and therefore building resilience is a continuous process.
- e. Integration into local, national and regional development policies, planning and practices.

Figure 2: CARE's CBA Framework. The framework recognizes four key elements that are required for successful adaptation at community level, each of which is informed by climate information, risk and uncertainty and the national policy context. Adapted from CARE-ALP for Africa. <http://www.careclimatechange.org/adaptation-initiatives/alp>



3.3 Rationale for a Learning Event on CBA Adaptation and Resilience in ESA Drylands

The learning event was structured in a way that provided participants with participatory space for critical analysis and understanding of CBA and resilience in drylands. It also provided an opportunity to share and in-depth learning on interaction between climate

change and pastoralism, pastoralists and their evolving and dynamic environment as well as visual maps of the future of pastoralism that can aid decision-makers. The learning event provided an opportunity for participants to share and learn what is already being done to build the resilience of pastoral communities living in drylands of ESA, acquire new and relevant tools for CBA, participate in a series of participatory exercises geared towards identifying a vision of integrated CBA and resilience and finally building a long term network of practitioners, researchers, academicians and policy makers in ESA pursuing resilience for pastoralist and dryland farmers and their systems in a changing climate.

Adaptation provides a vital entry point to enhancing the capacity of highly vulnerable and marginalized individuals and groups in the face of climatic change and uncertainty (Nairobi Work Programme, UNFCCC. 2005).

3.4 Objectives, Expected Outputs and Outcomes of Learning Event

Targeting participants working in drylands and drawn from various organizations including governments, CBOs, NGOs, Academia, Research institutions, etc., the learning event was organized in such a way that participants would share and learn from each other in a friendly and engaging environment. Most of the participants had tremendous knowledge and experience of communities living in drylands and on adaptation and resilience. The objectives of the learning event was to bring together stakeholders from a diverse range of disciplines working with dryland communities across East and Southern Africa, to facilitate learning from experiences and evidence on climate change adaptation, in particular CBA, and resilience. Participants were expected to co-generate new insights on the links between CBA and achieving resilient development. In particular the participants explored the following issues:

- What is the added value that CBA practical experience brings to achieving resilience in dryland communities?
- How are climate change and related responses exacerbating the entrenched drivers of differential vulnerability among communities living in drylands? What are the barriers and drivers to change & transformation, synergies and trade-offs involved?
- What would an integrated and coherent approach to achieving resilience in vulnerable dryland communities' look like? What does it take to achieve resilience for everyone in a changing climate? And is that enough?

Expected outputs and outcomes were:

- A better understanding of the links between climate change adaptation and resilience in drylands with good practices, success factors, challenges and key lessons identified and analyzed to inform future actions and policy.
- Strengthening of professional networks, coordination and ability to engage with resilience in their area of work.
- A communiqué collectively produced by participants to share emerging recommendations for improved practice, policy and to inform decisions on adaptation finance and resilience programming in the region's drylands.

Participants' additional expectations during the Learning Event

In addition to the above objectives, expected outputs and outcomes, participants brainstormed and added their expectations, existing gaps and critical issues that should be considered for CBA and building resilience in the drylands. These are:

- a. Exploring what has worked on CBA, local knowledge and practical experience on adaptation, practical scalable solutions for farmers in drylands and also how to

- generate evidence for practical actions and approach.
- How CBA can contribute to ecosystem functioning and resilience
 - Building resilience and resource mobilization (climate financing for pastoralists) for local level adaptation
 - Multi-stakeholder engagement and involvement for adaptation
 - Harmonization of projects and programs on adaptation and mitigation
 - Networking locally and regionally
 - How to integrate local knowledge and experiences on adaptation with climate change information
 - How to reach and target the most vulnerable groups in drylands
 - How to keep adaptation momentum going
 - Implementation of policy that integrates development and adaptation
 - Enabling policy environment in the region and good governance
 - How to empower pastoral communities and sharing of experiences on good practices

Setting the Tone of the Learning Event

After participants had completed identifying and listed their expectations for the 4-day learning event, they also identified the “open doors of hell” (Figure 3) which were issues that should not be discussed or dwelt upon because they have been overly discussed, can be brought up in a different relevant event or would take discussions away from the theme of the event. Through this process, participants were able to stay focused on the issues at hand and maintain group cohesion. The issues that participants did not want discussed were³:

- Climate science
- Politics of climate change
- Criticism or blame game on organizations/institutions/countries
- Political differences
- Ethnic prejudices
- Genetically modified organisms (GMOs)
- Climate financing or lack of it
- Mitigation and emissions
- Impact of climate change
- Policy making and formulation
- CBA mainstreaming
- Weather forecasting
- Climate smart agriculture
- Clean technologies
- Use of jargons
- Land tenure
- Definitions of climate and climate change

Figure 3: Open door Hell issues not to be discussed or dwelt upon during the event



³ It's important to note that the participants agreed not to dwell on discussing these issues, not because some of these issues weren't important, but because they felt that the issues had been discussed enough in other events and therefore, they should not spend time discussing them during the learning event.

3.5 Official Welcoming Remarks for the Learning Event

Formal Session with CARE Ethiopia, ALP, CCAFS, ICIPE, UNECA, USAID, Government of Ethiopia

The Official welcome speech was by Ato Berhanu, Director, State of Environment, Assessment and Reporting Directorate, Ministry of Environment and Forestry, Ethiopia. The Director stressed that in Africa, climate change is a development issue, which is causing enormous economic and social consequences. Actions to tackle climate change will not be easy and therefore Africa has to be ready and be able to build resilience. CBA that focuses on empowering communities to use their own knowledge and integrate with scientific knowledge can enable all stakeholders to make decisions on adaptation strategies.

Other speakers were Garth Van Hul, Country Director, CARE Ethiopia; Fiona Percy, Adaptation Learning Programme (ALP) Regional Coordinator, CARE International; Maren Radeny, CCAFS East Africa Science Officer, ILRI; Wilfran Moufouma, Climate Science Expert, African Climate Policy Centre, UNECA, Ethiopia; and Dennis Weller, Mission Director, USAID Ethiopia.

Key messages that emerged from various speakers were:

- Climate change knows no boundaries and especially in drylands where pastoralists are mobile and the environment is dynamic. Therefore, we need to continually generate and share new community based adaptation knowledge and build resilience to the effects of climate change.
- Pastoralists are among the most vulnerable to climate change because of their low adaptive capacity. Since pastoralists are mobile cutting across international boundaries, multilateral solutions are needed and countries have to work together by sharing resources and technologies.
- The learning Event is timely in that, the outcomes can feed into other upcoming important global and Continental events such as the African Ministerial Conference on the Environment (AMCEN) scheduled for 8-12 September in Cairo, Egypt; the Fourth Conference on Climate Change and Development in Africa (CCDA –IV) taking place in 1-4 October in Marrakesh, Morocco; and Twentieth Climate Change Conference of the Parties (COP20) taking place from 1-12 December in Lima, Peru.

4 Setting the Scene for Drylands, Adaptation and Climate Change

Learning Objective: Identifying a vision of integrated CBA and resilience - challenges, barriers, gaps, critical questions

Key Messages

- In order to adapt to shocks and manage risks brought about by changing climate in drylands, pastoralists and agro-pastoralists will need long-term CBA approaches and investments to enable them transition into or engage in alternative or complementary livelihoods
- Governments and interested stakeholders (including pastoralists and agro-pastoralists) need to empower communities by integrating principles of CBA into initiatives aimed at building resilience, to encourage long-term investments that will address vulnerability and provide pathways to resilience such as providing safety nets and springboards
- Given the important role that pastoralism plays in the drylands of ESA, it is crucial that governments invest in research and development initiatives and provide an enabling policy environment which will build the resilience of pastoral and agro-pastoral livelihoods and the resource base on which they depend.

4.1 Identifying a vision for integrating CBA and resilience

The key entry point in the discussions for building resilience in drylands is the value of integrating CBA, since CBA is an approach that advocates for; using participatory methodologies, multi-stakeholder engagement and, integrating scientific and indigenous knowledge among others.

The participants divided into several groups and generated visual maps of the vision of integrated CBA and resilience. Several themes emerged across the groups and these are:

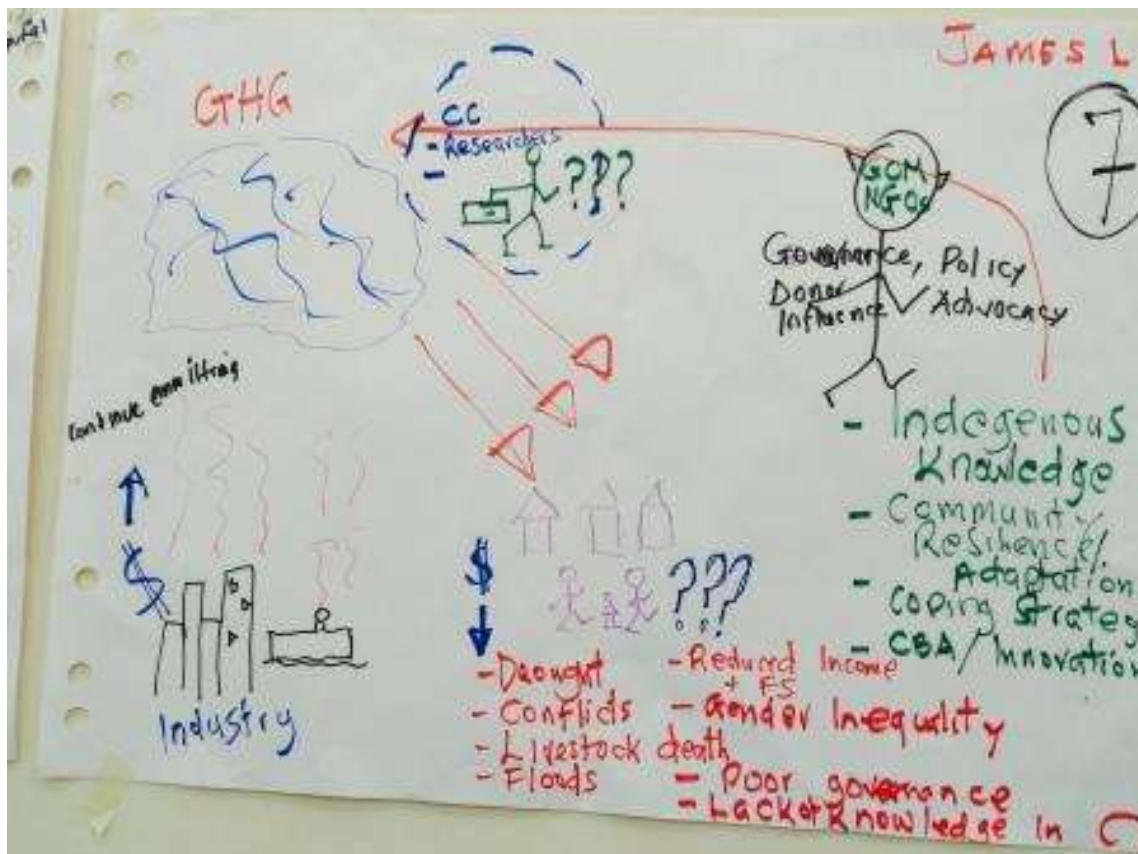
- Institutional linkages (especially with traditional institutions) and networks can be used to strengthen climate change adaptation and build resilience in drylands.
- Also important is to support stronger CBA knowledge sharing mechanisms amongst all stakeholders.
- CBA and resilience in drylands should be integrated with disaster risk management strategies, working with humanitarian organisations coordinating emergency responses.
- Enabling policies and policy frameworks that support drylands and pastoralism.
- Scientific evidence (integrated with indigenous knowledge) needs to be supported for CBA action and resilience.
- Facilitate a community based approach to scientific climate data collection by building capacity of local communities to collect, disseminate and use weather data, for adaptation activities.

Addressing resilience in drylands draws more questions for participants such as:

- Whose resilience?
- Resilience to what?
- What is resilience in a changing and uncertain context?
- Community bouncing back to what - chronic poverty, inequality?
- Covering up differences in and causes of vulnerability?
- Who is responsible for vulnerability in drylands and who is responsible for realizing resilience?
- How does climate change affect resilience?

The purpose of integrating CBA and resilience in drylands is to understand how a changing climate is impacting every member of the community (women, men and youth) and to learn how people can better adapt to these impacts through CBA actions and strategies (ALP-CARE, 2012; UN-ESC, 2008). This is because CBA is based on the premise that the local communities are best suited to articulate their adaptation needs and demands in a changing climate and therefore, enable communities with both the knowledge and capability to act and to drive decisions on climate change adaptation (Reid and Schipper, 2014, 2014; ALP-CARE, 2014). Several pictures were drawn depicting community-based adaptation and resilience and how climate change and other stresses are changing the lives of pastoralists and drylands (see Figure 4).

Figure 4: Vision for an integrated CBA and Resilience for drylands



Critical Questions regarding identifying a vision of integrated CBA and resilience that emerged during the learning event

Q1: What successful experiences do ESA countries have regarding downscaling weather forecast information for pastoralists and disseminating agro-advisory services?

In Kenya, ICPAC and Met services are piloting downscaling forecast to community levels and disseminating agro-advisory services. However there are gaps to fill especially on reliability and timeliness of weather information.

Q2: How do we blend CBA and mitigation strategies to deal with climate change in drylands?

The world is already on the trajectory towards climate change. However it is important that any adaptation strategies have to consider mitigation strategies as well.

Q3: What does a transformational action mean in real terms?

It cannot be business as usual anymore... Transformational actions are already happening for example in communication channels... the key question is how do these transformative actions contribute to safeguarding the livelihoods of pastoralist? How do we tap into the transformational action to engage local communities in adaptation initiatives?

4.2 New challenges that climate change is bringing to Drylands

The drylands of East and Southern Africa are already fragile lands experiencing multiple pressures and in addition to this, a changing climate is bringing in new challenges. Adverse climate events (drought and flooding) are aggravating vulnerability amongst the pastoralists and other communities living in the drylands of ESA and resulting in an inability to cope with new challenges posed by climate change. This is resulting in two categories of communities especially amongst the pastoralist, that is, a) wealthier households are becoming wealthier despite the impacts of climate change and b) the poorer households are becoming poorer and ultimately dropping out of pastoralism and transitioning into other livelihoods (Cullis, 2014).

The learning event identified a considerable list of new challenges that climate change is bringing to drylands and the pastoralists who derive their livelihoods from these lands. Four main categories of challenges were identified, that is, socio-cultural, livestock production, weather related and natural resource based challenges. Socio-cultural changes included changes in social structures and gender roles with more and more women getting involved in men’s work, and this is leading to increasing workloads (and vulnerability) especially amongst women and youth. Livestock production challenges mentioned includes: emerging new diseases and pests, increased conflicts for grazing lands, fewer animals per household as animal die faster than they are replaced. Weather related challenges were: unpredictable rainfall and increasing drought periods and inability of indigenous knowledge to keep pace with changing weather patterns. These new challenges thus demand for new community driven solutions. Indeed, adaptation strategies to help buffer the effects of climate change on pastoralists will range from simple solutions to high-technological options such as use of mobile phones to access climate information.

Changes in climate patterns in drylands are having their most acute effect on pastoral and agro-pastoral systems and communities. As pastoralists and their livestock depend on water and pasture, increasing frequency and intensity of droughts is exerting extreme pressure on pastoralism (Table 1).

Table 1: New Challenges emerging in drylands due to climate change

New challenges	How to work with Uncertainty
a) Social-cultural and economic challenges	
<ul style="list-style-type: none"> • Changes in socio-cultural practices, including changing gender roles, more pressure on women and children as workload increases and breakdown of family structures (increasing women headed households) • Social fabric breaking down and pastoralists are moving towards fewer animals per households, changing livestock type (Move from cattle to goats and sheep to camels) sedenterization and engagement in crop production • Increasing social tension from the household level, to communities and to national level • Women and children are becoming more vulnerable e.g., increasing insecurity with mobility • Changes in mobility patterns, that is, men and boys in pastoral communities used to migrate during dry periods and now the whole community including women and children are migrating • Overstretched traditional coping mechanisms 	<ul style="list-style-type: none"> • Provision of safety nets and social protection targeting women and the youth • Improvement of social services • Introduction of climate smart complementary and/or alternative livelihood strategies (beekeeping, basket weaving, production of leather products e.g. wallets, shoes)

b) Livestock production challenges	
<ul style="list-style-type: none"> • New livestock and vegetation diseases (Rift valley fever) and pests • Inability to pursue other livelihood options within drylands due to lack of knowledge, investment capitals and access to infrastructure e.g., markets • Encroaching sedentary farming practices including irrigated systems that are competing for limited resources and are marginalizing the pastoralists • Increasing food insecurity, as livestock herds decrease due to death or selling at very low prices • Increased demand for financial resources to cope with during drought periods to buy food and fodder • Slow development progress as resources are diverted to cope with climate change impacts 	<ul style="list-style-type: none"> • Livestock breeding for diseases and drought tolerance • Fodder breeding and cultivation for drought tolerance • Provision of livestock insurance (risk spreading mechanism) • Development and implementation of policies that favor pastoralism and drylands • Promotion of access to markets and credit facilities • Access to weather index insurance (IBLI, IBCI)
c) Weather related challenge	
<ul style="list-style-type: none"> • Indigenous methods of predicting weather including indicators becoming less reliable • Unpredictable rainfall with increasing variability in terms of intensity and frequency of extreme events leading to more droughts or flooding • Lack of trust and/or confidence in climate information due to differing indigenous and scientific sources • Short term climate information (at seasonal, monthly, weekly and daily timescales) not communicated in timely manner • Low response capacity for early warning and disaster risk reduction (DRR) 	<ul style="list-style-type: none"> • Blending and strengthening of scientific and indigenous knowledge on forecasting • Improvement of climate information and agro-advisory services • Improve exchange and communication of climate information and uncertainties • Downscaling and timely, reliable weather information–predictions with appropriate advisories • Strengthening Early warning systems • Community managed DRR that incorporates indigenous knowledge
d) Natural Resource challenges	
<ul style="list-style-type: none"> • Increasing degradation of natural resources and environment with impacts on soils, vegetation, grasses and water bodies due to maladaptation. This has led to slow regeneration of natural resources • Flash floods destroying infrastructure thus limiting mobility • Human-livestock-wildlife conflict escalating as resources become scarce • Cross border mobility conflicts as pastoralist migrate through international boundaries 	<ul style="list-style-type: none"> • Integrate CBA to develop sustainable natural resource management strategies • Improving climate smart infrastructure – institutions planning, technology development and transfer

4.3 Existing gaps in the interface between Climate change adaptation and resilience

Adaptation to the adverse effects of climate change is vital in order to reduce its impacts and build resilience. Adaptation is identified by IPCC (2007) as one of the five key building blocks that are needed to strengthen communities and countries future response to climate change. The learning event discussions brought out some of the key factors that are missing to enable pastoralists to adapt to present and future changes in climate and continuously be resilient. These are summarized below and explained in detail on Appendix II).

