Centre for Climate Change Economics and Policy

An ESRC Research Centre

GCRFAFRICAP
CLIMATE SMART AGRICULTURAL DEVELOPMENT

Climate Change Resilience in Tanga Region, Tanzania
Research into Practice Workshop
17-18/09/2024

UNIVERSITY OF LEEDS

Tanzania Forest Conservation Group
Shirika la Kuhifadhi Misitu ya Asili Tanzania

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List of Acronyms

AFRICAP	Agricultural and Food systems Resilience: Increasing Capacity & Advising Policy
CBT	Community Based Trainer
DCDO	District Community Development Officer
ESRF	Economic and Social Research Foundation
EUM	East Usambara Mountains
FoSTA-Health	Food Systems Transformation in Southern Africa for One Health
GCCA	Global Climate Change Adaptation
LGA	Local Government Authority
LPG	Liquid Petroleum Gas
MJUMITA	Mtandao wa Jamii wa Usimamizi wa Misitu Tanzania (Community Forestry Network of Tanzania
NGO	Non-Governmental Organisation
ONGAWA	Engineering for Human Development (an NGO)
SUA	Sokoine University of Agriculture
TAFORI	Tanzania Forestry Research Institute
TARI	Tanzania Agricultural Research Institute
TFCG	Tanzania Forest Conservation Group
TFS	Tanzania Forest Services Agency
TZS	Tanzania Shilling
VLUM	Village Land Use Management
VNRC	Village Natural Resources Committee
VSLA	Village Savings and Loans Associations

1. Introduction

This report summarises the proceedings of a workshop exploring research on climate change resilience in Tanga Region, Tanzania. The objective of the workshop was to bring together University of Leeds researchers and research participants with practitioners and development partners to:

- Share and critically engage with the outcomes of 8 years of research on climate change resilience, agricultural development and conservation-climate-development programming in the Amani-Nilo landscape,
- Co-develop ways forward to achieve more inclusive, equitable and sustainable benefits from programmes.

The workshop sought to build the capacity of NGOs and local government to strengthen service delivery around climate change resilience and participatory natural resources management.

The overarching question that the workshop sought to address was:

- How to achieve more sustainable, inclusive and equitable benefits from programmes in the Amani-Nilo landscape?

The workshop was held in the Amani Nature Reserve on 17th – 18th September 2024.

Participants included representatives of local government (Muheza District Council), central government (Tanzania Forest Services Agency), village and ward governments, Photovoice groups, tour guide groups, spice companies, non-governmental organisations (Tanzania Forest Conservation Group, Community Forestry Network of Tanzania (MJUMITA), Nature Tanzania, CARE-International), research institutions (Tanzania Forestry Research Institution, Tanzania Agricultural Research Institute, University of Leeds), and donors (Eastern Arc Mountains Conservation Endowment Fund).

The workshop included a mix of presentations and group work.

The workshop was facilitated by Dr Numan Amanzi, TAFORI.

2. Day One

2.1 Self introductions

All participants introduced themselves.

2.2 Opening of the workshop

The meeting was opened by the Ward Councillor for Kwezitu. The Ward Councillor emphasised the importance of protecting the environment; reminded participants that it is everyone's responsibility to protect nature; and officially opened the workshop.

2.3 Introduction to the workshop & climate change resilience

A presentation was made by Dr Susannah Sallu & Emmanuel Lyimo. See Annex 2.

The facilitator welcomed participants to ask questions and provide feedback on the presentation.

Comment 1. Appreciated the presentation. The destruction of the environment and the information on climate change that we have seen in the presentation provides new information for us and highlights the threat of uncontrolled tree cutting. If destruction of the environment will carry on, it will result in

temperature increases. If one tree is the same as 3 air conditioners, we need to protect the environment. My advice is that the education that we are getting today will help us to educate our people on how to protect the environment. We need more education because many people do not understand the threats to, and benefits of, the environment, and the risks of climate change. Destruction of the environment in our area including cutting trees and illegal mining, will bring great threats for us. Finally, we request for more expertise to communicate the threats.

Comment 2. Congratulations on the presentation. Around climate change in Tanga, while your research shows that there will be a temperature increase of 1 – 3° C by 2050, what about rainfall? How much rain will there be by 2050? Understanding rainfall dynamics is a priority.

Response: It was responded that the climate change models have high variability in predicting the impact of climate change on rainfall for Tanga, particularly in the mountains. Overall, models indicate an increase in annual rainfall with more intense rainfall events. This will increase flooding risks and associated risks of soil erosion. Further, it was explained that initiatives to protect soils and reduce soil erosion reflect this risk assessment. Initiatives to reduce soil erosion include terracing and agroforestry.

Comment 3. Congratulations on the presentation. To address climate change, we need to understand the reasons why people cut trees. In Amani, we are practicing spice farming (cardamom, cinnamon, cocoa), including planting trees. Widespread tree planting in Amani has been helped by the distribution of free spice seedlings and seeds. By planting trees, we are helping the climate. It is my recommendation that more effort is needed to reduce charcoal use. For one tonne of charcoal, you need 12 tonnes of wood. Instead of charcoal, we need clean energy. The thing that people are missing is access to Liquid Petroleum Gas (LPG). The price of gas is high. But it is too expensive. Better to give everybody free LPG cylinders. If everyone was given free LPG cylinders (cost TZS 50,000) they would buy the LPG (TZS 24,000). You cannot tell people to stop something unless you provide an alternative.

Comment 4. Appreciated the research and the meeting. We are trying to find a way to access firewood more sustainably. People go into the forest to cut timber. This is the main threat. Some permits are given for harvesting timber. But others are cutting illegally. Reiterated the recommendation to reduce the cost of LPG.

Comment 5. Ward Councillor for Kisiwani. Thanked the researchers for the research and for the outputs. The issue that has touched him is the issue of climate change. I would like to know what the organisations will do to reduce climate change.

Responses: It was responded that, overall, in Tanzania, agriculture is the main driver of deforestation while also recognising that there may be local drivers particular to a specific area.

Further it was elaborated that charcoal is presented as a main driver of deforestation in Tanzania but the research that we have done, (Leeds, TFCG, SUA) across Tanzania shows that deforestation is driven by demand for land, specifically for agriculture. While charcoal may be prepared during the process of transitioning to agriculture, the motivation for cutting down the trees is the agriculture. The main driver of deforestation is not charcoal, it is agriculture. In the 2022 census, it showed that most people in urban areas are using charcoal. The change that TFCG is trying to introduce is to use more sustainable, efficient kilns. The issue is how charcoal is produced.