- *Knowledge gaps on climate and climate change*: Inadequate data, inadequate research studies or conflicting findings leading to dryland communities engaging in inappropriate adaptation strategies
- *Absence of supporting and enabling policy framework*: this includes lack of coordination and segmentation in policy and practice.
- *Lack of differentiation of vulnerable groups* within the community: Climate change affects different people within the community differently and each one requires different adaptation strategies. Blanket recommendations are bound to fail because of the different social groups in pastoral and dryland communities.
- *Inability of NGOs and Government to apply an integrated holistic approach to building adaptive capacity and resilience* which can encourage community participation and integrate indigenous and scientific knowledge and address short term risk management as well as long term resilience building.
- *Lack of coordination* between the many actors: There is need for all actors to come together, share their knowledge and experiences and conduct joint planning for adaptation and resilience.

Resilience cannot be a stable state given constant climate change and uncertainty. It must be about capacity to continuously absorb, adapt and transform lives in relation to the situation

4.4 Opportunities for Adaptation to contribute to Resilience (World Café)

The primary challenge for pastoralists, dryland farmers, governments and other stakeholders in ESA is how to keep and sustain pastoralism and agro-pastoralism as a livelihood strategy as the climate continues to change. However, vulnerability to climate change will continue to increase for communities living in drylands if no initiatives are taken to address it.

With more targeted research and investment, there are promising prospects that can enable pastoralists to manage risks and improve livestock production. If and when carefully managed,

pastoralism can produce tangible economic and social benefits to pastoralists and other communities. Transformative actions already exist that can be documented and scaled up across the drylands. These actions can improve prospects for pastoralists and include improved livestock types and breeds, livestock based insurance mechanism, access to markets and market information, access to downscaled climate information and products, blending of indigenous and scientific knowledge, integrating CBA approaches to develop sustainable natural resource management (NRM) strategies, complementary climate smart livelihood options that can reduce risks and improve household incomes.

Requirements for adaptation and building resilience to climate change in drylands of ESA

Adaptation to climate change demands for creativity, innovation, responsibility, and political will. It calls for governments to accelerate progress towards achieving sustainable development, by identifying innovations, investing in research and development to scale up promising climate smart innovations (Solana, 2014)

Interest in climate change research and generation of data and knowledge is bringing on board a clearer view of the risks and the opportunities that exist in drylands. By situating climate as part of a dynamic and interacting biophysical and social environment, a better understanding of the interactions between adaptation and resilience is emerging. It is important to note that current climate impacts in drylands create enormous challenges to achieving resilience due to interaction among multiple stressors. Adaptation strategies including choices and action can provide responsive trajectories towards achieving community resilience. These actions will ensure that effective risk management and adaptation strategies are implemented and sustained.

The learning event produced the following opportunities for adaptation to contribute to resilience (see Appendix III for more details).

- **Strategic multi-sectoral and multi-stakeholder** partnerships. Strategic partnerships are an important mechanism for sharing knowledge and solutions. Alliances that can help dryland communities adapt to climate change challenges need to include pastoralists and dryland farmers themselves, national governments to provide enabling policy frameworks, research and academic institutions to test new innovations, NGOs and CBOs to scale up promising strategies and donors for financing.
- Adaptation can provide an **integrated and holistic approach** for integrating knowledge and skills of local community to build resilience
- Adaptation can provide evidence to enable policy makers develop **evidence based policies** for drylands
- CBA can generate useful **information** (both process and outcomes) that can be scaled up and/or used as a catalyst for building resilience. This is because the CBA approach provides opportunity for learning about successes and failures of adaptation.

5 Sharing and Learning through Practical Tools and Approaches

Learning Objective: Identifying success factors, challenges and good practices

Key messages

- Support for strategic multi-stakeholder engagement (including pastoralists, dryland farmers governments, Meteorology services, private sector, NGOs and CBOs, and humanitarian organizations) for coordination and collaboration in developing new innovative ideas that can provide the impetus for change towards resilience
- Support for an enabling policy environment that can promote efficient market systems, engagement of the private sector, provision of ICTs for communicating climate information and agro-advisory services
- Encourage the social and economic empowerment of women and the youth who are affected differently by the impacts of climate change and are highly vulnerable. CBA approaches can provide tools for targeting different vulnerable groups to ensure that women and youth gain greater access to productive resources, alternative livelihoods that can increase their income, markets and equitable decision-making power will go a long way to ensure that community resilience is sustained.
- Facilitate greater access to climate products and agro-advisory services for pastoralist to enable them make seasonal and long term decisions and plans.
- Facilitate effective climate knowledge management
- Evidence-based knowledge is critical regarding the appropriateness of climate information for decision making and alternative and/or complementary livelihoods as we seek to identify and scale up proven pastoral resilience activities

5.1 Background – Panel Presentations

September 2, 2014: Morning Session: Plenary keynote on key topics by 3 guests

5.1.1 Keynote Presentation I: Climate Information Services for Community Adaptation and Resilience⁴

By John Gathenya - University of Reading

Climate risk contributes to chronic poverty, food insecurity and vulnerability amongst dryland communities. Access to climate information is key to managing current climate risks and adapting to a future climate. Unfortunately, due to various factors including constant migration and marginalization, dryland communities do not have access to climate information and therefore have challenges in managing risks. The mandate of National Meteorology Services (NMSs) is to provide weather and climate information to climate sensitive sectors and end-users who will interpret and apply climate information for decision making. Specifically what is needed includes:

- Seamless suite of location-specific climate information products involving analysed historical data (over 100 years), seasonal climate forecast (3 months), short terms forecast or alerts (1 day to a month) and projections for future climate (decades into 2100)

⁴ For more information: <http://www.slideshare.net/cgiarcclimate/climate-information-services-presentation?related=1>

- Co-production of climate information services⁵. Communities unlike national level planners want information more closely tailored to them and national meteorological services cannot meet this demand due to low observation network density and few qualified staff. However, decentralization of government departments has an opportunity to meet this demand
- Integration of climate information with other information needed for decision-making (through usage of participatory approaches) such as market information.
- Efficient and effective dissemination approaches that reach communities equitably and at scale. This will involve integrating climate information in pastoral extension messages, using ICTs (local radios and short message service) and encouraging private sector participation, training extension workers, NGOs and farmers.
- Support systems that help communities act on climate information to improve their livelihoods, increase adaptation and build resilience. This can be done through linkages to markets (inputs, soil analysis labs, credit), developing technologies with farmers through experimentation and research support.

5.1.2 Keynote Presentation II: Future Horizons: pastoralism and climate change in Ethiopia? By Adrian Cullis - Tufts University⁶

Pastoral areas occupy 60% of Ethiopia's land area, are habited by 15 million people and exports goods worth about USD 350 million to Middle East. Conflicting data/information on climate change in Ethiopia means there is no emerging consensus on what climate change might mean for Ethiopia. Challenges facing pastoralist are many and complex and intertwined. Social and economic differentiation affects how pastoralists cope with drought. Wealthy families accumulate more livestock, medial wealth families remain unchanged and those considered less wealthy lose livestock during drought. Livelihood trends emerging in pastoral areas are not new, but what has changed is numbers of livestock families hold. National pastoral policies must strengthen pastoral systems to assist families in transition. Flexible donor funding that allows for innovative dryland resilience is needed. Civil society is crucial for drylands and pastoral communities to strengthen evidence-base on the viability of pastoralism.

5.1.3 Keynote Presentation III: Vulnerability, Adaptation and Resilience By Emma Bowa - CARE International⁷

Different groups in society are affected differently by climate change and respond differently as well. Communal social protection systems and safety nets are collapsing as drought intensity and frequency increases in pastoral areas. Everyone in the community has a role to play in addressing climate change through their own experiences and knowledge. Access to and use of climate information products is affected by gender, language, age and other social differential factors. It is important to acknowledge and encourage vulnerable people as owners of knowledge and agents of change. Strengthen

⁵ CIS projects in East & Southern Africa include a) Global Framework for Climate Services (GFCS) project in Malawi and Tanzania, b) CCAFS work in Eastern Africa (Kenya, Uganda, Tanzania, Ethiopia Rwanda) and IFAD's KCALP programme in Kenya

⁶ See the full presentation <http://www.slideshare.net/cgiarclimate/future-horizons-pastoralism-and-climate-change-in-ethiopia?related=4%20>

⁷ See the full presentation <http://www.slideshare.net/cgiarclimate/resilience-and-adaptation-esa-learning-event%20>

their capacity and empower them to adapt in different and complementary ways. Key question is, how do we include the most vulnerable groups? What opportunities exist for meaningful interaction and engagement of vulnerable groups?

5.2 Dryland Issues and Challenges, Sharing Good Practices and Success Factors

**September 2, 2014: Mid-Morning Session –
Group Work: Collecting clues about the key topics discussed during the morning sessions, specifically focusing on:**

- a) *What are the issues and challenges,*
- b) *Success factors and good practices,*
- c) *Barriers and drivers to change and the link between climate change adaptation and broader development and resilience issues.*

5.2.1 Climate Information - a New Resource for Adaptation, Risk reduction, Early warning and Resilience

Issues and challenges

- Climate information especially for drylands is not available due to a lack of relevant technology for data collection, few weather stations that are constantly interrupted thus affecting the quality of information collected
- There is no timely and accurate information/data that pastoralists and agro-pastoralists can rely upon
- Most of climate information are supply driven not focused on the needs of end users
- Resources (including human and financial) for continuous development of climate information products based on user needs are lacking. We need to incorporate private sector finance to sustain development of new products
- Language barriers exist in communicating climate information. Climate information is full of scientific jargon which local communities cannot understand and it's not in user friendly structure, thus its subject to misinterpretation and translation problems
- No incentives for meteorological observers
- There is no hazard database to monitor the data collected
- Forecasts neglecting historical data
- There is no user interface
- Lack of trust and confidence in climate products and information
- Lack of private sector engagement for sustainability
- Timescales – most focus is on seasonal forecasts. Long-term forecasts and use is yet to be addressed, except local observations. Long-term future forecasts are still problematic for climate science.

Success Factors

- Wider range of climate information and products exists to improve seasonal forecasts
- Combining local and scientific knowledge at local level
- Collective interpretation to produce advisories
- Communication of advisories and uncertainty together with forecasts
- Building capacity of local community to develop and implement early warning systems
- Historical information for farmer decision making

- Valid range of communication channels (Case study 1)
- Tools available for combining observed and satellite data
- Dissemination of content in local language
- Availability of reliable data from international/global forecasting centres
- Use of community monitors to take local records of weather and climate
- Various national projects and programs should be involved in installing weather stations to improve the network

Good Practices

- Participatory scenario planning
- Breakdown language barriers for understanding scientific climate information
- Communicate climate information through community radios, text messaging using mobile phones
- Flexible forward decision making approach
- Downscaling workshop where climate science meet with other actors
- National seasonal farmer planners with advisories
- Regional seasonal climate outlook forums e.g. The Greater Horn of Africa Climate Outlook Forum (GHACOF)
- Avail community rain gauges at local level for pastoralists, agro-pastoralists and meteorologists to take local records of weather and climate
- Multi-stakeholder approach and capacity building for multi-stakeholders
- Integrated end of season review to understand whether the climate information was appropriate, understood by pastoralists and agro-pastoralists and actually used in decision making
- Integrating indigenous and scientific local information (increase indigenous forecasters)
- Strengthening linkages between producers, users and intermediaries
- Inclusion of climate information into pastoral extension services

Case Study 1: Kenya: Devolved government installing infrastructure for communication

Since independence in 1963, pastoral communities in Kenya have been marginalized in terms of budgetary allocation for development. Recently, the devolution process to the County government is ensuring that dryland areas that constitute about 88% of the country land mass and supports about two-thirds of the entire livestock population, is receiving budgetary support. Nine counties are located in drylands and most of them are investing in infrastructure (road network) and ICTS for accessing information and technology. For instance, installing cellphone masts for mobile phone coverage that can be used to share climate information and products and, agro-advisory services with pastoralists.

5.2.2 The Future of Pastoralism in an Uncertain Climate

The dynamic interaction of underlying factors contributing to increasing vulnerability amongst pastoralist and pastoral system is highly context-specific. However, in ESA countries, there are several common factors that have a direct bearing on the vulnerability and resilience of pastoral and agro-pastoral communities and livelihoods and they include climate change, ecosystem degradation, dramatic increases in food and costs, population growth, gender inequity, conflict over access to and use of natural resources, and unstable or ineffective governance.

Key challenges facing and pastoral and agro-pastoral areas and systems:

- There is diversity within pastoral and agro-pastoral systems, each having different challenges and dynamism that we should recognize instead of offering blanket adaptation strategies - a localized adaptive approach is appropriate.
- Inappropriate policies that support large ranches and negatively affecting smallholder farmers (experience from Botswana). Thus making the wealthy livestock keeper become

wealthier. In Uganda, policies are encouraging pastoral communities to transition to agro-pastoralism. Existing policies are not compatible with pastoralism.

- NGOs are not involved in policy engagement and they should be involved in informing policy processes.
- Pastoralism is in transition and many pastoralists have dropped out, the challenge is what are these pastoralist engaged in? What livelihood options/alternatives do transition families have?
- Pastoralism relies on the natural resource base, which is facing degradation and encroachment by increasing population/settlement... how do we make pastoralism sustainable?
- Lack of livestock breeding programs that are suitable for pastoral areas
- Pastoral areas are hotspots for poverty
- Pastoral systems and pastoralism offers intricate and complex interplay of different factors that challenge adaptation (social, natural, political, economic, cultural etc)
- Pastoralism is not guided by physical boundaries (e.g., Kenya-Uganda, Kenya-Ethiopia, Kenya-Tanzania) and hence poses challenges to policy implementation. Pastoralism is mobile and does not respect boundary/borders.
- Donor community is not flexible with regards to funding for pastoralism
- Top-down approaches that target poor pastoralism conflicts with how the community wants to solve/address their own problems
- Traditional governance is weakened and the government 'modern" governance system is very weak and in some cases destroying traditional governance systems. It is very complicated and lack evidence base.
- Available natural resources for pastoralism are reducing.. Challenge is working out the optimum use of land and its resources in drylands.
- There is lack of evidence to support that pastoralism is the best practices for drylands.
- Conflicts with other economy sectors e.g., Tourism is encroaching on pastoral lands and with its great contribution to the economy, majority of the lands in National parks were originally pastoral lands. Revenues gained from tourism are not shared with pastoral communities.
- Pastoral lands are communally owned without security of tenure. Hence land grabbing is rampant and pastoral communities do not have a voice to advocate for their land rights
- NGOs are slow in responding to the needs of the pastoral communities. They also work in isolation, doing work by themselves. They should operate in a sphere whereby all stakeholders are involved included governments, private sectors, research etc. They should provide learning spaces whereby all stakeholders come together.
- NGOs are not adaptive to the governments structures in each country that have completely different operating systems for engagement, coordination etc. e.g., Ethiopia has Federal system, Kenya has County Government.
- Researchers/NGOs are not treating pastoralism as a system. There are no structures to support it such as markets, credit. Pastoralism is isolated and often neglected except for a few NGOs who operate in the drylands.
- Conflict with agro-pastoralism for land for grazing and cropping.
- Crop production (agro-pastoralism) is introducing invasive weeds/plants that are not

The future of pastoralism in ESA depends on:

- a. Conserving ecological and social-cultural systems
- b. Engaging in complementary livelihoods to act as buffer during crisis
- c. Supporting traditional governance structures and integrating with government ones
- d. Maintaining grazing lands and national boundaries open and communal to ensure mobility
- e. Enabling policy framework (markets, credit)
- f. Encouraging the youth to actively embrace pastoralism and complementary livelihoods

palatable to livestock. These will have a serious impact on productivity of milk and meat yield as well as the taste of the milk and meat. What is the future of pastoralism with invasive plants?

- Refugees are putting pressure on natural resources and seriously degrading the land, areas that were pastoral lands. A lot of land is lost due to refugees.
- Emerging extractive industries that are conflicting with pastoralism and destroying the land. Government is investing in these extractive industries.

Good practices and success factors that we can build on

- Understanding the dynamics of pastoral systems - give chance to pastoral communities to discuss, analyze and provide solutions. Work in partnership with local community; identify challenges and potential solutions in the local areas.
- Complementary livelihoods to Pastoralism e.g., in Tanzania, community owned ASALs are designated as wildlife conservation areas, and everyone identified the boundary and maintained the areas for wildlife. This attracted tourism, created employment, lodges were built and during drought livestock are allowed into the areas for grazing and water. This approach is working well, because it conserves the environment. Policy and legislation in Tanzania is supporting this form of complementary livelihoods.
- The future of pastoralism is dependent on the ecosystems from which they derive their livelihoods. Policies should address how to reduce livelihood herd size to restore the ecosystem that is degraded.
- Traditional institutions that govern grazing rules exist e.g., the Borana community of Kenya have been quite successful in managing their pastoral systems. Borana in Ethiopia have successful governance on range management, water management. But these systems of governance are in danger from government structures that are in conflict with the traditional ones. Boundaries conflicts are emerging.
- NGOs should be adaptive to local governance processes and government structures. NGOs should work together with other stakeholders especially the government e.g., CARE-Kenya is using a participatory Learning process (Participatory scenario planning) whereby it engages local governance systems and pastoral communities. The success of the program has enabled the Ministry of Agriculture, Livestock and Fisheries is adopting the approach and piloting it.
- Livestock mobility is key to pastoralism.
- Markets for livestock products should be available
- Strategies to manage droughts and other extreme weather to enable pastoralists to get rid of some of the herds during adversity periods (herd size management). Governments/private sector can buy livestock during such periods
- Social protection strategies to enable pastoralists to manage risks and droughts e.g., creating communal fodder banks to enable improved coping during drought and supporting development for formal and informal safety nets that are flexible to ensure the effective use of resources and minimize the risk of dependency on external assistance (Case Study 2)
- Relate historical trends of pastoralism setting with climate scenario modeling and invest in scientific research towards pastoral programs.
- There are smart donors who invest heavily in Africa and we are not tapping into these resources. We should be much more robust with acquiring more donor funding

Case study 2: Botswana: Successful social protection strategies for livestock production:

The government regulates feed prices by lowering prices during droughts. Every year the government undertakes a drought assessment and if it declares a drought, it develops packages to assist communities to survive. One option is subsidies for animal feed, through the Livestock advisory centers (LAC) who gives a list of the feeds that are subsidized and the percentage. During the drought period, farmers pay the subsidized rate and when drought is over, prices return to normal. Subsidized feeds include drought pellets, salt, Dicalcium phosphate and vaccines.

- The community should not be passive and humble. We should strengthen them to articulate their issues. Awaken the traditional governance structures to fight for their communities, engage with local governments and be involved in planning and budgeting.

Limitations of Current Initiatives and Adaptation Strategies for Drylands

The heterogeneity amongst pastoralists and their mobility, and inconsistent climate data and information impose serious limitations in constructing appropriate adaptation strategies that can respond to climate change. Despite these and other limitations, by sharing and learning, the participants identified several strategies which can broadly be divided into three categories; a) focusing on pastoralists, their diversity, and using CBA and other participatory methodologies to explore how their lives might look in the future under uncertain climate conditions and strengthen their capacity to adapt, b) Identify all stakeholders, their roles, and establish sustainable platforms to learn from each other, c) encourage significant investments in drylands economic and social development.

5.2.3 Pathways into Resilience for the most Vulnerable to Climate Change in Drylands

Factors that influence vulnerability include, amount of and condition of asset base, power relations, Traditions/norms/culture, gender equity, age, disability/health, geographic locations, literacy levels, ecological health (quality of natural resources), social health (e.g. impact of humanitarian response on indigenous economic systems) and infrastructure (transport and communications). However, there are success and good practices that can support CBA and resilience and which can be scaled up.

Combating climate change in the drylands and adapting communities to its impacts represents an opportunity for new and more sustainable investments and management choices that can also contribute to improved livelihoods and fighting poverty among pastoralist (UNCCD, UNEP & UNDP, 2009).

a. Success factors and Good practices needed to support CBA and Resilience

Community-based adaptation (CBA) is becoming an important approach to build the capacity of vulnerable communities to adapt to the impacts of climate change (Tigg, 2007). This is because CBA explores the difference that exists amongst communities that can influence their ability to adapt to climate change, addresses gender inequality, focuses on developing sustainable livelihoods with local people and integrates rights-based approaches (ALP-CARE, 2012; Tiggs, 2007). The learning event identified success factors for CBA and resilience under three main discussion topics, that is, the future of pastoralism, climate information services and vulnerability, adaptation and resilience.

In summary these were:

- a) The wide range of climate information and products that exists should be disseminated, together with associated uncertainties, to pastoralists using ICTs,
- b) Complementary and/or alternative livelihoods that act as buffers should be promoted,
- c) Traditional institutions and indigenous knowledge should be integrated into resilience,
- d) Historical pastoralism trends and knowledge should be linked with climate scenarios and modeling,
- e) Ensuring that all groups (gender, age and marginalized) are included in the CBA.

At the same time, participants also identified good practices and these included,

participatory scenario planning, involving pastoralists actively in CBA, establishment of seasonal climate outlook forums, multi-stakeholder involvement at all levels, provision of safety nets and building capacity of local people to enable them engage in alternative livelihoods.

b. Engaging the most vulnerable in CBA

The most vulnerable pastoral groups are the most affected to the adverse impacts of climate change due to their low adaptive capacity. To address climate change related impacts on the most vulnerable; we can use CBA approach, especially in designing adaptation strategies, policies and strategies. A CBA approach will ensure that:

- Transformation for the most vulnerable including working with the more powerful/better off in order to change the barriers/conditions which are impacting on people's vulnerability. This transformation will lead to changes in institutions and policies
- Avail adaptive social protection. This includes opportunities for pathways out of vulnerability
- Provision of Safety nets during emergencies e.g., food aid, cash transfer
- Springboards that can act as impetus for change e.g., livelihood diversification integrated with risk management strategies

Factors that influence vulnerability:

- Asset base
- Power
- Traditions/norms/culture
- Gender
- Age
- Disability/health
- Geographic locations
- Economic capital
- Literacy levels
- Ecological health (quality of natural resources)
- Social health (e.g. impact of humanitarian response on indigenous economic systems)
- Infrastructure (transport, communications etc.)

How to work with the most vulnerable without singling them out and making the problem worse

- **Adaptive social protection** – opportunities for pathways out of vulnerability
Continuum: safety nets → springboards → transformation
- **Safety nets** (social protection) = food aid, cash transfer, public works (school, road, health centre)
- **Springboards** (livelihood diversification and risk management) will equate to new income generating activities, skills, information, technologies, social/micro insurance schemes, traditional social protection mechanisms (e.g. merry go rounds, zakat)
- **Transformation**- transforming institutions, policies, livelihoods (e.g. institutional social welfare structures)

Has adaptation in practice been a bit short sighted, focusing on quick fixes rather than long-term solutions?

- Recommendation of most vulnerable by chiefs/ community heads that are given priority of allocations. This might ensure equitability

- Working with the most vulnerable quite often is about working with those who are NOT the most vulnerable in order to address social structures/norms which prevail and perpetuate vulnerability e.g. same applies to gender and working with women
- Drylands – problem with absence of government – resources not available for social adaptive capacity but existing community structures such as community based and traditional natural resource management could be strengthened in absence of government.
- Necessary to revitalize cross-boundary/traditional structures?
- Strengthening linkages/interactions between vulnerable groups and government/elite as not just about having access to resources and information, access to formal institutions etc.
- Community mapping – identification of different groups within community – target the support differently. Engage people as groups not individuals to participate in collective action.
- Community representatives nominated from within communities – important to have trust in these people (community based trainers or community monitors)
- Necessary to have dialogue between donor community and practitioners to try and educate, inform and change approach to funding and achieving change.
- Programme approach – working with communities over the long term (15 years) across all of the sectors.

Success factors:

- Safety nets
 - Culturally acceptable practice
 - Vulnerable people facilitated to become empowered
 - Good support from government structures
- Springboards
 - Building on existing local structures (e.g. traditional governance structures, women's groups, youth groups)
 - Strengthening linkages and relationships
 - Inclusivity – ages, gender, vulnerable groups
 - Extension support
 - Access to information – market, climate, technologies
- Transformations
 - Focusing on; information, governance, education, markets and ICTs with 'out of the box' approaches in order to result in transformation.
 - Not focusing only on technological solutions but on transformation of institutional and governance structures.

Good practices:

- Safety nets
 - Quick responses to the needs of vulnerable people
 - Contributes to NRM and reduces Government expenditure (budgets)
 - Creates an opportunity to introduce new technologies to vulnerable communities
- Springboards
 - Improved crops and livestock practices and livestock diversification
 - Grain banks (chief's granary)
 - GSLA/VSLA
 - Domesticating value addition practices
 - Building capacity and extension support
- Transformation

- Understanding existing potential and building on this
- Not assuming we understand social differentiation but instead delving in and researching the social context – particularly norms and rules which could constrain transformation.

Barriers and Challenges:

- Safety nets
 - Misuse of resources
 - Dependency syndrome
 - Creates social tensions
- Springboards
 - Social and cultural norms
 - Resistance and politics
 - Conflicts
 - Loan risks (non-repayment)
 - Lack/limited stakeholder engagement
 - Managing uncertainty and other risks
- Transformation
 - Resistance to change – soft skills needed to address fear, culture and protection of the status quo.
 - Limitations of funding structure, soft skills necessary to advocate change to more flexible and long term funding.
 - Limitations of reporting structure which focuses on superficial numbers rather than measures of real transformation.

Summary:

- *Relationships* – often more needed than money or technologies, trust and confidence, programme approach, access to formal institutions
- *Going the 'last mile'* – no transformation without safety nets and social springboards, we cannot leap frog these steps.
- *Valuing traditional indigenous mechanisms* – governance, land use arrangements, traditional safety nets
- *Transformation for the most vulnerable* – often means starting by working with the more powerful/better off in order to change the barriers/conditions which are impacting on people's vulnerability

5.2.4 Connections to the whole discussions, other plenary sessions/wider picture?

- Climate information
 - Is not reliable/adequate - combine with delivery of market information to farmers to enable them know when to sell. Communication between the farmer and weather info providers is poor. Make the meteorological/scientific information user friendly. Pastoralism with climate info...climate info should be tailored towards pastoralism.
 - We need to undertake vulnerability studies, identify who is the most vulnerable and tailor adaptation strategies that use climate information to each vulnerable group
 - Invest in community structures and leaders - we must undertake evidence base on community structures, etc.
- Product development
 - Seasonal climate outlook forums

- Improved seasonal forecast with more types of and user specific information – start and end date, dry spells etc.
- Tailored end products and packages for agric.; demand side important – Met and agriculture departments and agriculture research training on generating products for end users
- National seasonal farm planner - interpretation and seasonal advisory development for downscaling to agro-ecological zones regional
- Seasonal advisories developed from climate and other information from multi-stakeholder groups
- Collective interpretation and generation of relevant information and advice
- Participatory Scenario Planning (PSP) – seasonal collective interpretation combining local and science knowledge with review of past season to create advisories – all over ESA now, including Sudan
- Tailored product development
- Combining local knowledge and scientific knowledge
- Using historical data and local knowledge for downscaling
- Capacity building important and needed – should be multi-stakeholder
- Communication
 - Use a variety of Communication channels – ICTs/mobile phones, radios, social networks
 - Using agro-advisories with action options not only forecast dissemination
 - Information communicated should feed decisions for actions
- Local information and knowledge combination
 - Rain gauges at community level – and mobile phones for sending info to meteorological services and back. Potential for producing local data and analysis by meteorological services to support short range and seasonal forecasts – but still in development.

5.3 Market Place – Sharing and Learning about Practical Tools, Approaches and Methods

September 2, 2014: Afternoon Session – Official launch of the Market Place of methods and tools.

There exist a lot of CBA tools, approaches and methods that different organizations are using in the drylands at community level. During the learning event, 16 organizations ranging from government, research organizations, academic institutions, NGOs, and CBOs shared some of the tools, approaches and adaptation activities they are involved in (Table 2).



Isaac Kabongo from ECO Uganda describes the purpose of community vision maps at his stall at the ESA learning event market place.



Martin Rokitzki from Oxfam talks about multi-sectoral planning as part of the ACCRA and ASSAR projects at his market stall at the ESA Learning event.

Table 2: Organizations that participated in the Market Place

Name of Stallholder	Name of Organisation	Summary of presentation	Title of resources and weblinks to resources
Catherine Mungai, John Gathenya and Ayal Desagln	The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS)	CCAFS Climate Smart Village Approach: Experience and lessons from Nyando, Kenya	https://cgspace.cgiar.org/bitstream/handle/10568/27889/Nyando.pdf http://ccafs.cgiar.org/blog/how-can-we-help-farmers-better-understand-climate-information#.VIWrY01yZdh
Solomon Nega	FAO, Ethiopia	Pastoral Field School – Discovery based learning processes	http://www.fao.org/3/a-i3512e.pdf
Badra Yusuf Ali	Norwegian Refugee Council, Somalia	Building resilient communities	http://bit.ly/1tpRMMW
Dorothy Tembo	Centre for Policy and Advocacy, Malawi	Hazard Vulnerability Maps	http://www.cepa.org.mw/documents/ECRP_documents/ECRP%20BULLETIN.pdf
Isaac Kabongo	Ecological Christian Organisation, Uganda	Community Vision Maps – Partners for resilience	http://www.ecouganda.org/index.php/projects/cca-drr-emr-integration
Joy M. B. Tukahirwa	Beyond Subsistence, Uganda	Master Tree Grower Program – Value of trees in forestry/agro forestry	http://www.beyondsubsistence.org.au/projects-seofs-uganda/index.htm
Judith Kateule	Judith Chikonde Foundation, Zambia	Goat pass-on empowerment project	http://jcfAfrica.org/
Ayub Shaka	Adaptation Consortium (Ada), Kenya	Marketing CIS initiatives for adaptation and resilience in Kenya	http://adaconsortium.org/
Mutie Nzau	Ministry of Devolution and Planning, Kenya	A framework for mainstreaming climate resilience into development planning	http://pubs.iied.org/10050IIED http://pubs.iied.org/10044IIED
Nelson Chanza	PhD Candidate, Nelson Mandela University, South Africa	Harnessing indigenous knowledge for enhancing CBA and resilience in Muzarabani dryland.	The work will be accessible in the forthcoming Joto Africa 15
Teamrat Belay	CAFOD/SCIAF/Trocaire, Ethiopia	Community based adaptation in watershed management approach	
Lwanda James Kondwani	University of Agriculture, Lilongwe, Malawi	Mainstreaming DRR to enhance resilience with use of vulnerability capacity assessment tool in Save the Children (SCI) programmes in Malawi	http://www.savethechildren.org.uk/sites/default/files/docs/Reducing_Risks_Saving_Lives_1.pdf
Emmah Owidi/Tino Johanssen	ICIPE(CHIESA project) Kenya	Climate Change Adaptation Planning: Lessons from the Taita Hills, Kenya	http://chiesa.icipe.org/index.php/news-events/112-reducing-vulnerability-to-impacts-of-climate-change-and-variability-farmers-in-taita-receive-training-on-conservation-agriculture-and-integrated-pest-management
Nicola, Emma, Maurine, Fiona	Adaptation Learning Programme (ALP) CARE International	Increasing the capacity of vulnerable households in Sub-Saharan Africa to adapt to climate variability and change through community based adaptation approaches.	http://www.careclimatechange.org/adaptation-initiatives/alp
Alebachew Adem Samuel Molla	CARE Ethiopia	PRIME: Pastoralist areas Resilience Improvement through Market Expansion	https://www.facebook.com/CARE.Ethiopia
Martin Rokitzki	Oxfam (ACCRA + ASSAR)	Multi-sectoral planning – Changing local government planning mindsets	http://policy-practice.oxfam.org.uk/our-work/climate-change-drr/assar http://policy-practice.oxfam.org.uk/our-work/climate-change-drr/accra

6 Understanding Synergies, Complementarities, Added Value of CBA for Resilience - Towards a Vision for Future Work

Learning objective: Based on understanding of synergies, complementarities, added value of CBA for resilience, build consensus on critical issues. Reality check on alignment with existing current policy, finance, programmes

Key Messages

- Identify systematic community based process that judiciously promotes and leads to understanding of drylands and pastoral livelihoods and of traditional adaptation systems that have been relied upon by pastoralists and integrate knowledge of these into CBA development.
- There are building block activities necessary for CBA and resilience including, using ICTs to communicate climate information for decision making, favorable pastoralism policies, investments in livestock support services by private sector and holistic risk management that links emergency relief and development.
- Good principles to achieve a 2050 vision of resilient pastoral and dryland farming communities are: evidence based policy and planning, equity and multi-stakeholder coordination approach etc.

September 3, 2014: Morning session –

Plenary keynote: dialogue a la Fish Bowl between 4-5 key people on finding synergies between tools and topics - questioning the fields/disciplines represented and challenging them to work together.