2.4 Livelihood resilience research

A presentation was made by Dr Marta Gaworek-Michalczenia and Abduel Kajiru. See Annex 3.

Comment 1. The presenter was congratulated for the presentation. It was recommended that research be carried out to identify the different groups working on climate change resilience and adaptation. Further it was recommended that there be more knowledge-sharing and cooperation between the groups, in addressing the challenges of climate change. It was also recommended that more emphasis be placed on implementation of training and research; finding synergies between groups and other stakeholders; and the provision of ongoing technical support.

Comment 2. The presenter was thanked for the presentation. The impact of TFCG's GCCA project was appreciated, particularly in raising awareness on climate change and building water supply infrastructure. It was noted that the water infrastructure has reduced pressure on the natural water sources, reducing environmental damage. It was recommended that more cooperation is needed, between stakeholders, to address the challenges of climate change. Further, it was recommended to scale-up the construction of improved water infrastructure to other villages as an effective strategy to protect natural water sources. Additionally, it was recommended that more support be provided to farmers to access markets, particularly for spices. The income from spices can help to build climate change resilience.

Response: Regarding the need to research the different groups working on climate change, there is no single solution so different groups and strategies are needed. For the East Usambara Mountains, we are uncertain about the direction that climate change will take. So, different strategies are needed. To achieve this, it is important that everyone works together including local government, donors, communities. It is a very complex issue requiring effort from many people.

Further it was noted that the needs are great and ongoing, but projects have a limited lifetime. However, citizens and communities shouldn't be left to carry on the projects on their own. There is a need for follow-up and continued support for the activities. For sustainability it is important that there is continued support, although the source of ongoing financial support is unknown.

2.5 Livelihood aspirations research

A presentation was made by Dr Ruth Smith, Dr Marta Gaworek-Michalczenia and Abduel Kajiru. See Annex 4.

The facilitator requested one of the older participants to describe how their aspirations have changed over the course of their life.

One participant explained that, 'When I was a boy, I wanted to be a teacher. Then I became a pastor. Then I became a civil engineer. In my old age, I am farming cloves.'

Comment 1. The presenters were congratulated on the good presentation. The research has touched on the challenges that we face in agriculture. I want to add that for farming cloves, the selection of the seeds is very important. So long as there is rain and sunshine, you will harvest tea but for cloves it is different, some will lose their flowers and not produce fruits. More advice is needed on the optimal clove varieties. In terms of farming cardamom, cinnamon, black pepper, research and advice is needed around inter-cropping the spices on the farm. In his experience, inter-cropping cloves and cardamom can work well but more technical advice is needed.

Comment 2. I had the opportunity to participate in the research that has been presented. I observed that there was a big challenge around clove plants. He realised the problem facing clove farmers, that most of the clove trees are getting disease and getting dry. Farmers don't know the source of the disease. It is important for the extension officer to identify the cause and solution for the problem.

Comment 3. For the aspirations, there are different livelihoods available in Amani including farming and livestock keeping. For this question of aspirations, did you just look at spice cultivation, or did you also consider other livelihood activities such as livestock-keeping?

Responses: Research from FOSTA-Health on aspirations focused on spice farming as an example of a crop that is transitioning from subsistence and domestic use to commercial production for the export market. The research initially looked more broadly at aspirations. Towards the end, the research focused in on spice production. The research also identified the need for more understanding on the diseases affecting spices. It was highlighted that the workshop provides an opportunity for different stakeholders to consider these challenges. Further, it was clarified that the FOSTA-Health research was implemented in several countries including Zambia, South Africa and Tanzania. The aspirations research highlighted that it is important to have diverse livelihoods. The diseases affecting the spices could, otherwise, threaten farmers' capacity to achieve their aspirations.

2.6 Small Group Discussion Activities

1. **Practitioners / Researchers:** Are you considering climate change resilience in the projects / businesses you are working on? How? **Village representatives:** Are there any projects you, or your village, are involved in considering climate change resilience? How?
2. What impacts are the projects having?
3. How do those projects and impacts align with villager aspirations?
4. How have / are projects and research impacting aspirations?
5. Risks and rewards of the current focus of intervention on spices?

Participants were divided into seven groups:

1. Ward Councillors
2. Extension Officers
3. NGOs plus and business (Global Food Products, Spice Company 2)
4. Local Government Officers plus Tanzania Forest Services and business (Spice Company 1)
5. Villagers (Photovoice members*)
6. Village leaders Group 1
7. Village leaders Group 2

Each group was advised to have a facilitator, one of the researchers, and a presenter.

Permission was requested to record the proceedings of the working groups using sound recorders. Participants consented to the use of the sound recorders.

**Photovoice is a qualitative research method used in community-based participatory research that gathers participant-taken photographs and narratives to translate experience into actionable knowledge. Photovoice, involving 10 village participants from Kizerui, Zirai and Mashewa villages, has been applied in the FOSTA-Health research project by researchers from the University of Leeds. It is these participants who were invited to join this workshop to both represent villagers and exhibit their photographs and narratives.*

Table 1. Results of the group activity on climate resilience and aspirations

Question	Ward Councillors	Extension Officers	NGOs & Spice Company 2	LGA, TFS and Spice Company 1	Villagers (Photovoice members)	Village Leaders Group 1	Village Leaders Group 2
1. Practitioners / Researchers: Are you considering climate change resilience in the projects / businesses you are working on? How? / Village representatives: Are there any projects you, or your village, are involved in considering climate change resilience? How?	Yes.	Yes.	Yes.	Yes			Yes.
	1. Tree nurseries 2. Stop uncontrolled tree cutting 3. Sports competition 4. Stop uncontrolled fire	- Environmental education - Agroforestry - Inter-cropping - Conservation agriculture – protecting soil, water, terracing, fanya juu / fanya chini, cover crops, education on drought-resistant crops including cinnamon.	- Education on climate change - Tree nurseries - Planting trees around water sources - Quick return crops - Alternative crops such as drought resistant crops like spinach - Gap-filling through tree planting	- Projects - Safe fire use - Alternative livelihoods including beekeeping - Efficient fuel use such as efficient stoves - Ecological research - Climate smart agriculture, contour farming, fanya juu/ fanya chini, mulching, - Increase incomes – improved agricultural techniques and accessing farmers	Unavailable	Unavailable	- Improved agriculture to avoid soil erosion and protect water sources. - Improved agriculture to enhance soil fertility. - Village savings and loans associations - Agroforestry
2. What impacts are the projects having (+ve / -ve)?	+ve Increasing incomes	**+ve** -Increasing incomes for households,	**+ve** -Increase in understanding	**+ve** -Education	**+ve**	**+ve** -Strengthening land tenure,	**+ve** -Implementers have introduced