6.1 Taking Stock of the Workshop and Realizing the Limitations of our Work – Fish Bowl Debates

- We need to focus on pastoralists view on how their lives might be looking in the future under uncertain climate conditions...transitioning livelihoods
- We need to examine and identify the roles of the different stakeholders, how to engage with them, what innovations and technologies are out there in the drylands that we can document and scale up and how to engage policy makers and NGOs in developing strategic policy frameworks for drylands
- Support pastoralists towards more resilient livelihoods and towards a quality of life within the context of the changing climate, explore existing and emerging new risks and how pastoralists can manage the risks, what systems can provide climate information e.g., early warning on time using communication tools that are appropriate to local people.
- We should not only focus on productive livelihoods, but resilient pastoral livelihoods.
- Strengthen the adaptive capacity of pastoralists and identify pathways out of vulnerability to climate change for drylands.
- Information about climate change is complex and therefore, the key question is how to synthesize all this information to be useful and build adaptive capacity for pastoralists.
- Understanding of climate change terminologies is essential to enable us grasp what is expected to build adaptive capacity and enhanced resilience of pastoralists.
- Participatory monitoring and evaluation and, impact assessment should also be emphasized to enable pastoralists and development organizations to monitor and measure progress towards building resilience. This will enable us draw learning

experience and improve on livelihoods.

- Important issues to consider include: how do we measure behavioral change in drylands? Can we measure resilience or is it something that we will always keep striving for like happiness?
- We need to think about economics for drylands particularly how the poor and marginalized people can benefit from all the projects that are being implemented in drylands. What social development projects are suitable for poor and vulnerable people? What investments are needed for poor people that can act as springboard to development⁸.
- What role do development workers/agents/donor community play in undermining traditional coping mechanisms that have always existed for thousands of years? We need to reflect on this to ensure that we are not contributing to vulnerability of pastoral communities. Interventions by development organization can and have interfered with community coping strategies in the past.
- We need to develop a sustainable platform for stakeholders to share experiences and success stories so that we all learn what successful pastoral communities are doing.

6.2 Co-Creating New Knowledge towards achieving Climate Resilient Development in East and Southern Africa Drylands

September 3, 2014:

Mid-Morning session – Group work on developing vision statement, good principles and building blocks for two main types of dryland livelihoods: pastoralists and dryland farmers in the context of managing risks and ensuring productive livelihoods. There was critical commentary from a panel representing policy makers, donors, political economy, finance etc.)

Climate change is emerging as one of the major threats to Africa's development, including the achievement of the Millennium Development Goals (UNDP and UNCCD, 2011). Drylands in ESA are the hardest hit due to their natural fragility, marginalization and existence of a high vulnerable population. To be able to bring drylands of ESA into the forefront of development, decisive and transformative actions on climate change are acutely needed. For example, big investments and finance can be harnessed to catalyze climate resilient development comprising of innovate dryland-use management, breeding in livestock adapted to drylands and alternative/complementary livelihoods. To transition to climate resilient development, pastoralist in drylands also require strong evidence based policy and institutional frameworks that are fully driven and supported by governments and other stakeholders.

The common thread in the vision statement for the different groups was: healthy secure families that are economically empowered, having accessing to downscaled climate and market information through ICTs, organized and highly productive, having access to supporting police frameworks, gender equity, market and value chains development, livelihood diversification, linking relief, rehabilitation and development and multi-sectoral and multi-stakeholder engagement (Table 3).

⁸ The current investments that governments are planning for drylands in eastern Africa (Kenya, Uganda) is extractive and hardly addresses or benefits the pastoral communities.

Table 3: 2050 Vision statement and building blocks for pastoralist and dryland farming

<p>Group 1: Pastoralist - Managing Risks (very dry) The vision statement for 2050: <i>Resilient pastoralist with more productive herd on secure lands.</i> Building Block activities:</p> <ul style="list-style-type: none"> • Climate Information for decision making • Buffer resources and risk spreading • Linking Relief and development (holistic risk management) 	<p>Group 2: Pastoralist - productive (very dry) Building Blocks</p> <ul style="list-style-type: none"> • ICT and communication technologies supporting social networking and access to integrated knowledge • Favorable pastoralism policies. • Education and research support services. • Pastoral demand driven research • More investments in livestock support services e.g., markets, climate information
<p>Group 3: Dryland farming - risk management (semi-arid) The vision statement for 2050: <i>Resilience dryland community through better risk and disaster management</i></p> <ul style="list-style-type: none"> • Operationalize priority actions for climate risk management • Synthesizing information on vulnerability • Engaging different social groups (youth and women, disabled) • Participatory community climate and environmental monitoring 	<p>Group 4: Dryland farming – productive (semi-arid) The vision statement for 2050: <i>Communities who are economically empowered, highly productive and realizing their aspirations in the face of a changing climate with equitable access to and utilization of social economic and natural resources and services in semi-arid drylands.</i></p> <ul style="list-style-type: none"> • Integration of indigenous innovations with scientific knowledge and technology • Value chain development and market linkages • Community driven natural resource management • Strengthened socio-economic services and infrastructure such as health, education and roads etc.

One of the critical challenges in addressing resilience in drylands, is to identify systematic community based processes that judiciously promotes and leads to understanding of drylands and pastoral livelihoods and of traditional adaptation systems that have been relied upon by pastoralists and integrate knowledge of these into CBA development. Despite pastoralists being exposed to a complex array of climatic shocks and stresses that compromise their food and livelihood security, contribute to conflict, and erode the natural resources upon which they depend, they hold valuable traditional knowledge on how to monitor weather changes and be able to cope accordingly. However, this is rapidly losing meaning because of the unpredictable weather changes and the traditional knowledge is unable to keep pace and therefore needs to be complemented by other sources of information.

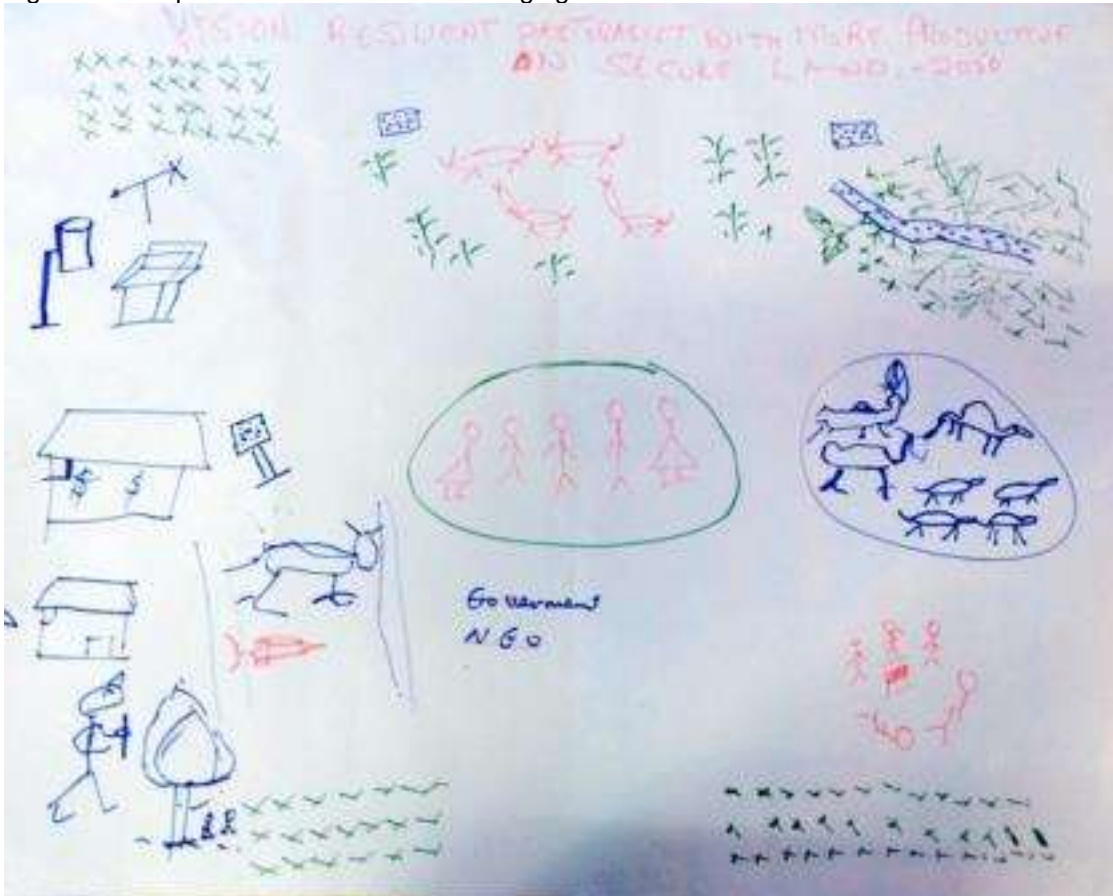
6.3 Group Presentations on vision statements, good principles and building blocks

All the four groups presented their visions for drylands farming and pastoralists. At the end of the presentation, key participants working directly on policy issues provided feedback to the groups.

6.3.1 Group 1: Pastoralist - Managing Risks (in a very dry environment)

The vision statement for 2050: ***A resilient pastoralist system with more productive herd on well managed, secure and conserved lands, having access to products and services*** (Figure 5).

Figure 5: Group 1 Vision: Pastoralists managing risks



Components of the above vision entails:

- Resilient pastoralists (by choice)
- Peaceful, safe and secure families
- Well educated/informed
- Fewer pastoralists
- Access to solid climate information networks
- Large land sizes
- Excellent extension services (e.g., vet drugs, breeds, fodder management, Artificial Insemination)
- Reliable markets
- Good infrastructure (e.g., abattoirs)
- Access to fodder
- Access to credit and finance
- Access to human health facilities
- Living in well managed and conserved ecosystems
- Strategic resources (pasture, water and minerals) shared equitably
- Secure land tenure
- Government driven sedentarisation
- Privatization
- Leading community driven/responsive change

Good Principles to achieve the above vision are:

- Transboundary approach
- Building of existing structures and strengthens and capacities

- Multi-stakeholder coordination approach (including integrated policy development)
- Guided by a well-coordinated framework (e.g., the IGAD Drought Disaster Resilience and Sustainability Initiative - IDDRISI)
- Equity (fairness) in processes and outcomes
- Good governance
- Flexible decision-making e.g., in budgets whereby priorities can change
- Community driven planning and strategies
- Evidence based policy planning

Building block activities are:

The top 3 building block activities are:

- Climate Information for Decision Making
- Buffer resources and risk spreading
- Linking Relief and development (holistic risk management)

By taking an evidence-based approach to policymaking, governments can enact favorable policies that can transform the lives of pastoralist and build their resilience.

Others include:

- Establishment of community driven early warning systems/structures...involved in identification and monitoring of risks
- Downscaling climate information services.... sharing with pastoralists in a way they can understand and utilize the information (inform their actions-enable them make decisions) (Participatory scenario planning)
- Recognize indigenous knowledge and blend with the scientific knowledge on forecasting of weather
- Risks go beyond climate and include conflicts for scarce and degraded resources, loss of customary institutions. Therefore we need conflict management through existing traditional structure and government
- Equitable sharing of resources
- Index based livestock insurance
- Establishment of Meteorological observatory
- Complementary livelihoods
- Applying Livestock Emergency Guidelines and Standards (LEGS) e.g., destocking and off take, feed resource banks
- Ending drought emergency (EDE)
- IGAD's Drought Disaster Resilience and Sustainability Initiative (IDDRISI) for the Drought regional Horn of Africa project
- Improving livestock services (import/export facilitation and commercialization)
- Strategic establishment of Buffer resources to manage drought e.g., Water conservation for managing water stress, range lands, feeds/fodder, capacity and skill, at community level
- Enabling policy environment and institutional frameworks (e.g., specific policies for drylands)
- Flexible planning and funding (e.g., Budgeting)
- Linking Relief and Recovery with long term Development

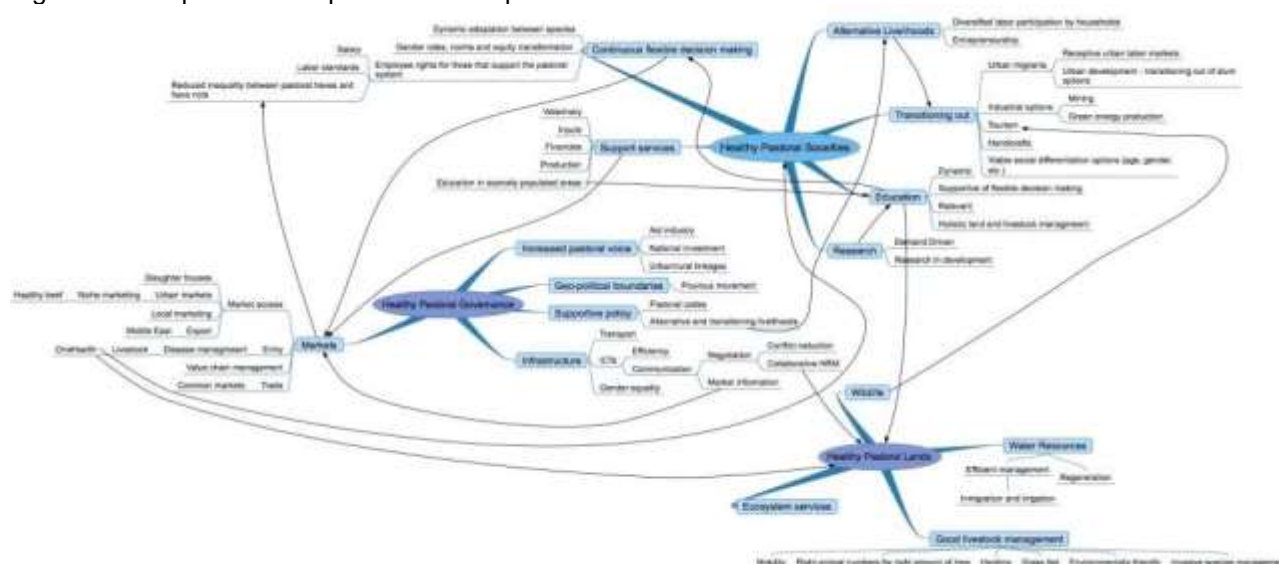
Reactions from Policy Specialists

- Vision requires more information
- Linking relief with development will perpetuate dependence. At 2050, do we still want to link with relief? Risk management should be part of a continuum.
- Principles are broad and devoid of the reality of the intensity and frequency of climate change impacts
- The issue of pastoralist totally not dependent on safety nets by 2050 may not be practical due to uncertainty of climate change... but maybe reduction in number of pastoralist using safety nets is achievable. Occurrence of uncertainty will be there in 2050... pastoralist dependent on safety nets will be minimal

6.3.2 Group 2: Pastoralist - productive (in very a dry environment)

This group did not develop a 2050 vision statement but developed a complex detailed mind map (Figure 6).

Figure 6: Group 2 Mind map – Pastoralist productive



Good Principles

- Policies, research and services for pastoralists should be more demand driven
- Pastoralists having access to knowledge a voice in (flexible) decision making and choices
- Increased opportunities for multi stakeholder engagement which combines knowledge sources
- More equitable wealth distribution /incentives for different groups, including government/public – private sector regulations
- More coherent and large scale planning in pastoral areas (e.g. IGAD/regional) including NRM, socio-political systems, value chains and governance
- Pastoralists will have voice and access to information
- More access to information for livelihood choices and NRM planning
- More access to capacity building and education
- Monitoring range and vulnerabilities and communication outwards
- Combining external and local knowledge

Building Blocks:

- ICT and communication technologies supporting social networking and access to integrated knowledge
- Improve linkages rural/urban, poor/rich, to support dropouts with livelihood options.
- Favorable pastoralism policies. Policies, research and services should be more demand driven and voice of dryland people is heard and incorporated in policies
 - Policies to strengthen pastoral systems
 - Intergovernmental Agency for Development (IGAD) regional policies, e.g. transhumance protocol
 - Land use policies to address communally owned lands
 - Cross-border policies on regional trade and movements
- Improving communications systems
 - ICTs and regular interaction between stakeholders and strategize
 - Definition of roles between stakeholders, value of working together, facilitated by ICTs
 - GP: accessible ICTs systems
 - Language – translation services available, and internet everywhere
 - Solar energy
- Education and research support services. Governments investing more in formal education systems in pastoral areas
 - More dynamic/relevant
 - Government investments in better education systems
 - Research
- Pastoral demand driven research is adopted by research agencies and results are being used by pastoralists / development practitioners
 - New livestock disease?
 - Sustainable innovation?
 - On effect of climate change on vegetation/range – is there any evidence?
 - Support services
- More investments in livestock support services by private sector, government and development actors
 - Flexible veterinary services vs. changing demands on types of diseases
 - Investment in relevant extension services, e.g. Pastoral Farmer Schools with support of traditional governance structures
 - Finance – flexible funding, also by private sector, livestock as collateral, reaching out in remote areas
 - Information – through ICTs, extension services, market information
 - Input supply – fodder production in selected areas
- Markets
 - Integration of meteorological information with market information, needs to be incorporated in common sources (see communication)
 - Inequalities, market related, access, control, benefits, - transformative approach to pastoral participation and benefits for equal distribution of benefits.
 - Need for downscaling of information
 - Less linear approach to information, more thinking in information networks / webs to give more opportunities.