Question	Ward Councillors	Extension Officers	NGOs & Spice Company 2	LGA, TFS and Spice Company 1	Villagers (Photovoice members)	Village Leaders Group 1	Village Leaders Group 2
		-Fruit trees for household consumption -Forest protection (reducing uncontrolled deforestation) -Improving agricultural productivity **-ve** -Smaller results from conservation agriculture and increased labour. -Benefits reaching only the men, not the women.	on climate change -Reducing soil erosion -Increasing water availability as a result of protecting water sources -Increase in income for jamii through accessing markets **-ve** -Not getting the right price because of selling poor quality agricultural products -Destroying the forest to plant spices -Conflict in the family around who gets the income in the household	-Income generating activities (tourism, beekeeping, agriculture) -Research Improving the standard of living through access to new equipment including motorbikes **-ve** -Limiting agriculture near water sources -Intensive agricultural practices meaning that you have to buy inputs. -Without the right inputs, the seeds will not succeed. -Conflicts between technicians / Practitioners and communities	TFCG projects bring free seedlings.	thereby reducing land-related conflicts -Education for the next generation on environmental protection -Protecting forests -Tree nurseries and tree-planting **-ve** -Increase in wild animals such as baboons and blue monkeys who damage crops such as cassava. This reduces food availability.	improved agricultural practices. -Increased incomes for communities. -Communities can save as a result of village savings and loans associations

Question	Ward Councillors	Extension Officers	NGOs & Spice Company 2	LGA, TFS and Spice Company 1	Villagers (Photovoice members)	Village Leaders Group 1	Village Leaders Group 2
				such as when Practitioners advise to protect the environment.			
3. How do those projects and impacts align with villager aspirations?	Projects have inspired aspirations to get tree seedlings but some people haven't got them.	-Villager aspirations include getting quick results from cloves. -Cloves also help with illnesses for which the medicines would be very expensive.	-More cooperation between men and women -More employment -More entrepreneurship	-Education, research, projects to build the capacity of villagers -Increased opportunity to access markets for e.g. spices	Projects are aligned with villager aspirations when they bring water projects		+ve Village aspirations are to get increased income, to study, to have money for medical treatment. Education to prepare for climate change -ve Research results are slow
4. How have / are projects and research impacting aspirations (+ve / -ve)?	Some didn't get tree seedlings.		+ve -Increased education -Increased income for people -Scaling-up through village to village learning -ve -Some people refuse to use	Projects and research encourage people to plant spice crops (education, inputs, information, markets).		+ve -Increase income -ve -Need for tree seeds exceeds supply -Wildlife damaging the crops	

Question	Ward Councillors	Extension Officers	NGOs & Spice Company 2	LGA, TFS and Spice Company 1	Villagers (Photovoice members)	Village Leaders Group 1	Village Leaders Group 2
			the modern methods				
5. Risks and rewards of the current focus of intervention on spices?	*Rewards* -Environmental education -Farmers being provided free seeds. *Risks* -Tree-cutting to clear new farms -Fluctuations in the price of crops -Not getting a market for the crops -Climate change impact, especially on cloves	*Rewards* -To increase incomes from spices *Risks* -Farmers might clear the forest to plant spices.	*Rewards* -Benefits for women, youth and older people -Less use of chemical inputs -Exchange visits *Risks* -Deforestation to clear forests -Conflict -Early-sale of agricultural products of lower quality	*Rewards* -Access to resources including for agriculture and even some small factories *Risks* -Expansion of agriculture into forests	*Rewards* -Encouraging spice farming *Risks* -Missing good markets	*Risks* -Yams in the water sources *Rewards* -More income -More spice crops	*Risks* -Deforestation for food crop cultivation

2.7 Empowerment break out discussions

Participants broke into the same seven groups as in the previous sessions. The groups were asked to respond to three questions:

1. What does empowerment mean to you?
2. Is empowerment considered in your project (in your village) / business, and how?
3. Whose empowerment is considered, and why?

Table 2. Results of the group work on empowerment

Question	Ward Councillors	Extension Officers	NGOs & Spice Company 2	LGA, TFS and Spice Company 1	Photovoice members	Village Leaders Group 1	Village Leaders Group 2
What does empowerment mean to you?	To build capacity including jobs, economy.	Activities to build capacity to implement things, includes through provision of training, assets, environment etc	To build the capacity of individuals, groups and institutions through training, money etc in order to implement something.	Strategy to empower women people or groups to adapt to economic or environmental challenges.	-Climate change education -Loans -To provide materials such as cars, farmers, motorcycles -Farmers' groups	A way of helping to arrive at a particular objective or aspiration Build capacity through education, money, equipment, work etc.	Facilitation and activities to increase something to achieve an objective It could be in material support, education, money, advice etc It could come from the government, organisations, companies or individuals.
Is empowerment considered in your project (in your village) / business, and how?	Environmental education and climate change VSLAs Participatory forest management? To be given free seeds and tree seedlings	Environmental protection project – training on spices, free seedlings for farmers Agricultural projects – protect rivers. Environmental education for farmers. Establish tree nurseries to provide free seedlings. EAMCEF: environmental education, land management,	Through: 1. Training, such as -Tree nurseries -Methods to avoid crop losses from pests (integrated pest management) -Good governance training -Processing -Marketing -Packaging 2. Provision of equipment -Milling machines -Improved seeds,	Not available	Not available	Yes. -Through education on: Environmental protection, sustainable agriculture. -To get equipment such as bee hives, storage containers, patrol team uniforms; -Money (investment groups).	Yes -Projects -Ability of villages to get education about land use and protection of the environment, to reduce conflicts through the land councils. -To prepare accurate villages maps.