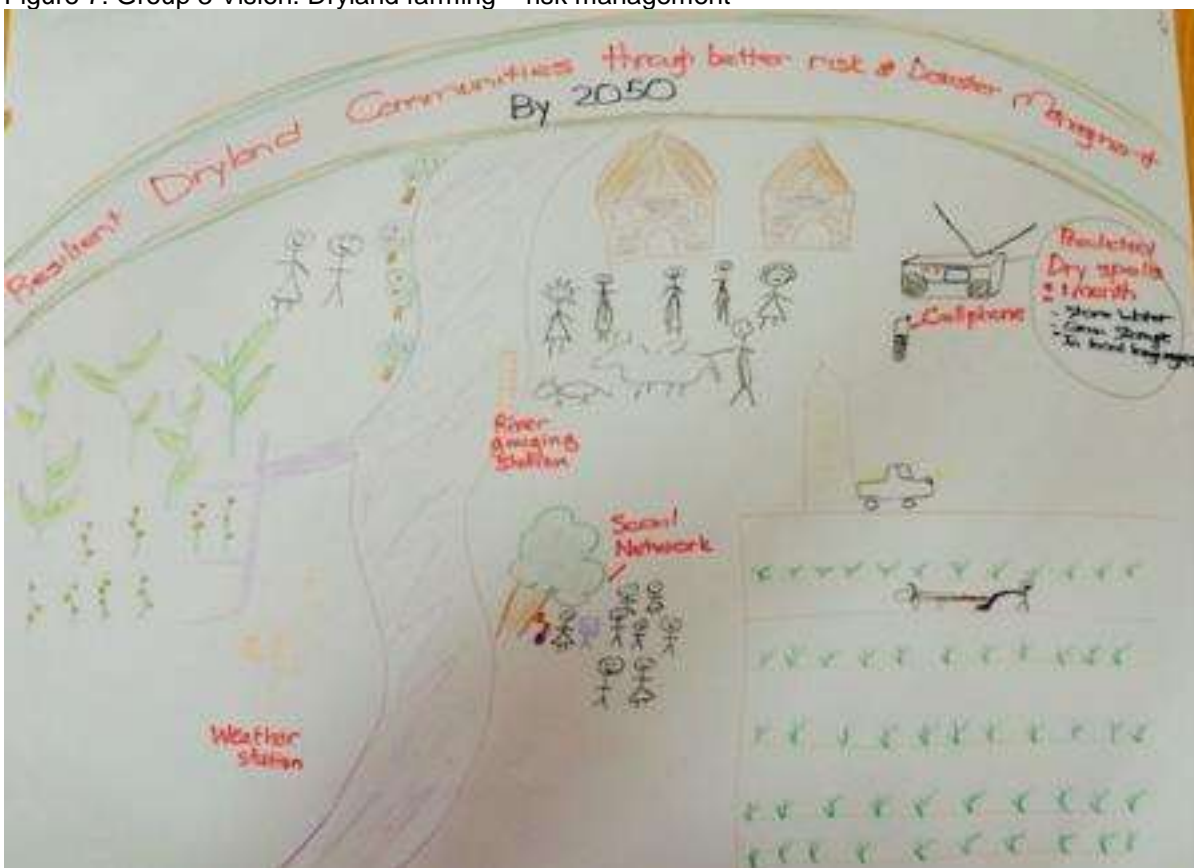
Reactions from Policy specialists

- Drylands are now being considered for green energy.... and this should be added to the vision diagram
- Use of terms - Equality vs. Equity. Equality is not easy to achieve but equity is fairness in resources distribution and participation
- The group approached a resilient pastoral using the term “Healthy”.... but considering a changing climate... what does healthy imply?
- Consider a policy environment that can perpetuate a ‘healthy environment’
- We should appreciate stresses and pressure that might come from outside the drylands?
- How do we address the issue of education since they are migratory communities?
- Gender equality should be incorporated in all three main components, i.e., governance, lands and societies.

6.3.3 Dryland farming - risk management

The vision statement for 2050: **Resilience dryland community through better risk and disaster management** (Figure 7).

Figure 7: Group 3 Vision: Dryland farming – risk management



Components of the vision are:

- Food security and economic empowerment
- Sustainable agriculture with good infrastructure
- Good governance
- More resilient⁹ community through risk and disaster management by 2015

⁹ Definition of Resilience for this group was: pastoralists being able to manage risks for improved livelihood

Good Principles:

- Enabling policy environment and implementation frameworks
- Equitable access to the resources
- Access to information and technologies
- Building and aligning and with existing policies strategies
- Sustainable natural resource management, ecosystem based approach
- Integration and collaboration with stakeholders
- Building on existing local knowledge, skills and good practices
- Evidence based approach
- Flexibility in decision making
- Capacity enhancement

Building block activities

- A policy review and identification of gaps to inform planning at national and implementation at local level
- Operationalize priority actions for climate risk management
- Synthesizing information on vulnerability
- Engaging different social groups (youth and women, disabled)
- Participatory Monitoring and Evaluation and, learning
- Strengthening multi stakeholder forums to deliver climate services at national and sub-national level
- Balanced approach that integrate climate risk management with good agricultural practice
- Knowledge sharing and management
- Community participation in scenario planning
- Strengthen social support network and economic linkages
- Participatory community climate and environmental monitoring
- Harnessing opportunities arising from climate change

Reactions from Policy specialists

- The group did not consider downscaling climate services in the building blocks
- The vision sounds more like a Mission
- Strengthening Multi-stakeholder involvement
- The group should have addressed resources (e.g., for infrastructure) from the community, government, donors and collaboration
- The group mentioned that the community will be self-sustainable, what about integration into the global economy?
- Risk reduction in drylands should stress livelihood diversification

6.3.4 Dryland Farming - Productive (semi-arid)

The vision statement for 2050: ***Communities who are economically empowered, highly productive and realizing their aspirations in the face of a changing climate with equitable access to and utilization of social, economic and natural resources and services in semi-arid drylands*** (Figure 8).

and better resource management

Figure 8: Group 4 Vision – Dryland farming Productive



Components of the vision

- Economically empowered and self-sufficient
- Prosperous communities in a healthy environment
- Farming systems that are resilient, highly productive, food secure communities with equitable access to and utilization of social, economic, natural resources
- Economically empowered, highly productive, with full access to social services including health, education and justice in the dry lands
- Better lives in dry land farming areas
- Reliable water sources
- Able to grow sufficient crops for both income and food security
- Organized communities so able to address their problems themselves. More stable communities
- Not trial and error farming (planting some old traditional crops)
- Moved from subsistence farming to farming which is geared towards economic advancement
- A change of perception about farming
- Commercialization and value addition of livestock production
- Localized innovative adaptation approaches with the community able to cope with extreme shocks. Also communities owning and championing approaches
- Generate as well as having access to climate information services
- Agriculture linked to vibrant markets
- Equitable use of resources (women and youth equally benefiting)
- Production based on ecological production system e.g., climate smart agriculture and Evergreen agriculture
- Access to higher education and skills based training at all levels for all community members
- Communities recognize own their potential and diversify their income sources

- Communities have access to social infrastructure communication, schools and justice systems

Good Principles

- To understand the local and national context (social and economic environment)
- Give equal opportunity for participation in decision making, planning and resource allocation
- Foster synergies (good coordination and linkages)
- Integration of indigenous knowledge with scientific knowledge
- Long term focus rather than short term focus
- Flexible approaches
- Realistic expectations that are the expectations of the community not of the change agents. Remain ecologically conscious and work towards sustainability and community ownership

Building block activities

Top 4 building blocks are:

- Integration of indigenous innovations with scientific knowledge and technology
- Value chain development and market linkages
- Community driven natural resource management with emphasis on water
- Strengthened socio-economic services and infrastructure such as health, education and roads etc

Others include:

- Advocate for conducive policy and finances
- Establish baseline/situational context and vulnerability assessment
- Effective climate change information services tailored to the local level context
- Strengthening linkages with service providers
- Capacity for improved and integrated livestock and crop practices/ technologies
- Diversification of livelihoods
- Capacity for value chain development
- Capacity for financial management, literacy and entrepreneurship
- Improved knowledge and information sharing through various platforms and documentation
- Established village seed /grain systems
- Community based managed natural resources (water, land, soils)
- Linkages to scientific research and scaling up research recommendations
- Control of pests and diseases in crops and livestock
- Promotion of local innovative practices across all sectors
- Strengthening rural institutions/organizations and government structures at all levels
- Mainstreaming gender, HIV AIDS disability (emerging issues)
- Up-scaling best practices
- Biodiversity conservation in the drylands ecosystems
- Village savings and loans and micro finance
- Facilitate/embrace infrastructure development
- Universal access to education at all levels and skills based training

Reactions from Policy specialists

- Ecosystem based adaptation approaches and principles should be integrated into the vision
- The vision is too wordy... should be shortened. It reads more like a mission than a vision
- Fostering synergies is mentioned... this is something lacking in most countries
- Measure of high productive might be a challenge in drylands as it contributes to the vision above... Measure of productivity can be done using monitoring and evaluation.
- What is the possibility of governments to work with various stakeholders in delivering the vision e.g., In Zambia, the government is already involving stakeholders and in Kenya the constitution demands for a participatory approach in development plans including involvement of CSOs, NGOs and the local communities
- What opportunities come with CC in terms of dryland farming? e.g., crop varieties that can thrive in drylands.

September 3, 2014.

Late afternoon session: Presenting back group work results and critical reality check

6.3.5 Synergies, complementarities, overlaps, similarities and differences mentioned by all groups in vision statement, good practices and building blocks

- Climate information sharing and communicating to end users
- Multi-sectoral and multi-stakeholder engagement
- Building on local knowledge and integrating with scientific
- Ecosystem or environmental approaches
- Linking relief, rehabilitation and development
- Strengthening of various policies that can lead to development at local level.
- Knowledge management from different sources that can lead to evidence based decision making
- Productive livelihoods and risk management
- Consideration of pastoralist as part of the global community - still to be unpacked
- Livelihood diversification and complementary livelihoods beyond pastoralism and farming
- Gender equity
- Value chain - this still needs to be unpacked
- Flexible decision making - still to be unpacked on how to make this happen
- Policy dimension
- Include different people with diverging disciplines e.g., inviting relief organizations, Insurance programs, financial institutions.

The youth are not addressed in drylands developments. How can we ensure that the youth are retained in pastoralism?

7 Coming to a Consensus

Learning objective: Recommendations for policy and practice. Coming to a consensus. Key actions for way forward and new partnerships.

Building the Knowledge Wall and Key Recommendations for Policy and Practice emerging from the knowledge wall.

Throughout the 4-day learning event, participants engaged actively in building the knowledge wall, writing important themes or building blocks and issues related to the themes that can provide impetus for integrating CBA and resilience in drylands. At the end of the event, eight critical themes were identified and included 1) Changing face of the drylands, 2) Multi-stakeholder interactions, 3) Integrating knowledge source, 4) Community based focus, 5) Decision making during uncertainty, 6) Policy, Agency and Rights, 7) Timescales and 8) Measuring Resilience. Building the knowledge wall right from the first day of the learning event provided an opportunity for participants to reflect at the end of day. The participants appreciated the importance of the knowledge wall as a new method for gathering emerging issues and a way for introverted participants to share their thoughts and ideas for CBA and resilience in drylands.

Drawing upon the Open Space Tool, the participants discussed emerging issues from the knowledge wall. Topics for groups discussions were a) Justice and rights in Community Based Adaptation, b) CMDRR/CBDRR and Climate change adaptation, c) Community ownership and aspirations, d) Decision-making under uncertainty, e) Equity and vulnerability, f) Holistic Land and livestock management, g) Integrating knowledge sources, h) HIV/AIDS amidst Climate change, i) Climate Information, j) Ending Drought Emergencies, k) Measuring resilience, l) Climate Change, m) Multi-sectoral interactions, n) Governance and Policy and o) Risk Management.

The open space discussions were conducted in eight groups, involving two sessions. The participants discussed issues emerging from each theme and the recommendations necessary to build community resilience. During the second session, participants ranked the most critical recommendations and the results are presented in the table below. The most important activities recommended were mainstreaming risk management into all sectors, establishing baseline against which to measure change, facilitating inclusive community visioning for new ideas and aspirations and then using climate information to plan how to move towards this vision, community ownership and aspirations, mainstreaming multi-stakeholder platforms into local government level review and planning systems (Table 4).

Table 4: Emerging themes for CBA and resilience in drylands and recommended activities

Building Blocks	Recommended activities
Community ownership and aspirations	<ul style="list-style-type: none"> • (24)* Facilitate inclusive community visioning for new ideas and aspirations. Then use climate information to plan how to move towards vision • (6) Communities are heterogeneous hence community driven planning should take this into consideration • (5) Build on programs that reflect the social and cultural structure knowledge
Decision-making under uncertainty	<ul style="list-style-type: none"> • (18) Ensure reliable information informs the decision in uncertainty (level of probability) • (15) Diversify/flexible options to manage uncertainty • (13) Strengthen and recognize local structures to support decision-making in uncertainty
Measuring Resilience	<ul style="list-style-type: none"> • (27) Establish baseline against which to measure change on resilience • (20) Develop innovative tools/approaches for measuring resilience
Multi-sectoral interactions	<ul style="list-style-type: none"> • (20) Mainstream multi-stakeholder platforms into local government level review and planning systems • (7) Use Multi-stakeholder forums to document best practices, case studies, reports etc. and disseminate • (6) Ensure platforms do foster dialogue which leads to locally relevant action responding to needs
Governance and Policy	<ul style="list-style-type: none"> • (19) Strengthen political leadership and buy in and commitment of resources for climate change adaptation at local level • (11) Increase community participation and voice in governance structures and policy processes • (16) Recognize value of traditional governance structures and integrate into formal governance and policies
Risk Management	<ul style="list-style-type: none"> • (8) Community led risk management • (29) Mainstreaming risk management into all sectors • (8) Risk spreading - insurance, diversification of livestock options
Integrating knowledge Sources	<ul style="list-style-type: none"> • (7) Leveraging on existing technologies (mobile phones) • (18) Inventory and review of indigenous knowledge practices and facilitating knowledge access. Also use the generated knowledge for local decision making • (7) Framework for indigenous knowledge recognition in policy

*Number in parenthesis reflects the importance attached to the activity.

7.1 Commentary on the knowledge wall: Recommendations for policy and practice

September 4, 2014.

Morning Session: Keynote commentary on the wall with new insights and actions

7.1.1 Knowledge Wall Theme 1: Changing Face of the Drylands

- Key Question - what is different for drylands? It is a fragile and challenging environment to pursue a livelihood. It is one ecosystem that will face more damage than any other ecosystem. The drylands are marginalized in terms of investment and policies. Climates are extreme. Drylands are multifunctional environments where demands on natural resources (land, water, food) with different land users (pastoralists, farmers, conservationists (fauna and flora), energy, business, infrastructure)
- Challenges of Drylands (climate driven and non-climate driven). Farmers and pastoralist across ESA face similar challenges including (Figure 9):
 - Climate change impacts exacerbate already difficult life and livelihoods.
 - Environmental/rangeland degradation

- Disrupted social and ecological fabric
- Invasive species
- Population growth leading to increase in GHG emissions
- Social dynamics-breakdown of family structures, disruption of extended families, pastoral dropouts esp. the young generation who are looking for alternative livelihood in peri-urban and urban centers.

Figure 9: Example of a knowledge wall-changing face of drylands



- Conflicting land uses in the drylands
- What can be done about this? Complementary livelihoods, facilitation of mobilization when resources are less and degraded, practical new innovative scalable solutions to address future adaptation for climate change in drylands

7.1.2 Knowledge Wall Theme 2: Multi-stakeholder interactions

- The need to mainstream climate change information across all sectors and projects
- Need for multi-stakeholder interpretation to provide advisories e.g., PSP
- Taking advantage of existing regional structures, programs and frameworks e.g., IGAD-IDDRISI, AU Policy framework
- NGOs should work with government at all levels of interventions to ensure sustainability as well as lesson sharing
- All actors in climate change adaptation and resilience should come together, share lessons and avoid duplication. Working in isolation is not effective (Case study 3).

7.1.3 Knowledge Wall Theme 3: Integrating knowledge source

- Integrate indigenous and scientific knowledge with special focus on climate information to help communities make decisions for adaptation
- Need for joint knowledge generation (scientists and communities and other stakeholders)
- Networking - building on networks
- Joint shared learning
- Access to information by different end users
- Communicating the knowledge... how effectively are we communicating it to the endusers... is the information readily accessible to pastoralists?
- There is still gaps in

Case Study 3: Kenya Putting community resilience into practice

In Kenya, community groups living in drylands, CBOs and NGOs are united into a common platform called the Waso River Users Empowerment Platform (WRUEP). The WRUEP has become the largest institution in Isiolo County and represents an area with a population of more than 143,000 people. This platform provides information on early warning for floods and droughts, early action preparedness, and supported community driven development activities. The platform members are trained in several DRR and development themes and develop joint activities. For the future, the groups are now looking into a radio warning system for drought and flood warning methods to make pastoralism more resilient...adapted from CordAid (2013).

downscaling climate information to endusers

- What do we need to do differently in order to trigger change?