Question	Ward Councillors	Extension Officers	NGOs & Spice Company 2	LGA, TFS and Spice Company 1	Photovoice members	Village Leaders Group 1	Village Leaders Group 2
		CRF – loans for farmers, spices	-Tarpaulin 3. To give loans				
Whose empowerment is considered, and why?	TFCG including eco-schools USAID Spice Company 2 - spices WWF Spice Company 1 – loans and spices Uwanakizi Muheza District Council (roads, schools) Why? - Environmental education - Economic development - Development projects (roads, electricity)	-Spice farmers to protect the environment. -Farmers groups to increase household incomes e.g. Spice Company 2 -Women e.g. climate smart agriculture project including 50% women and CARE International project	All communities / villages Farmers of spice / tea / fruit - To adapt to climate change - To participate in - To reduce land slides - To increase crop productivity - Entrepreneurship Women - To start groups Students	Farmers Communities	Women, men and youth Excluded - Disabled - Children	Communities in general Special groups - Women - Youth - Disabled To create equality in communities. To adapt to climate change. For women, by educating the women it educates the whole community. To build the capacity of women to move away from considering themselves as a weak group.	TFCG Why? To improve the protection and management of the natural forests (Amani, Nilo) To improve peoples' economic status without disturbing the forests of Amani / Nilo.

2.8 Empowerment research

A presentation was made by Dr Ruth Smith and Abduel Kajiru. See Annex 5

2.9 Day One participatory evaluation

Participants were requested to write down responses to the following questions:
What have you learnt today? (Blue post-it notes)
What do the outcomes from today mean for practice? (Green post-it)

2.10 Reflections

What worked?

- Great partnership between TFCG and University of Leeds.
- Great turn-out and participation.

Challenges?

- Some people dominated the group work. Reminding facilitators to ensure that everyone has a chance to speak.
- Different interpretation of the group work questions.
- Power cuts
- Poor sound system

3. Day 2

3.1 Recap on Day 1

The facilitator asked participants to reflect on what they had learned on Day 1.

In summary, participants explained that they had learned the following:

1. Thank you to the leaders for inviting us. From the presentations, we have learned a lot. We also appreciate the work of TFCG and ONGAWA. About Photovoice. 10 people from several villages including Kizerui, Zirai and Mashewa. Photovoice is about moving forward. The group emerged from Dr Ruth's research. They were then invited to Amani for a meeting. Their main activity is taking pictures. They recognised that they struggled with the group work on Day 1 and advised that they would rather take pictures to explain.
2. From WAMAKIZI, MJUMITA network. Appreciated meeting other NGOs. Learned about how other NGOs operate. Also met other stakeholders such as the DFO, committed to forest management so that they can collaborate.
3. Appreciated the return of the researchers and the recognition of the challenges that people face.
4. Tanga has coast, mountains and lowlands. Learned the difficulties in predicting the climate for these different zones.
5. Learnt that climate change is coming. Need to take action now.
6. Learnt lots about forest and environment.
7. First time to participate in such a meeting. Expected to get some solutions to the challenges that communities face. She has not got those yet.
8. Learnt about climate change resilience. The challenges that will be faced from climate change; aspirations and empowerment.

9. Learnt about how climate change is likely to materialise, Hot times will become hotter. If we are not careful about protecting the environment, the situation will be worse. Highlights the importance of the Amani forest, especially as a source of water for Tanga. Without the forests droughts will be even worse. Whoever is cutting the trees and branches, they should have a permit.

3.2 Establishment & functioning of groups/cooperatives

A presentation was made by Dr Marta Gaworek-Michalczenia, Dr Ruth Smith and Abduel Kajiru. See Annex 6.

The presentation was followed by a discussion around issues affecting different groups. Some of the comments from the discussion are outlined below.

Micro-finance and enterprise groups

Some finance groups are not known, or registered at village, ward and / or district level. It would be better if they had bank accounts.

A common challenge in the microfinance groups is that people take a loan but then they don't repay the loan and it is difficult to force them to pay. Assets may be taken instead. But non-repayment causes conflict.

Conflict resolution training can be helpful to manage conflicts that arise in microfinance or enterprise groups.

It is important that groups register with the Village and Ward Governments so that they are aware of what is going on and can help when there is a problem.

According to the law, microfinance groups should be registered with the District. This can help with sustainability.

It is important that microfinance group members and leaders follow their constitutions and procedures. For example, constitutions should limit the size of a loan to no more than three times the borrower's deposit. This is a rule that is often broken with people taking loans that are 8, or even 20 times, the value of their deposit. Microfinance groups that follow their rules can work well. The approach taken by TFCG was highlighted as a sustainable approach.

For the enterprise groups, it is important to align the groups with the members' aspirations. Otherwise, people will join based on the expectation that they will get something without being really interested to learn about that enterprise.

The District Community Development Officer (DCDO) explained the procedures that should be followed for the registration of microfinance groups. He noted that, according to the law, all microfinance groups should be registered at district level. It is illegal for a group to be collecting money unless they are registered. A group must have a constitution; and must complete a registration form. The form can be completed online through an App, or can be downloaded, printed and filled in. Copies of the NIDA or voter registration cards of all members must be provided. The form, constitution and copies of the member ids must be submitted to the DCDO who will review the application. Once the application is ok, it is submitted to the District Executive Director for approval. The group must have a bank account. There is an initial cost but after that, there are no fees from Bank of Tanzania or the local about it. From there, the group will get a registration certificate for the microfinance group.

Although the procedures are a bit complicated, groups can be assisted by the District. Provided a group representative can travel to Muheza, the District can help. For example, they can help with printing the different documents (forms / constitution). They can also provide an example of a constitution and can assist in submitting the registration request.

A suggestion was made Village Executive Officers (VEOs) could assist in supporting the microfinance groups. This could reduce pressure on the DCDO.

Sustainability of the Community-Based Trainers

The research found that community-based trainers (CBTs) that are trained by projects to provide technical support beyond the lifespan of a project, do not always fulfil their roles. In part, this is because they are not paid. A question was posed as to how to make the system of CBTs more sustainable.

It was noted that for a CBT to provide ongoing technical report, they face costs, especially around transport (fuel / motorbike) as well as their time. This can make them reluctant to provide ongoing support.

Recommendations included:

- The district council, or the DCDO, should pay the CBTs.
- Groups should set aside funds to pay the CBT. An example was given of the FIFO Farmer Field School model. In that model the CBT is provided with different skills to the other farmers. Additional skills include marketing and making market linkages. When the CBT links a group with a buyer, the group set aside a certain amount from the profits e.g. 10% of the profits go to the CBT. This is the 'Huduma kwa malipo' model. The model is approved by the VEO and DCDO. This has worked well. Several participants agreed that this was a good model.
- There should be more coordination and alignment between groups. In Amani, there have been many projects. To the point that people get confused. Especially because the projects have different procedures. There are people who are members of 4 different groups, from 4 different projects. This can lead to poor performance and conflict. Better to limit how many groups someone can join and for there to be more consistency in procedures used by different projects. This would help to enhance outcomes. Where there is a culture of just waiting for hand-outs, this will not work or be sustainable.
- Some CBTs can work well without being paid with an example of CBTs working well until EAMCEF came with money. The funding triggered conflict.

Butterfly project

It was noted that the TFCG butterfly project was contributing to the community and encouraging conservation. Some of the village forests were conserved because of the butterfly business. But then it was stopped. It was reported that discussions are underway to permit the butterfly business to operate again.

Gender

The research highlighted that some women don't participate in groups because their husbands are already there. For this research finding, it was claimed that if the wife gets more training, it can cause conflict in the household.

Observations from the private sector.

The facilitator invited private sector organisations to share their experience of working with groups.

Spice Company 1 – private sector with an organic agriculture project. My first responsibility is to work with farmers alongside the District Agricultural Officer. Challenges. We have established many groups. We have tried to find a way to work with those groups. For this we have collected data about which groups are there. There are many issues with organic agriculture. For example, tree planting: what kind of trees to plant etc. From our side, things have worked well. We are doing business but also with the intention of having a positive social impact. If groups have been established by other organisations, we can work with them. For example, we have worked with WWF and AMCOS. There are leadership issues of course. But we try to empower the farmers. We have different models for the groups such as protecting the environment alongside producing spices. There is a lot of competition for the spices. Sometimes it is disappointing that we have provided all the training and support but then they sell to someone else. Even though we pay a premium price. Harmonisation is needed.

For the vulnerable groups. We have projects to help the more vulnerable people, such as women's groups. Even these vulnerable groups produce the spices. So long as people benefit from the production, they are successful. For the organic farming, the farms need to be certified. No problem if others are coming to support farmers.

Spice Company 2 – From our side, after seeing the challenges of organic farming, we established a microfinance system. We help farmers to plan by providing loans. There are approximately 8 groups in Amani that we have helped with constitutions; bank accounts; and start-up capital. These groups should be registered. Regarding the sustainability of CBTs, there are many groups. If you help them they will learn about organic farming and how to be registered. We are ready to work with the CBTs if they understand about the organic requirements and how to increase productivity. We have supported youth groups and provided them with seedlings and training on organic farming, to help them get income. Organic farming benefits form the groups working together as an association. Need to work together to produce the high-quality products suitable for the international market. Further, there are those companies that buy spices including those that are not registered as organic. There is a conflict of interest. If the farmers have registered with a particular company, it is problematic if they sell to someone else. There is a need to have a meeting between the organic spice companies to share information on who is registered with which company. This could help to reduce conflict between the companies. There is a need to harmonise the system.

Observations from communities.

The question of education is very important in the context of the smooth running of the groups. Spice Company 1 say that they have a challenge, they support the farmers but then someone else buys the spices. I am also an organic farmer. I advise Spice Company 2 and Spice Company 1 that they need to evaluate their work. As an organic farmer, to meet certification standards, I don't use any chemical fertilisers. However, when I come to harvest I end up selling the spices at the same price as the other farmers who haven't followed the organic principles. Companies need to pay a premium price, if we are following the difficult requirements of organic farming.

In summary, it was concluded that it is important that we work together to address the challenges that have been raised.

The Facilitator summarised recommendations from the discussion including that companies should work with the CBTs; and advocacy is needed, to restore the butterfly business.

3.3 Participation and participatory methods showcase

A brief introduction to participation and participatory methods was provided by Dr Susannah Sallu and Emmanuel Lyimo. See Annex 7.

3.4 Example of a participatory approach: Photovoice exhibition

Dr Ruth Smith introduced the Photovoice method. Presentations were made by members of the Photovoice. See Annex 8.

Aisha (Mashewa)

The photos showed challenges including:

- The bad state of the roads.
- Students in the school. Insufficient class rooms and teachers. This results in the school children being in the road during the day.

Saidati (Zirai)

Picture shows Saidati carrying firewood. Would like clean fuel at a low price, as recommended by the President.

Picture shows a pile of wet cardamom. Difficult to get market.

Picture shows an improved stove. Reduces fuelwood consumption.

Issa (Zirai)

Picture shows a brick kiln. They were provided with training on how to make burnt bricks. Requested that support be provided with improved technology to make modern bricks.

Picture shows a pile of cardamom. Challenge with different prices from 25,000 – 50,000. Requested help with getting a fair market.

Picture shows the dispensary in Zirai. It is very small but serves a lot of people. There are 3 villages in Zirai Ward. From Kwezitu, people come to Zirai. We request that it be upgraded to a health centre. And to have support to get patients to Muheza.

Picture shows a road. To get the spices to market, we need a road. During the rainy season, the road is not passable. This is also a problem for an ambulance coming to transport sick people to the hospital in Muheza.

Dastan (Kwezitu)

Picture shows a pile of black pepper that he has farmed. Before 2018, it was just in the lowlands. Now, with climate change, it is possible to grow it in different areas including Kwezitu.

Picture of youth. Asked why aren't there projects for the youth in the villages?

Picture of women in the river. Our women have a problem. Our village has a pump but they don't benefit because they have to pay and cannot afford it. So, the women have returned to the river.

Picture of a very muddy road. Problem for sick people trying to get to hospital. Problem for getting crops to market including spices, bananas.

After the presentations, participants were invited to join six groups. Each group had one or more Photovoice group member who presented their pictures to participants in smaller groups to stimulate dialogue.

Photos of the Photovoice Group members presenting their photos to the workshop participants.

3.5 Reflection on what has been learned from the Photovoice exhibition

The facilitator invited participants to reflect on what they have learned from the Photovoice exhibition. Reflections included the following:

The photos speak more than words. To communicate clearly and succinctly, use photos.

Difficult to get a good price for their crops. For example, for the cardamom, it is difficult to get a good price. Lessons around the cardamom market and production were shared.

Water projects: charging TZS 100 for accessing water is a problem for some people and so they return to the rivers.

It is important for the Photovoice members to take a clear message. For example, if you take a picture of the road, you need to show the people suffering from the bad road. If you take a picture of the inadequate dispensary, you should show the picture suffering from the lack of the clinic. For the banana crop problems, it is better to take a picture of the sick banana plant.