7.1.4 Knowledge Wall Theme 4: Community based Focus

- Community participation (community led-action planning, participation at all levels, working with the better off families as agents of change if empowered, involvement of community in design and implementation of actions, participatory scenario planning (Figure 10).
- Policy (community driven, community involvement in decision making, equitable access to resources).
- Capacity building
 - Build the capacity of community on climate change adaptation
 - Empower communities on learning and sharing experiences and practices
 - Engaging communities on generating information
 - Ensure sustainability and ownership
 - Encourage collective action plans
 - Invest in local leaders
 - Promote local governance
- Climate
 - Combine Information technology and scientific information at all levels
 - Participatory community climate and environment monitoring
 - Building local capacity on early warning systems, community forecast
 - Pilot CIS in different countries
 - Bring rain gauges and climate information to the community
- What does the community want?

Figure 10: Knowledge wall – Community based focus



7.1.5 Knowledge Wall Theme 5: Decision making under uncertainty

- Climate data, climate information and products
 - Recording climate data in drylands involving communities
 - Downscaling the information to local level including uncertainties
 - Have climate info products that are responsive to changing needs of endusers and demands
 - Timescales short term (DRR and early warning), long term (changing risks, uncertainty, development)
- Approaches (Can communities be resilient in uncertain future?)
 - Scenario planning for climate information and other factors influencing the future
 - Communicating uncertainty to make informed decisions
 - Better linkage amongst adaptation, humanitarian, DRR etc.
- Flexible decision making and funding (will adaptation and resilience now hold in the future)
 - Managing risk and an uncertain future
 - Informing alternative livelihoods (options)
- Multi-stakeholder interactions

7.1.6 Knowledge Wall Theme 6: Policy, Agency and Rights

- Governance and policy that enable flexible decision making
- Evidence based policy planning
- Integrated policy development process
- Continuous knowledge development to support policy development
- Enabling policy for CBA or community driven actions plans
- Need for effective legal and enabling frameworks e.g., Index Based Livestock Insurance Survives (IBLIS)
- Policy to address CBA financing
- Good governance
- Agency and rights not addressed at all

7.1.7 Knowledge Wall Theme 7: Timescales

- Time scales matter (e.g., seasonal forecasts matter and also looking forward to more than a season to future forecasts. In terms of funding, long-term is essential to make fundamental change and build resilience

7.1.8 Knowledge Wall Theme 8: Measuring Resilience

- This is an evolving science and it is difficult to measure due to its multi-disciplinary, multi-sector and the involvement of diverse groups who should all be included for resilience measurement to be meaningful
- Need for new innovative tools to help us better understand and measure resilience e.g., CARE's Participatory Monitoring, Evaluation, Reflection & Learning (PMERL) for Community-based Adaptation is a new tool that will help us develop framework for measurement (Case Study 4).
- We focus on numbers instead of behavioral change-real transformational change that is occurring within the community
- Understand the resilience vision... what are we striving towards?
- Integrate qualitative and quantitative to gather evidence towards resilience.
- Resilience is a vision we strive to achieve but we might never get there.

Case study 4: PMERL for CBA

PMERL approach helps local communities address the challenges of climate change. It involves integrating participation, joint learning and reflection processes into the monitoring and evaluation of CBA. It is based on 4 principles, i.e., Participatory, Practical, Replicable and Relevance. It's a tool that provide stakeholders with a platform to empower them to articulate their own needs, methodology for developing and monitoring against CBA indicators and to measure changes in adaptive capacity (Adapted from Ayers et al., 2012)

Participants' insights on knowledge wall experience

- New methods of gathering data
- It offers culmination of all discussions to enable us reflect and move forward...
- As climate scientists, we are overwhelmed as we work with community. And multi-stakeholder involvement is critical to generate information
- It was excellent opportunity for participants who didn't have a chance to talk during session to put down their thoughts

7.2 Key Recommendations for Policy and Practice

September 4, 2014.

Mid-morning to early afternoon session: Commentary on the knowledge wall using Open Space Tool to discuss emerging issues. Filtering differences and overlaps and important building blocks for a communiqué

Round 1

7.2.1 Justice and rights in Community Based Adaptation

- Key insights and issues
 - Right to refuse project interventions (on the agreement of communities)
 - Empowerment can result in unfair burdens on valuable communities
 - Issues around justification for site selection
 - Accountability and transparencies
 - Pre-determined goals v, community preferences
 - Dealing with heterogeneous groups
 - Respect of recognition of cultural issues
- Recommendation
 - Bottom – up approach (adequate consultation)
 - Inclusion and meaningful participation
 - Adequate feedbacks and information dissemination
 - Institutional mechanisms to address governances (injustices and human right violations)
 - Commitments
 - Strengthening – bottom up approaches responsiveness)

7.2.2 Community Managed Disaster Risk Response and Community Based Disaster Risk Response (CMDRR/CBDRR) And Climate change adaptation

- Key insights and issues
 - Establish CMDRR committee (involving government, NGO, CBOs and community)
 - Conduct participatory Disaster Risk Assessment (PDRA)
 - Community resource mapping and assessments
 - Develop community action plan (Development and contingency plans)
 - Subcommittees (for early warning, water and rangeland management and PA Emergency response committee)
 - Capacity building
- Recommendations
 - Climate info exchange and disseminations to the grass root level not satisfactory
 - Strive to achieve long term resilience building
 - Additional capacity building on CC adaptation
 - Integrate approaches, methods and tools
- Commitments
 - Scale up the CMDRR approaches and methods

7.2.3 Equity and vulnerability

- Key insights and issues
 - People are different, we can't assume we 'know' as 'experts' and differences are not static
 - Transitioning out of a livelihood is part of adaptive capacity, making working with the most vulnerable sometimes technically unfeasible, so sometimes working with power structures is necessary
 - Transformation requires social safety nets and springboards to be in place. Interventions in the past (humanitarian) have often increased vulnerability by destroying them.
- Recommendations:
 - Invest in analysis and assessment of social differentiation before intervening in planning processes etc.
 - Stop 'women's and other special' programs as the automatic intervention for gender. Address norms, rules etc. driving social differentiation;
 - Understand and work with exposure, sensitivity and adaptive capacity to address vulnerability
 - Have grievance mechanisms and accountability structures in place
 - Include transitioning out in adaptation programs
 - Target transformation making sure social safety nets and spring boards are healthy
- Commitments:
 - CGIAR gender strategy and plan¹⁰
 - Adopt the National Implementing Entity (NIE) / National Environment Management Authority (NEMA) social risk management plan for Kenya

7.2.4 Holistic Land and Livestock Management (HLLM)

- Key insights and issues
 - Communities practicing HLLM are growing in numbers (Kenya, Ethiopia, Namibia, Zimbabwe, South Africa, Burkina Faso and Niger) and the attention of decision makers is growing)
 - People are increasingly recognizing that land degradation due to overgrazing is a problem of time not cattle numbers, and that the solution is good grazing management and not herd reduction
 - Communities can and have made the decision together to rehabilitate their land but broken traditional practices must be overcome
 - When communities come together to manage their resources/assets it must be clear to all how benefits will be shared
 - Pastoral to pastoral visits to communities practicing HLLM are important for helping people see how other communities have hashed out their differences and come together
 - Policy institutional support is critical but will not happen unless driven by communities practicing HLLM
 - Land and decision making rights are different in difficult countries, so success with the above needs knowledge and national awareness advocates
- Recommendations
 - Build the body of national advocates
 - Give communities time to come together (overcome short project cycles)

¹⁰ http://library.cgiar.org/bitstream/handle/10947/2630/Consortium_Gender_Strategy.pdf?sequence=4

- Provide monitoring and evaluation to grow the body of evidence - the learning documentation is just as important as the data
- Commitments
 - The World Agroforestry Center (ICRAF) decision hub will try to bring people together to develop proposal for HLLM in East Africa.

7.2.5 Integrating Knowledge Sources

- Key insights and issues
 - Make it a policy requirement
 - Understanding capacities and limitations of each
 - Merging theory with practices (action research)
 - Verification of indigenous knowledge through science and acknowledge non-verifiable
 - Acknowledgment of indigenous knowledge sources
 - Valuing the context in diverse communities and recommend similarities
 - Need for documentation and profiling of the knowledge from different sources

7.2.6 HIV/AIDS amidst Climate Change

A continuing challenge - what do we do?

- Key insights and issues
 - Impacts of CC are heavier in communities affected by HIV because availability of food is challenged. Healthy status is weak and not well supported by options
 - Increased opportunities for the spread of HIV/AIDS because of increased mobility and increased vulnerability as people look for survival
 - Pastoral communities move to towns and hardly have knowledge on protection from HIV/AIDS
 - Merge issues of HIV in environmental developmental issues
- Recommendations
 - Strategic focus and effort to address the affected communities
 - Need to network with health services providers
 - Multi-sectoral approach – Public Health Education (PHE)
 - Integrate awareness, VCT, ART/T support positive living behavior
 - Diversified livelihoods options especially for women and youth
 - HIV remains a cross-cutting issue in the face of climate change. If ignored it will be difficult to build resilience towards climate change
- Commitments
 - Mainstreaming HIV
 - Look for communication champions
 - Do research linking HIV and climate change
 - Justify case for action-joint HIV policy

7.2.7 Climate Information

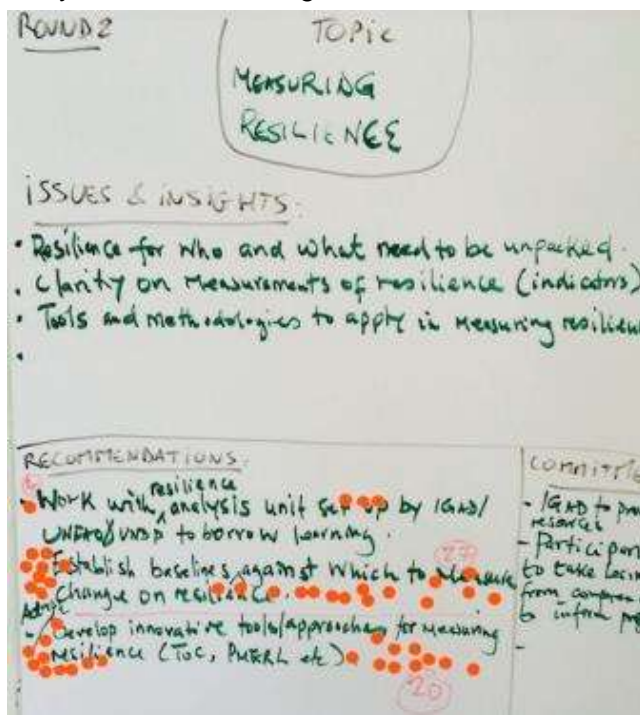
- Key insights and issues
 - Timeliness - when do the end users need the weather forecast information. It should be timely to enable people make decisions on a timely manner.
 - Poor availability of tools and human resources to interpret forecast and make it into usable information for endusers

- Capacity building on what is available and its application
- Accessibility of information (communication)
- There are existing initiatives to produce information for longer timescales of climate change e.g. HELIX and C-Adapt projects
- Forecast is not total information. It is a basis to generate further/additional information/impacts/consequences that are useful
- Recommendation
 - More training for intermediaries and communities/ database more accurate
 - Including climate issues right from the lowest level of education (curriculum development)
 - Link up with the HELIX and C-Adapt projects
- Commitments
 - NGOs
 - Universities
 - Government
 - IGAD's Climate Prediction And Application centre (ICPAC)/World Food Program (WFP)

7.2.8 Measuring resilience

- Key insights and issues (Figure 11)
 - Universal resilience equation/indicators of resilience
 - Resilience for who and what?
 - Unpacking the components of resilience
 - Indicators of resilience at various level of the results
 - How do you measure that which is dynamic like resilience?
 - Resilience is not about wealth/material but knowledge and understanding with a spiritual context
- Recommendations
 - Work with resilience analysis unit
 - Use of TOC to facilitate measurement
 - Resilience is context specific and dynamic - long term
 - Indicators to measure resilience from its components i.e., livelihoods climate change adaptation, DRR, Policy and enabling environment
 - Resilience is a process and need benchmarking
- Commitments
 - IGAD/UN-FAO/UNDP

Figure 11: Ranking of recommendations for key theme: Measuring Resilience



7.2.9 Ending Drought Emergencies

- Key insights and issues
 - More frequent extreme climates events resulting in emergencies
 - There is delayed and uncoordinated response to the risk leading to large losses in livelihoods
 - Recurring natural resource based conflicts
 - Social problems resulting from loss of livelihoods leading to dependency
- Recommendation
 - Mainstream climate information into planning at all levels
 - Strengthen and create institution to coordinate intervention in short time
 - Strengthen traditional peace/conflict resolution processes
 - Drought monitoring integrated into all sectoral and programs
- Commitments
 - Government to coordinate
 - Government, partners. Donors
 - Pastoralist and donors

7.2.10 Climate Change

- Key insights and issues
 - What is the community's perspective?
 - Not aware
 - Communities are saving their contribution to climate change e.g., cutting trees, exhausted soils, reduced production (cyclic), overgrazing, reduced/loss of biodiversity, wood fuel, charcoal)
 - Changing nature of communities
 - Conflict over resources
 - Resistance to change
 - We have interfered with environment, particularly in drylands - no longer possible to keep dryland fallow
 - For many pastoralist, its only about rainfall
 - Erratic weather 'a curse"
 - Both aware of causes of change
 - God is angry
 - A way of life - that's just how things are
 - It is government - jargon confusing
 - Changing seasons/rainfall patterns
 - Communities want to be heard
 - Communities want to be drivers of changes - not driven by them
 - It is the effects of climate change the communities experience
- Recommendation
 - Let communities define climate change in their own way
 - Organize communities into groups
 - Facilitate processes to analyze the problem of climate change
 - Let them exploit their inherent capabilities
 - Work with the community to communities - 2 way communication process
- Commitment
 - Strive to understand the communities perspectives and involve them\Let us diversify sources of livelihoods
 - Integrate development

Round 2

7.2.11 Measuring Resilience

- Key insights and issues
 - Resilience for who and what needs to be unpacked
 - Clarity on measurements of resilience (indicators)
 - Tools and methodologies to apply in measuring
- Recommendations
 - (4) Work with resilience analysis unit step up by IGAD/UN-FAO/UNDP to borrow learning
 - (27) Establish baseline against which to measure change on resilience
 - (20) Develop innovate tools/approaches for measuring resilience (TOC, PMERL etc.)
- Commitments
 - IGAD to provide resources
 - Participants to take lessons from this learning event to inform projects

7.2.12 Decision-making under uncertainty

- Key insights and issues
 - Gender considerations under uncertainty at household levels
 - Availability of resources (optimize resource use / not all eggs in one basket)
 - Decision-makers are mindful of potential for failure of the desired event
 - Long term data on CC projection less reliable and limited
 - What does flexible decision-making mean?
 - Decision makers must have the capacity
 - Uncoordinated stakeholders
 - Speed & quality of information and two-way communication
 - Local structures ignored and lack of trust
- Recommendations:
 - (18) Ensure reliable information informs the decision in uncertainty (level of probability)
 - (15) Diversify/flexible options to avoid/circumvent uncertainty
 - (13) Strengthen and recognize local structures to support decision-making in uncertainty
 - (10) Build the capacity of the decision-makers to implement the different options with the flexibility
 - (3) Create an enabling environment for two-way communications among different decision-makers (for rapid and sound information)
 - (0) Multi stakeholder integration with government (to coordinate)
- Commitments:
 - Examples: Now that we are certain of climate change (shocks and stresses), decisions can be made under measurable uncertainty (85%).

7.2.13 Community ownership and aspirations

- Key insights and issues
 - Build community trust, relationship (support localized knowledge and build on existing knowledge)
 - Too many actors / tools confusing to commute
 - Incorporate the rich knowledge and learning
 - Motivation to be part of the community
 - Transparency (recognize city diversity and geographical scale)
 - Community driven planning (downward accountability)

- Respect to the social and cultural structure
- Allow community to protect what they own e.g. 'agriculture' corporates
- Informal and formal education to drylands
- Recommendation
 - (5) Build programs on the existing social and cultural knowledge structure
 - (6) Communities are heterogeneous hence community driven planning should take this into consideration
 - (3) Coordination, multi-sectoral, common entry
 - (4) Inclusion of community at higher level planning meeting
 - (24) Facilitate inclusive community visioning for new ideas and aspirations. Then use climate information to plan how to move towards this vision
 - (4) Understand Community and government institutional structure, trends, engage sensitively to enable change to exclusive norms /systems
 - (4) Policy protection of community rights to land resources, knowledge and information
- Commitments
 - Standard CBA
 - Tool (sharing)
 - Best practices

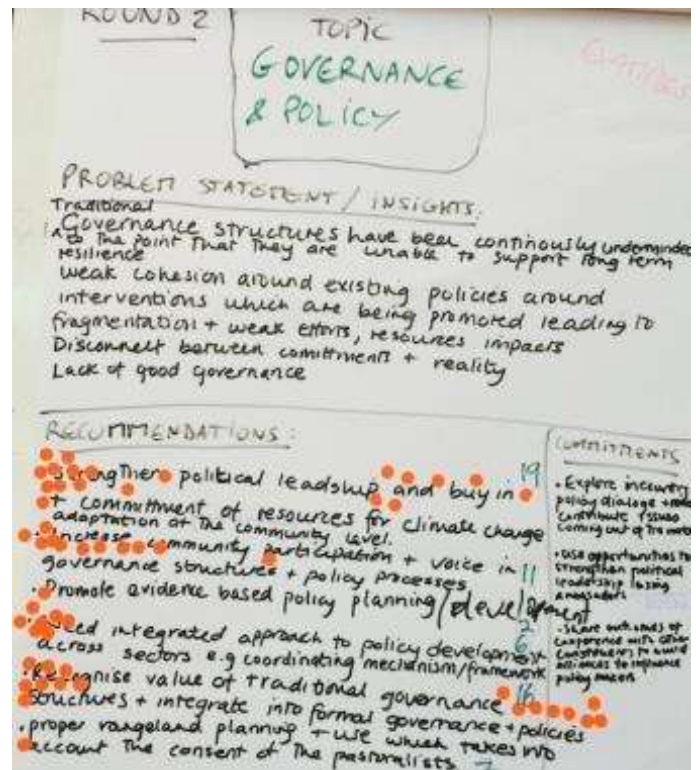
7.2.14 Multi-sectoral interactions

- Key insights and issues
 - Community are key stakeholders
 - Institutional structures which reach to community levels linked to budgets allow for participation and sustainable/regular meeting
 - Non-hierarchical, cross-sectoral platforms allow collective interpretation, trust building, new ideas to emerge and network/communication enhanced
 - Allows for bringing flexibility and dynamism into longer terms plans, based on regular feedback and interactions and planning/decision making
 - Improves coordination, efficiency and avoids duplications
 - Platforms gives a voice of ownership and access to knowledge which is locally meaningful
 - Risks - community gate keepers are not inclusive or as representative as should be. How does information get back to end users?
- Recommendations
 - (20) Mainstream multi-stakeholder platforms into local government level review and planning systems
 - (5) Use seasonal forecast (once/twice a year) as trigger for calling for Multi-stakeholder meetings or other triggers/champions
 - (6) Ensure platforms do foster dialogue which leads to locally relevant action responding to needs
 - (4) Use existing structures to facilitate establishment of Multi-stakeholder forums
 - (7) Multi-stakeholder forums should include storing of best practices, case studies, reports etc. and dissemination for replication

7.2.15 Governance and Policy

- Key insights and issues (Figure 12)
 - Traditional governance structures have been continuously undermined to the point that they are unable to support long term resilience
 - Weak cohesion around existing policies around interventions which are being promoted leading to fragmentation and weak efforts, limited resources impact
 - Disconnect between commitment and reality
 - Lack of good governance
- Recommendations
 - (19) Strengthen political leadership and buy in and commitment of resources for climate change adaptation at local level
 - (11) Increase community participation and voice in governance structures and policy processes
 - (2) Promote evidence based policy planning/development
 - (6) Need integrated approach to policy development across sectors e.g., coordinating mechanism frameworks
 - (16) Recognize value of traditional governance structures and integrate into formal governance and policies
 - (7) Proper range lands planning and use which takes into account the consent of the pastoralist
- Commitments
 - Explore in country policy dialogues and integrate important issues coming out
 - Use opportunities to strengthen political leadership using ambassadors
 - Share outcomes of conference with others constituents to build alliances to influence policy makers

Figure 12: Ranking of recommendations for governance and policy



7.2.16 Risk Management

- Key insights and issues
 - Top down approach of risk management
 - Sidelineing of risk management to DRR only
 - Understand risk profiling and projections
 - Omission of traditional coping strategies
- Recommendations
 - (8) Community led risk management
 - (29) Mainstreaming risk management into all sectors
 - (3) Risk identification, profiling projection
 - (2) Risk reduction – Climate information, complementary livelihoods, eco-tourism
 - (8) Risk spreading - insurance, diversification of livestock options
 - (3) Risk compliant policies/governance e.g., Arid and Semi-Arid Lands (ASALs)

policy

- Commitments
 - Government/partners/community

7.2.17 Integrating knowledge Sources

- Key insights and issues
 - Language of interpretation
 - Validity and applicability - contextual (local specific)
 - Indigenous knowledge facilitates downscaling of information to be locally relevant and useful
- Recommendations
 - (4) Co-generation of knowledge which recognizes value of local sources
 - (2) Acknowledgement of all knowledge generators (sources)
 - (7) Leveraging on existing technologies (mobile phones)
 - (18) Inventory and review of indigenous knowledge practices and knowledge generators (inventory of all forms related to CC and facilitating knowledge access and use generated knowledge for local decision making)
 - (7) Framework for indigenous knowledge recognition in policy

7.2.18 Equity and Vulnerability

- Key insights and issues
 - Communities living in drylands are affected by climate change differently and we cannot assume “we know as the expert” how they are different and the differences are not static.
 - Transitioning out of a livelihood is part of an adaptive capacity. This makes working with the most vulnerable very difficult. This might require working with existing power structures.
 - Transformations requires social safety nets and spring boards to be in place. Past interventions such as humanitarian responses creates more vulnerability
- Recommendations
 - (2) Have grievance mechanism and accountability in place
 - (24) Invest in analysis and assessment of social differences before interventions in planning processes
 - (5) Understand and work with exposure, sensitivity and adaptive capacity to address vulnerability
 - (1) Include transitioning out in adaptation programs
 - (7) Stop ‘women’ and other ‘special’ programs’ as the automatic interventions for gender. Address norms, rules etc. that drive social differentiation
 - (2) Target transformations that makes sure social safety nets and spring boards are healthy
- Commitments
 - CGIAR Gender Intermediate Development Outcomes (IDOs)
 - CGIAR gender strategy and action plans
 - NIE/NEMA
 - Social risk management plan for NIE Kenya program

7.3 Coming to Commitments: Country and personal (organizational)

ESA Country Specific Commitments

The common thread amongst some of the countries that participated in the learning event (that is Uganda, Tanzania, Sudan, Kenya, Malawi, Ethiopia, Somalia) made commitments to initiate or pilot some of the potential solutions suggested that they had learned, which were a) ensure that they integrate local and scientific knowledge, b) collaborate with meteorological services to downscale and disseminate climate information services to pastoralists, c) ensure gender equity, d) adapt CBA and integrate multi-stakeholder approach and e), continue networking with other NGOs, CBOs and government institutions.

7.3.1 Uganda

- Form an in-county working group (follow up on action from conference, joint proposal)
- Engage local, private sectors, CSOs, central governments to priorities, issues of climate change adaptation
- Strategic alliances for effective policy advocacy (passing and implementation) draft climate change policy
- Networking, learning and linking

7.3.2 Tanzania

- Integrating indigenous and scientific knowledge
- Multi sectoral approach in community based adaptation initiatives
- And evidence based policy making
- Reliable climate information disseminated to grassroots with which it is easily understood and used by community
- Strengthen bottom-up approaches in CBA initiatives as well as resilience

7.3.3 Sudan

- Climate information service
- Short, medium - long term forecasts historical data
- Enhancement of the climate products following Global Framework for Climate Services (GFCS) and the World
- Guidelines - down scaling of the products to the local communities
- Integrating these information with stakeholder in climate change adaptation programmers with participation of the communicate at all level
- The issue of users need and demands -- tailor products enhance means of communications between products producers and the end users
- Participation of stakeholders communities (pastorals, agree pastoral farmers) in the national climate outlook

7.3.4 Kenya

- Collaborate with Kenya Meteorological Services (KMS) to mainstream CIS into project management
- Participatory scenario planning to be upscaled through the Agricultural Sector Development Support program (ASDSP)
- Short rains (October-November-December) Agricultural Service Support Programme (ASSP)-Kenya Meteorological Services to disseminate advisories
- Multi-stakeholder approach
- Support counties in mainstreaming climate change adaptation strategies in County Integrated Development plans (CIDPs)

- Explore the Africa Climate Policy Center (ACPC) ClimDev to develop infrastructure
- Build networks and social capital
- Borrow learning from Climate information Services (CIS) baseline planned by WAC in Nyando, Kisumu County

7.3.5 Malawi

- Integration of local and scientific information
- Downscaling of climate information services
- Support policy development, reviews and implement at all levels
- Multi-stakeholder interaction for information sharing and best practices
- Strengthen ecosystem management
- Community participation in decision making (integrating communities plans into district/sector plans)

7.3.6 Ethiopia

- The need for integration and collaboration of stakeholders with government
- Climate information to downscaled to community
- Community based planning and intervention, CBA
- Networking and collaboration among all stakeholders to share best practices
- Good environmental policies and strategy - collaborate with government to implement
- Natural resource management
- Genuine political government commitment to the policy issues

7.3.7 Somalia

- For 20 years CBA as the coping mechanism for Somalia
- Traditional systems of natural resource management
- Traditional safety nets and risk management mechanism (Zakat, remittance, self-support)
- Build on the weakened nets due to conflicts
- Telecommunication and technology (radio, TV and phones)
- Linkages to markets - global markets. Exports sesame, livestock lemon
- Private sector development - education, health, ICTs
- Consortium work – Multi-stakeholder
- Trickle down the climate info to community level
- Good governance - policy formulation
- Academic researches/scientists knowledge

7.4 Regional Forums

- Flexible and dynamic strategic planning that accommodate stakeholder communities, development plans
- Direct engagement with all end users, understanding their need and changing demands
- Also aware these communities how to deal with the uncertainty of climate outlook
- Collaborate with national IDRISI (IGAD initiative)
- Regional cooperation to reduce drought impacts
- Collaborate with national adaptation programs

8 Participatory Tools Used during the Workshop

The participatory tools and methods were used to facilitate sharing of knowledge and experience on CBA and resilience in drylands (e.g., market place). The tools enabled working in groups on practical tasks, recognizing and encompassing different perspectives and the capacity for reflection, self-assessment and debriefing (e.g., knowledge wall, fish bowl, 1-2-4 exercise). The use of visualization and imagination allowed the participants to draw 2050 visions of healthy pastoral livelihoods (e.g, visual mapping). Finally tools and methods created open-ended creative learning process.

The participatory approaches and tools involved used a range of techniques to facilitate learning and sharing to explore a common issue. Participatory approaches help people and participants involved feel comfortable, encourages them to share information, ideas, concerns and knowledge, communicate effectively and keep discussions and learning practical. Participatory approaches also ensured that everyone gets an equal opportunity to participate. Through active listening and questioning the results achieved in the discussions, they demonstrate that each person's contribution is valuable.

8.1 Open space

The Learning Event used Open Space that enable participants to note down emerging topics they wish to discuss and place them on the knowledge wall and flipcharts. Open space was also used during group discussions.

8.2 1-2-4-All Reflections

This tool was used for one-minute individual reflections, then a pair discusses their thoughts and reflections and they are merged (2 minutes). The pair joins another pair and discusses and merges their ideas and thoughts (4 minutes). The two pairs converge with the rest of the groups and shares insights in plenary for about 5-7 minutes (Figure 13).

Figure 13: 1-2-4 All Reflections

8.3 Videos for recap

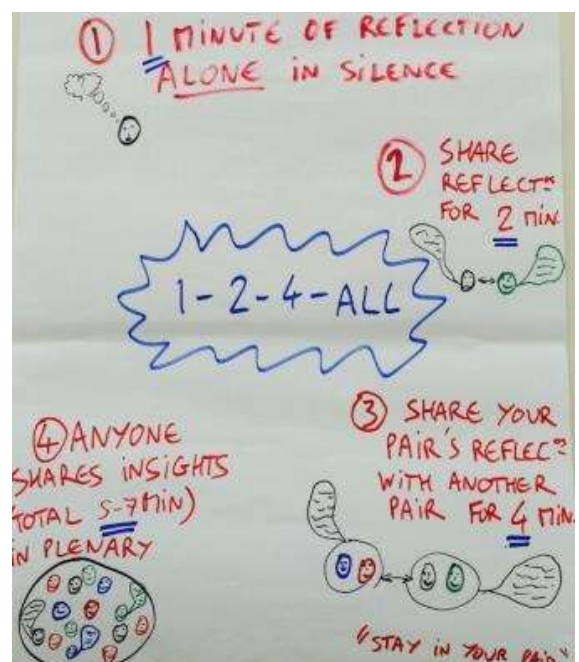
A few participants were video recorded discussing various issues on CBA and resilience and their experiences in the Learning Event. This was presented during the last day of the event.

8.4 Market Place

Market place is a tool where participants can display information related to the topic and share it with the rest of the participants. It involves whole group interaction, sharing knowledge and creating possibilities for further networking and action.

8.5 Knowledge wall

Knowledge wall was used to note down emerging themes and issues under each theme, questions on CBA and resilience that



emerge throughout the learning event (Figure 14). The knowledge wall was updated as often as possible. However, in the evening, the facilitator and some of the participants who volunteered to update the wall could spend a few minutes doing this..

8.6 Fish Bowl

A fishbowl conversation is a form of participants' dialogue that can be used when discussing topics in large groups settings. This technique is used in situations where a small group (4-5) of selected participants are identified and sit in a circular manner in the middle of the group and initiate a discussion around a given topic. The rest of the participants (seated in an outer circle) listen, without comment, to the viewpoints or arguments on the topic. Later on the facilitator opens the fish bowl to the rest of the participants and this is done by a participant from the fishbowl vacating a chair in the inner circle and moving to the outer larger circle. The fish bowl in this learning event encouraged dynamic participant involvement. However due to time limit, only a few participants were able to sit and discuss in the inner circle. The fish bowl was well received by the participants because it offered an imaginative alternative to traditional forms of debating.

Figure 14: Multi-stakeholder Interactions Knowledge wall that was updated with key issues emerging at the end of each day.



8.7 Visualization and diagramming

These were used to develop integrated vision for CBA and resilience for pastoralist and dryland farming. The visual maps provided an opportunity for participants to develop complex relationship that are necessary to build resilience (Figure 15).

Figure 15: A visualization of an integrated CBA and resilience – 2050



9 Conclusions – Looking Forward

The four day learning event and the plenary and groups sessions that integrated participatory learning methods concluded that reliable and downscaled climate information, multi-stakeholder partnership, complementary and/or alternative livelihoods and financial and technical support are needed to build resilience of pastoral systems and safeguard the livelihoods of pastoralists in this changing climate. Key concluding points are:

- Increasing adaptation and building the resilience of pastoral systems and pastoralists now is central to being prepared for future climatic changes. This includes bringing existing traditional and scientific technical knowledge into play to support a healthy and vibrant livestock system
- Pastoralism in ESA is undergoing transitions and transformational actions are needed to support this change so that traditional structures and systems do not get collapse.
- Targeted and flexible financial support by governments, civil society organizations, development agencies and community donors, (agro) pastoral networks, development practitioners and researchers is needed to harness the opportunity that CBA offers
- The notion of CBA adaptation and resilience empowers local community and development agents to examining various interacting factors (biophysical/ecosystems, economic, social and institutional) and scales of operation (local, national, regional and time) as necessary pre-requisite to reduce climate shocks and stresses.
- Increase the adaptive capacity of pastoralist and pastoral systems, both to recover from shocks and to be prepared for future changes by providing climate information services and an enabling policy framework such as pro-drylands and pro-pastoralism policies that address the barriers and bottlenecks faced by pastoralists (e.g., insecure land tenure that causes conflicts, transboundary movement etc.).
- Documenting, compiling and disseminating successful adaptation strategies, approaches and tools used in drylands such as CBA approach.
- Establishment of multi-sectoral and multi-stakeholder platforms with active involvement by all concerned actors at all level

10 References:

- Adaptation Learning Programme (ALP)-CARE International. 2012. ALP Mid-term Review. Accessed on September 8, 2012 from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/204897/Evaluation-CARE-adaptation-learning-programme.pdf .
- Ayers, J., Anderson, S., Pradhan, S. and Rossing, T. 2012. Participatory Monitoring, Evaluation, Reflection and Learning for Community-based Adaptation: PMERL a Manual for Local Practitioners. CARE International. Accessed on September 9, 2014. From www.careclimatechange.org/files/adaptation/CARE_PMERL_Manual_2012.pdf .
- Baylis N, Githeko AK. The effects of climate change on infectious diseases of animals. T7.3. Foresight. Infectious diseases: preparing for the future. Office of Science and Innovation. http://www.foresight.gov.uk/Infectious%20Diseases/t7_3.pdf.
- Blench, R. 2001. You can't go home again: Pastoralism in the New Millennium. Overseas Development Institute report for the Food and Agriculture Organization of the United Nations. London: ODI. Available online at <http://www.odi.org.uk/pdn/eps.pdf>
- Bolling, M. and Schulte A. 1999. Environmental change and pastoral perceptions: Degradation and indigenous knowledge in two African communities. *Human Ecology*. 27 (3):493–514.
- Calvosa, C., Chuluunbaatar, D., and Fara, K. 2010. Livestock and Climate Change. Livestock Thematic Papers. www.ifad.org/lrkm/index.htm
- Christine J. 2002. Facilitating the survival of African pastoralism in the Face of Climate Change: Looking back to move forward. MA thesis, Tufts University.
- CordAid, 2013. Putting community resilience into practice: Initial lessons learned. Accessed from http://www.partnersforresilience.nl/about-us/documents/nlrc_pfr_vision%206p%20web.pdf
- Cullis, A. 2014. Future Horizons: pastoralism and climate change in Ethiopia? Presentation during the CARE Learning Event 2014.
- Davies J, Niamir-Fuller M, Kerven K, Bauer K. 2010. Extensive livestock production in transition: the future of sustainable pastoralism. In: Steinfeld H, Mooney HA, Schneider F, Neville LE. eds. *Livestock in a Changing Landscape, Volume 1, Drivers, Consequences, and Responses*. Washington DC: Island Press.
- Ellis JE, Swift DM. 1988. Stability of African pastoral eco-systems: Alternate paradigms and implications for development. *Journal of Range Management*. 41:450–459.
- Food and Agriculture Organization of the United Nations Organisation (FAO) and Organization for Economic Co-Operation and Development (OECD). 2012. *Building Resilience for Adaptation to Climate Change in the Agriculture Sector*. Proceedings of a Joint FAO/OECD Workshop 23–24 April 2012. Rome
- Getahun T. 2008. Climate changes posing danger on pastoralist: How to manage excess of its adversity. Pastoralist Forum Ethiopia. http://www.pfe-ethiopia.org/pub_files/
- Hesse C. and Cotula L. 2006. Climate change and pastoralism: Investing in people to respond to adversity. Sustainable Development Opinion Papers, IIED.
- Hesse C. and Macgregor J, 2009. Arid waste? Reassessing the value of dryland pastoralism. The International Institute for Environment and Development IIED Briefing.
- Hoffman MT, Voge C. 2008. Climate change impacts on African rangelands. School of Geography, Archeology and Environmental Studies, University of Witwatersrand, South Africa. Pp 14.