Important to know when pictures are taken. Otherwise, it could cause confusion if an issue has already been resolved such as a lack of a water pump and then the pump has been built.

For the photos from Kwezitu, you complain that it costs TZS 20 per bucket. Education is needed that, if the pump breaks, we need money to fix it. It's not that we are selling the water, it is that we need to maintain the pump.

Learned a lot from the photos. Expertise is needed to share the photos with the Practitioners. For the crops, it is clear that there is a need for some research and expert advice around the cardamom and the varieties that are being planted. Also, that there are diseases that are affecting these crops. The challenge is that, even for the Practitioners, there are gaps in knowledge around the diseases and optimal varieties. There is an opportunity for cooperation around research. For example, with the bananas. There is an issue with market. In Mtwara, one banana sells for TZS 250. How to get the bananas to the more profitable markets?

Photovoice is an effective way to communicate information.

Useful tool for evaluating a project. For example, at the start of a project, a farmer might be having problems with a crop. Then they get some technical advice. And after a few years, the situation would improve. Using photos to witness change from projects would be very useful. Instead of lots of words in a report, you could let the pictures show the change.

With this method, the pictures are of yourselves. What about taking pictures of other people? It was clarified that consent is needed. People might otherwise want to be paid for taking a picture of them.

Photovoice is something that can be done every day, without calling a big meeting like this.

At the village level, we can use photos to highlight problems with the village leadership without coming and showing these problems to everyone at a meeting like this.

Photos speak. The Photovoice requested things from leadership and others. And it's true, I observe that, in Mashewa Village, some crops have no market. Like cassava. The issue of contributing for water is a big problem. Education is needed. A project has brought the water infrastructure but people are returning to the water sources and damaging them because they don't want to pay. Education is needed when these projects come. People need to learn not to wash in the rivers.

Members of the Photovoice group thanked the organisers for the opportunity to present. It has empowered us. We have learned a lot.

3.6 Co-develop ways to achieve more inclusive, equitable and sustainable benefits from programmes.

Participants were asked to provide research ideas on post-it notes. Ideas that were presented are listed in Annex 9.

The facilitator set out the instructions for group work. Participants broke out into seven groups to address two tasks:

Task 1. List positive and negative things about three relationships (giving examples if possible).
1. Community <–> Practitioner
2. Community <–> Researcher
3. Practitioner <–> Researcher
(Practitioner includes LGA, Private Sector, NGOs)

Task 2. Develop 3 **progress markers** for 3 stakeholders
Progress markers are statements describing a gradual progression of changed behaviour. They are used in outcome mapping, a monitoring and evaluation tool.

- Practitioners
- Communities
- Researchers

The results of the group work are presented in Table 3.

Table 3. Results of the group work on stakeholder engagement.

Question	Researchers	Ward Councillors	Extension Officers	NGOs, Private Sector	LGA, TFS and Spice Company 2	Photovoice members	Village Leaders Group 1	Village Leaders Group 2
Positive Community - Practitioners	Eagerness of community to learn from practitioner. Practitioners facilitate access to funding e.g. grants Private sector link communities to international markets. Communities generate the tax revenues that pay the practitioners. Sustainability / consistency of LGAs	Practitioners to show the way to development like Agricultural Officers showing improved agriculture like Farmer Field Schools. Practitioners to serve the needs of the people	Extension officers expertise is accepted by the communities. Practitioners cooperate with communities in the implementation of projects. Extension officers help communities to find different opportunities relevant to their area.	Faith / trust in Practitioners. Communities trust that Practitioners can resolve their challenges. Provision of education and learning.	Communities participate in participatory natural resources management (forest, water sources etc). Communities follow regulations and by-laws. Communities follow good agricultural practices.		Education (e.g. beekeeping) Opportunities (spice markets) Empowerment e.g. equipment / stationery.	Practitioners help to resolve conflicts in the communities. Provision of different education to communities through groups, meetings etc. Communities welcome projects.
Negative Community - Practitioners	Inappropriate delivery of services and equipment e.g late delivery of seeds and other agricultural inputs. Top down approach. Insufficient recognition for community knowledge and perspectives by practitioners.	Practitioners staying far from the communities. Practitioners not having the equipment needed to do their jobs. Practitioners attending to their private affairs.	Over-expectation of what extension officers can offer. When projects end, communities stop implementing the things that the project has promoted.	Mistrust of Practitioners. Practitioners dismiss local expertise. Practitioners train communities on inappropriate methods. Communities want responses immediately not recognising that research takes time.	Communities don't follow natural resources management plans and by-laws. Communities don't consider good agricultural practices.	Practitioners advise farmers not to farm withing 60 metres of rivers and then farmers are not happy.	Low participation by communities. Confusion between communities and Practitioners around the law. Projects that don't bring development.	Not done

Question	Researchers	Ward Councillors	Extension Officers	NGOs, Private Sector	LGA, TFS and Spice Company 2	Photovoice members	Village Leaders Group 1	Village Leaders Group 2
	Conflicting or inconsistent advice between different practitioners.			Professionals become an obstacle to new opportunities / methods for communities. Different institutions are working on the same thing in an uncoordinated way.				
Positive Community - researchers	Researchers empowering communities and influencing aspirations. Researchers generating evidence to support decision-making / solve problems. Communities welcome researchers (who follow procedures) and are willing to participate in research.	Communities participating in the work of the researchers. Researchers to communicate their research findings back to the communities.	Good community participation from the start of a project. Research is a long term, not short term thing. Communities appreciate being a part of research.	Researchers bring new methods. Researchers help communities to address the source of problems. Researchers employ community members as research assistants, building their capacity.	Communities welcome researchers. Researchers build the capacity of communities and provide education and new knowledge. Researchers provide short-term employment and equipment e.g. in data collection.	Researchers do research and then return / validate their finding and recommendations on how to improve our livelihoods. Researchers bring us community projects e.g. improved stoves.	Research outputs. Visualisation of communities' challenges. Resolution of community challenges.	Through questionnaires, researchers document the challenges that communities face. Researchers accept the recommendations from the communities e.g. FOSTA raised recommendation on how to building women's capacity.
Negative Community - researchers	Many researchers don't feed back their findings. Some researchers don't follow proper		Communities reject the research findings.	Some researchers don't involve communities in their research.	Many researchers don't return their findings.	Researchers don't return their findings.	Researchers don't return their research to the communities.	Not done

Question	Researchers	Ward Councillors	Extension Officers	NGOs, Private Sector	LGA, TFS and Spice Company 2	Photovoice members	Village Leaders Group 1	Village Leaders Group 2
	ethical procedures. Some researchers overburden communities. Communities demand more incentives to cooperate.		Communities think that the researchers are coming to take away their assets. Communities expect that their challenges can be resolved immediately.	Researchers delay to return their research. Researchers ignore indigenous knowledge. Researchers have a poor understanding of communities. Introducing many new methods can confuse communities e.g. Savings / Loans/ COCOBA / VICOBA / HISA.	Some community members reject researchers findings e.g. around gender. Communities provide incorrect information to researchers.		Bad relationships arising from research results e.g. projecting the environment.	
Positive Practitioners - Researchers	Applying / transferring research (some). Practitioners support researchers in the field. LGAs permit / protect researchers. Researchers help with policy development and problem-solving.	Practitioners work together with the practitioners like a team. Practitioners follow the findings of the research.		Exchange of knowledge through research outputs e.g. workshops. Participation of Practitioners in research.	Participation of Practitioners in research. Practitioners expand the knowledge of researchers. Researchers leave their equipment to the LGAs (cars, equipment etc)	Relationship between Practitioners and researchers is good. For example research is shared with Practitioners for implementation.	Emergence of new projects. More effective management of proposed projects. Learning opportunities e.g. workshops.	Practitioners raise the challenges that communities face. Researchers work to find solutions to the problems that communities face.
Negative Practitioners - Researchers	Practitioners need incentives to adopt			Researchers don't involve practitioners.	Researchers provide incorrect information	Researchers don't return their research to the Practitioners.	Researchers don't return their research	Delays in returning research to Practitioners.

Question	Researchers	Ward Councillors	Extension Officers	NGOs, Private Sector	LGA, TFS and Spice Company 2	Photovoice members	Village Leaders Group 1	Village Leaders Group 2
	researchers' recommendations. Differences in the way that researchers and practitioners communicate / use knowledge tools. Reluctance to use research (some). Not investing enough time / effort in making recommendations (researchers).			Practitioners refuse to accept researchers' recommendations / findings.	about Practitioners. Researchers don't return their results. Difference between research expertise and practical expertise can lead to conflict.		to the Practitioners. Some interactions between researchers and Practitioners.	
Progress Markers								
Researchers	Researchers should work in an interdisciplinary way. Researchers should co-produce research with communities, practitioners and other stakeholders. Researchers communicate findings in appropriate ways to different stakeholders and including usable recommendations to improve	Not done	Participation of leaders and Practitioners in research. To return research findings in good time. For researcher outputs to contribute to positive change for communities.	To recognise indigenous knowledge. To return research findings in good time. Researchers share their findings with policy-makers.	Researchers get a place for their research. Researchers participate in preparing policies, laws and regulations based on their research.		Return findings to communities in good time. To validate the research that has been done.	Researchers should work with the Practitioners to help solve community problems in a timely way. Researchers provide solutions to problems in good time. Researchers should work closely with communities to understand communities' challenges.

Question	Researchers	Ward Councillors	Extension Officers	NGOs, Private Sector	LGA, TFS and Spice Company 2	Photovoice members	Village Leaders Group 1	Village Leaders Group 2
	community livelihoods and sustainable natural resources management.							
Practitioners (NGOs, LGA, Private Sector)	Practitioners are coordinated in their work with communities; share lessons learned; and adapt their practices to reflect learning from past experiences. Practitioners involve communities in the whole project cycle from design to planning to implementation and evaluation. Practitioners are faithful to their technical expertise, avoiding political bias. Practitioners work in an interdisciplinary way oriented to the needs of the communities considering both quantitative and	Not done	Participation in each step of the project. Good outputs from projects.	To recognise indigenous knowledge. To build the capacity of community members. To make follow-up on the project even after the end of the project to learn what has sustained.	Practitioners get information and expertise from research. Spread of technology and knowledge from research that helps communities. Practitioners follow plans and regulations of communities.	Practitioners bring communities education, projects and groups. Practitioners bring loans from the district.	Practitioners have a good relationships with communities and provide education that helps with their businesses. Practitioners ensure that projects are sustainable.	Practitioners monitor groups' implementation. Practitioners of development help the community groups. Monitoring of community development projects.

Question	Researchers	Ward Councillors	Extension Officers	NGOs, Private Sector	LGA, TFS and Spice Company 2	Photovoice members	Village Leaders Group 1	Village Leaders Group 2
	qualitative information.							
Communities	Community members / farmers are willing to engage in dialogue around new technologies / varieties / methods including challenging researchers when advice seems inappropriate. Communities share the knowledge that is communicated by researchers within their community through discussions etc. Communities should be proactive and transparent in guiding other stakeholders to avoid duplication of research and practice / projects.	Not done	Good project outputs.	Communities welcome new methods of doing research. Communities implement methods Communities follow the proper procedures for groups, especially around microfinance. Communities use the CBTs in their business.	Communities get education about environmental protection from researchers. Communities get understanding from research that helps with their development. Communities get an increase in their productivity and businesses (as a result of research)			Groups that have been started by TFCG projects should be sustainable. Communities should be involved in different projects. Communities implement natural resources management by-laws.

3.7 Workshop closing

The Ward Councillor for Zirai expressed his appreciation for all the villages for their active participation. Further he thanked TFCG, University of Leeds for organising the workshop. He appreciated that participants have learned a lot and that this will benefit the nation and, even, the whole world because environmental issues affect everyone.

On behalf of Amani Nature Reserve (ANR), the ANR representative thanked the researchers and organisers for holding the workshop at Amani. She also appreciated that Ward Councillors and villagers have had the opportunity to visit Amani and encouraged participants to appreciate the unique biodiversity of the Nature Reserve. She welcomed all participants to visit the forest with their families.

On behalf of TARI, the TARI representative thanked the workshop organisers. As TARI are starting a project with TFCG and the University of Leeds in Nachingwea, he appreciated the opportunity to participate in this well-established project around climate change, and to experience the environment in Amani.