- Hulme M, Dougherty R, Ngara T, New M, Lister D. 2001. African climate change: 1900–2100. In: Desanker, P. (ed.) *Africa and global climate change*. CR Special 8. *Clim Res.* 17: 145–168.
- Intergovernmental Panel on Climate Change (IPCC). 2007. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Fourth Assessment Report (AR4). http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf
- Intergovernmental Panel on Climate Change (IPCC). 2014. IPCC WGII AR5. Summary for policy makers. http://www.climatechange2013.org/images/report/WG1AR5_SPM_FINAL.pdf
- IRIN (UN Integrated Regional Information Networks). 2007. *Africa: Can pastoralism survive in the 21st century?*, World Press (available at <http://www.worldpress.org/Africa/2861.cfm/>).
- King, S. 2014. *Community Based Adaptation in Practice: a global overview of CARE International's practices of community based adaptation (CBA) to climate change*. CARE UK.
- McCarthy, N., Swallow, B., Kirk, M. and Hazell, P. eds. 2000. *Property rights, risk, and livestock development in Africa*. Washington, DC, International Food Policy Research Institute (IFPRI) and International Livestock Research Institute (ILRI). 433 pp.
- Reid, H. and Schipper, LF. 2014. Upscaling community based adaptation: An introduction to the edited volume. In Schipper et al., 2014 (eds.) *Community based adaptation to climate change: Scaling it up*. Earthscan.
- Sidahmed A. 2008. *Livestock and Climate Change: coping and risk management strategies for a sustainable future*. In *Livestock and Global Climate Change Conference Proceedings, May 2008*. Tunisia
- Siri E, Karren O, Lynn R. 2008. *Climate Change in Eastern and Southern Africa: Impacts, Vulnerability and Adaptation*. Global Environmental Change and Security. Report 2. University of Oslo.
- Solana, J. 2014 *Saving the House*. Project Syndicate. Accessed on September 6, 2014 at <http://www.project-syndicate.org/commentary/javier-solana-proposes-a-climate-change-strategy-that-depends-on-scaling-up-promising-local-initiatives#8TP3jrG0CDx8wmik.99>
- Thornton PK, Jones PG, Owiyo T, Kruska RL, Herrero M, Kristjanson P, Notenbaert A, Bekele N and Omolo A, with contributions from Orindi V, Otiende B, Ochieng A, Bhadwal S, Anantram K, Nair S, Kumar V and Kulkar U (2006). *Mapping climate vulnerability and poverty in Africa*. Report to the Department for International Development, Nairobi, Kenya: ILRI.
- Tigg, J. (2007). *Characteristics of a Disaster-Resilient Community: A Guidance Note*. Developed for the DfID Disaster Risk Reduction Inter-Agency Coordination Group
- Tschakert, P., and Dietrich, K.A. 2010. Anticipatory learning for climate change adaptation and resilience. *Ecology and Society* 15(2):11. Accessed on September 11, 2014 from <http://www.ecologyandsociety.org/vol15/iss2/art11/>
- United Nations Development Programme (UNDP) and United Nations Convention to Combat Desertification (UNCCD). 2011. *The Forgotten Billion: MDG Achievement in the Drylands*. <http://www.unccd.int/Lists/SiteDocumentLibrary/Publications/Forgotten%20Billion.pdf>
- United Nation Environment Program (UNEP), 2011. *Towards a green economy: pathways to sustainable development and poverty eradication*. Accessed on September 8, 2014 from http://www.unep.org/greeneconomy/portals/88/documents/ger/GER_synthesis_en.pdf.
- United Nations Framework Convention on Climate Change (UNFCCC). 2005. *Nairobi Work Programme on impacts, vulnerability and adaptation to climate change (NWP) - Understanding vulnerability, fostering adaptation*. http://unfccc.int/adaptation/workstreams/nairobi_work_programme/items/3633.php
- United Nations Development Programme. United Nations Convention to Combat Desertification and United Nations Environment Programme. 2009. *Climate Change in the African Drylands: Options and Opportunities for adaptation and mitigation*.

<http://www.unccd.int/Lists/SiteDocumentLibrary/Publications/Climate%20Change%20Adaptation%20and%20Mitigation%20final.pdf>

United Nations Development Programme. 2003. *The Global Drylands Imperative: Pastoralism and Mobility in the Drylands*. Nairobi: United Nations Development Programme, Drylands Development Centre. Available online at <http://www.undp.org/drylands/docs/cpapers/PASTORALISM%20PAPER%20FINAL.doc> .

United Nations-the Economic and Social Council. 2008. Achieving Sustainable Development and Promoting Development Cooperation. Department of Economic and Social Affairs, New York. Accessed on September 9, 2014 from http://www.sv.uio.no/iss/english/research/news-and-events/events/conferences-and-seminars/transformations/proceedings-transformation-in-a-changing-climate_interactive.pdf

The World Initiative for Sustainable Pastoralism (WISP), 2008. Policies that Work for Pastoral Environments. A Six-Country Review of Positive Policy Impacts on Pastoral Environments. http://cmsdata.iucn.org/downloads/goa_uicn_wisp_policies_and_pastoral_environments_en.pdf .

11 Appendices

Appendix I: List of Participants

	Name	Organization	Country
1	Anthony Macharia Mugo	Arid lands Information Network	Kenya
2	Ayub Shaka Mwadali	Kenya Meteorological Service	Kenya
3	Kirungu Caroline Agosa	CPALD	Kenya
4	Catherine Njeri Mungai	CCAFS	Kenya
5	Christine C. Jost	World Agroforestry Centre	Kenya
6	Emmah Anyango Bowa	Adaptation Learning Programme-ALP	Kenya
7	Esther Getrude Lung'ahi	Arid lands Information Network	Kenya
8	Fiona Percy	Adaptation Learning Programme-ALP	Kenya
9	Mwesigwa Jasper Batureine	IGAD climate prediction and applications Centre- ICPAC	Kenya
10	John Mwangi Gathenya	University of Reading	Kenya
11	Kayoni Judith	Kenya National Farmers Federation	Kenya
12	Maurine Ambani	Adaptation Learning Programme-ALP	Kenya
13	Mohamed keinan Hassan	National Drought Management Authority.	Kenya
14	Muoti Mwangangi	Ministry of Agriculture, Livestock Production and Fisheries- MOALF	Kenya
15	Mutie Nzau	Ministry of Devolution and Planning	Kenya
16	Teresia Mwendu Kusewa	CARE - Kenya	Kenya
17	Nicholas Abuya	Christian Aid	Kenya
18	Rose Akinyi Aduol	Agency for cooperation in Research and Development-ACORD	Kenya
19	Shadrack Kipkemoi	Agriculture Sector Development Support Programme -ASDSP	Kenya
20	Silas Okeyo Oure	Ministry of Devolution and Planning - Kenya	Kenya
21	Kirumba M. Wangare	Agriculture Sector Development Support Programme -ASDSP	Kenya
22	Farah Ibrahim Hussein Mohamed	CARE -Somalia	Kenya
23	Judith Kateule	Judith Chikonde foundation -JCF	Zambia
24	Noah Zimba	Zambia Climate Network	Zambia
25	Otzelberger Agnes Helene	CARE International – PECCN	UK
26	Lindsey Paul Jones	Overseas Development Institute - ODI	UK
27	Akwii Esther Grace	Coalition of Pastoralist Civil Society Organisations -COPACSO	Uganda
28	Kajura Charles Dr.	Production and marketing department, Hoima district local government – Uganda	Uganda
29	Harriet Ndagire	Kulika - Uganda	Uganda
30	Isaac Kabongo	Ecological Christian Organisation (ECO).	Uganda
31	Joy Margaret Biteete Tukahirwa	Beyond Subsistence	Uganda
32	Dosteus Mtinde Lopa	CARE -Tanzania	Tanzania
33	Pauline, Noah Makula	University of Dar- es- Salaam	Tanzania
34	NEEMA MABURRE KITASHO	Ngorongoro Youth Association.	Tanzania
35	Mikateko Frangeline Sithole	Climate Change Adaptation Department of Environmental Affairs	South Africa
36	Yamkela Christopher Lupindo	Conservation South Africa	South Africa
37	Badra Yusuf Ali	Conservation South Africa	Somalia

38	Osman Gedow Amir	Somali Climate Change Network	Somalia
39	Aldwin D.L Mtembezeka	CARE- Malawi	Malawi
40	Lichenya Arthur Stanley	Churches Action in Relief and Development - CARD	Malawi
41	Dorothy Tembo	Centre for Environmental Policy and Advocacy	Malawi
42	Lwanda James Kondwani	Lilongwe University of agriculture and Natural Resources Collage.	Malawi
43	Nelson Chanza	Nelson Mandela Metropolitan University	Zimbabwe
44	Sharaf Eldein Hassan Idris Ahmed	Sudan Meteorological Authority	Sudan
45	Olaotswe Ernest Kgosikoma	Department of Agricultural Research	Botswana
46	Nicola Ward	Adaptation Learning Programme-ALP	UK
47	Coulibaly Yekeleya Jeanne	ICRAF	Kenya
48	Ahmed A.Hassan	Agriculture Sector Development	Kenyan
49	Solomon Kilungu	CCAFS	Kenyan
50	Martin Rokitzki	Oxfam GB	Ethiopia
51	Wilson Ugangu		kenya
52	Ama Bartimeus	CARE UK	UK
53	Emma Owidi	ICIPE/ CHIESA Project	Kenya
54	Ephrem Mamo Weledکیدane	Haramaya University	
55	Gideon Muchiri Murithi	KARI	Kenya
56	Taye Kufa Obso	Ethiopian Institute of Agricultural Research- EIAR	Ethiopia
57	Tino Johansson	ICIPE	Kenya
58	Tate Munro	Mercy Corps	Kenya
59	OTHIENO COLLINS OCHIENG	DFPA - CREP PROGRAMME	Kenya
60	Sirak Abebe	Netherland Red Cross	Kenya
61	Jurjen Draaijer	SNV	Kenya
62	Maren Radeny	ICRAF	Kenya
63	Samuel Molla Degaga	CARE- Ethiopia	Ethiopia
64	Dadimos Wondifraw Alemu	Meteorological Agency,	Ethiopia
65	Alebachew Adem	CARE - Ethiopia	Ethiopia
66	Manish Kumar	OXFAM GB	Ethiopia
67	Feyera Abdi Tolla	SOS SAHEL - Ethiopia	Ethiopia
68	Aklweg Nigatu	OXFAM GB	Ethiopia
69	Fiona Flintan	ILRI	Ethiopia
70	Fitsum Teshome	GOAL - Ethiopia	Ethiopia
71	Dejene Kebede	Action Aid Ethiopia	Ethiopia
72	Teshome Mulu	Livelihood Improvement through sustainable resource management program	Ethiopia
73	Teamrat Belai	Joint Program Office of CAFOD/SCIAF/TROCAIRE	Ethiopia
74	Zekele Tesfaye Habtemariam	GEF Small Grants Programme - Ethiopia	Ethiopia
75	Desalegn Yayeh Ayal	MARIL	Ethiopia
76	FIKRE SAHILE ASRAT	Ministry of Agriculture	Ethiopia
77	Rivalod Kpadonou	ACPC	Ethiopia
78	Muluneh Tessema Gizaw	CORDAID	Ethiopia
79	Martin Rokitzki	OXFAM GB	UK
81	Solomon Nega.	FAO	Ethiopia
82	Mary Nyasimi	CCAFS (Rapporteur)	Kenya
83	Tsehay Gashaw	ILRI (Rapporteur)	Ethiopia

Appendix II: Existing gaps in the interface between Climate change adaptation and resilience.

Additional issues raised include:

- Lack of relevant and reliable downscaled climate information to enable adaptation and resilience
- Lack of or limited knowledge sharing, no/limited collaboration and integration of activities among different actors
- Lack of clear understanding and interpretation of adaptation and resilience¹¹ terms
- Limited government commitment to invest (financial, infrastructure and policy formation and implementation) in adaptation plans and strategies that can build resilience
- Natural resources are already highly degraded making climate change adaptation and resilience a big challenge. Both natural and social systems are collapsing as well as the ecosystem functionality.
- Rigid/resistant community cultures and practices to change
- Failure to identify appropriate adaptation and sustainable strategies, which can lead to maladaptation
- Different climate change drivers interact with others and we cannot predict impacts hence adaptation strategies might not lead to resilience
- Lack of supportive policy and suitable governance structures (i.e. clear policy and enforcement mechanisms) to deal with climate change adaptation
- Lack of documentation and sharing of best practices and lessons learned
- Lack of integration of climate change adaptation and resilience to education curriculum across disciplines in the academic institutions
- Lack of community-driven approaches to risk management (local community's skills and knowledge not recognized because of top down approaches)
- Lack of clear climate and agro-advisory messages to end users and policy makers from climate scientists and other researchers
- Confusion over what the two concepts are and their meaning changes over time. (Adaptation – about doing these differently, resilience about bouncing back to an existing state)
- Understanding when transitions and transformations are needed more than either CBA or resilience
- Timescales matter in adaptation and resilience
- Without adaptation to climate change, resilience will not be possible
- Climate change is uncertain and complex – different drivers interact with each other and impacts cannot be predicted. Therefore preparedness for uncertainty is important
- Lack of coordination between actors in disaster risk, emergency response and development
- DRR/emergency actors less likely to take climate change and climate information into account
- Need for joint planning and consideration of governance, natural resource management and peace/security

¹¹ Resilience will never be a stable state but a factor of capacity to continually absorb, adapt and transform to a changing climate

Appendix III: Additional opportunities identified:

- Increasing understanding of climate and its impact by various stakeholders including the end-users due to generated existing data and knowledge from different sources
- Willingness and flexibility of different actors to invest in climate change adaptation in terms of finance, human capacity and infrastructure
- Policy support driven by governments (e.g., Climate change policy formation and implementation) and embedding adaptation in national development plans
- Climate change has become a global agenda and every actor (including governments, donors and communities) is willing to work to address the impacts of climate change as well as adaptation strategies
- Providing opportunity to integrate knowledge and skills of local communities to build resilience
- Encouraging multi-sectoral approach with multi-stakeholder participation towards adaptation
- Integrated and systems holistic approach i.e. interdependence between resources and production systems move towards mainstreaming
- Identification and documentation of adaptation strategies and scaling up
- Availability of technical experts on CC that can make linkages between adaptation and resilience
- Downscaling of climate information, and its available on a timely basis – reliability
- Community based adaptation can generate information that can lead to resilience or is a catalyst for resilience. It ensures that CBA approaches and success and failures of adaptation to build long term resilience by integrating localized solutions
- Can be an innovative use of technologies e.g. biotechnology
- Increased buy in by government to support policies and processes can lead to resilience
- Capacity to sustainably manage natural resources and carry out ecological based adaptation to build resilience
- Adaptation options increase livelihood and income diversification and strengthens local adaptation knowledge and institution that can build resilience
- Increased knowledge sharing by different stakeholders, making climate change a global issue, thus requiring global partnerships
- Integration of and mainstreaming of adaptation in all sectors, encouraging continuity and ownership of approaches
- Platforms for different actors (NGOs, governments, research) working together by developing a common approach to understanding adaptation
- Opportunity for strengthening local and national level institutions and their capacities
- Combined development plans which are incorporated with DRR/risk contingency plans
- Interface with indigenous technical knowledge with innovations and new knowledge and linking research and practice
- Combine planning at local level (risk reduction) and build on community-based integration
- The level of resources required for changes to achieve resilience requires a paradigm shift away from short term projectized approaches
- Knowledge and attitudinal practice of communities in terms of adaptation can help build resilience
- Offers opportunity to apply multi-sectoral approach to resilience
- Combined development and disaster risk/contingency plans
- Community based and managed processes – from risk analysis, planning, accessing

climate forecasts, decision making and building adaptive capacity

- Local knowledge and combining with new innovations
- Short term to long term solutions and benefits
- Technologies: Information communication and Technologies (ICTs), trees, renewable energy etc.
- Communication systems, climate information for decision making, multi-level action, linking local to national, platforms for all actors to work together across silos and disciplines
- Need resources and coordination for longer term work – move away from short projects
- Paradigm shift for development and humanitarian aid needed – long term strategies with flexible funding