On behalf of the University of Leeds, Dr Sallu thanked everyone for their participation in the workshop. She expressed her appreciation that everyone has been able to engage in exciting dialogue. She noted that her team in Leeds have a passion for implementing research that brings positive impact and are committed to working in multi-stakeholder groups. She expressed her hope that this is not the end but is the start of us working together. She thanked Amani Nature Reserve for providing accommodation, good food and electricity; Mr Kajiru for his interpretation work; TFCG, especially Joyneth and Lyimo, for all the logistics, translations and hard work in organising the workshop; Nike Doggart for recording; and especially to Dr Numan Amanzi for standing in at the last moment as Facilitator.

Representing the District Commissioner of Muheza, Respected Councillors, Village Chairpersons, Photovoice groups, researchers and other participants. I appreciate your participation in this workshop. I thank TFCG for the way that they have supported the workshop. I also thank all the researchers for supporting this workshop and for the learning that we have all gained from this workshop. I also appreciate the work of Dr Numan Amanzi for his hard work in facilitating this workshop. I wish everyone a safe return journey.

Annex 1 Research into practice workshop timetable

DAY 1

08:30 Arrival and registration
09:00 Participant introductions
09:30 Introduction to the workshop & climate change resilience (Susannah Sallu & Emmanuel Lyimo)
10:00 Livelihood resilience research talk, followed by Q& A (Marta Gaworek-Michalczenia)
10:45 Photo & Tea break
11:15 Livelihood aspirations research talk (Ruth Smith & Marta Gaworek-Michalczenia), followed by Q&A
11:45 Small Group Discussion Activities
12:45 Group feedback to plenary
13:45 Lunch
14:45 Empowerment break out discussions
15:20 Women's Empowerment research talk, followed by Q&A (Ruth Smith)
15:50 All group post-it note evaluation of learning
16:30 Plan for tomorrow, logistics & Close

DAY 2

08:45 Welcome back & introduction to Day 2
09:00 Establishment and functioning of groups/cooperatives research talk, followed by Q&A (Ruth Smith & Marta Gaworek-Michalczenia)
09:40 Small group discussion on groups/cooperatives
10:30 Tea Break
11:00 Participation introduction (Susannah Sallu & Emmanuel Lyimo)
11:15 Participatory method: Photovoice presentation & showcase (Photovoice Group)
13:30 Lunch
14:30 Reflections on research-practice-community relations and research-practice processes, opportunities for co-production and ways forward (Nike Doggart)
16:30 Thanks & Close

Annex 2 Presentation 1: Introducing the workshop and background to the research

Presented by Susannah Sallu & Emmanuel Lyimo

Workshop Aims

Bring together University of Leeds researchers and research participants with practitioners and development partners to:

- Share and critically engage with the outcomes of 8 years of research on climate change resilience, agricultural development and conservation-climate-development programming in the Amani-Nilo landscape,
- Co-develop ways forward to achieve more inclusive, equitable and sustainable benefits from programmes.

Overarching question:

- How to achieve more sustainable, inclusive and equitable benefits from programmes in the Amani-Nilo landscape?

Workshop themes

Background to the Research

- **10 years of interdisciplinary research** by University of Leeds and partners across multiple projects
- **Leeds Researchers** - Susannah, Marta, Ruth, Nike, Dr. Harriet Smith & Masters students
- **Research Partners** – TFCG, ESRF, Sokoine University of Agriculture, TARI, Muheza District, ONGAWA

- Focussed on:
    - **Rural Livelihood Resilience** in EUM
    - **Climate Compatible Development** – integrating thinking on change adaptation, mitigation & development
    - **Climate-Smart Agriculture innovation and intervention**
    - **Food Systems Transformation – livelihood diversification, social empowerment**: horticultural commodities & export markets e.g. spices in EUM

Multiple disciplines & mixed methodology

- **Multiple Funding bodies**
- **Climate change resilience**
- **Definitions**
- Livelihood – the capabilities, assets and activities that individuals and households use to meet their basic needs and maintain their well-being
- Vulnerability – the possibility of being negatively affected by event/disturbance
- Climate change resilience – the capacity of social, economic and ecosystem to cope with climatic changes
- Climate compatible development – development that considers climate change issues

Climate change resilience

What is climate change resilience?

- Complex concept
- The capacity of social, economic and ecosystems to cope with climate-related events, trends or disturbances

Why is it important to study/assess climate change resilience?

- It is vital for societies, communities and individuals to understand options for reducing climatic risks and develop resilience

Climate variability & change in Tanga

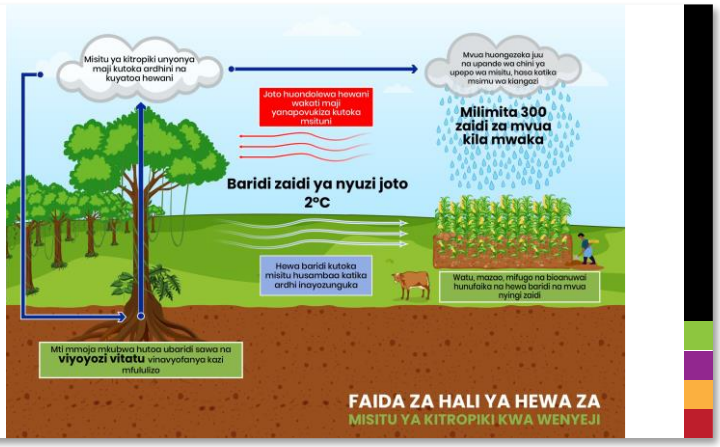
Climate variability and change

- **Temperature** – increase 1-3ºC by 2050, increase in number of extremely hot days
- **Rainfall** * – more rainfall, more extremes, more gaps between rainy days e.g. drought; high rainfall / flooding events
- **Seasonality changes** * – timing of rainfall (onset, stopping & duration)

Climate change – hazards & impacts

Hazard	Impact (examples)
Rising temperature	Reduced crop yields due to heat stress
Increased length of hot periods (decrease in rainy days) ➢ drought	- Reduced crop yields - Increase disease in poultry/livestock - Insect pest outbreaks - Reduced milk production (less fodder and water) - Higher livestock death rates - Decline in business (less available cash) - Less work (e.g. on farms, estate, transportation) - Increase fire incidence
Increased frequency of heavy rain (intensity)	• Damage to crops (e.g. clove flower bud dropping) • Water logging and flooding • Soil erosion, landslides • Difficulty drying harvest / keeping stored crops dry • Increased pest and disease damage • Damage to infrastructure and roads (affecting transportation to market)

Compilation of data from research in EUsambara, 2016-2021



Climate change resilience

The capacity of social, economic, and environmental systems to cope with climate-related events, trends, or disturbances

- Due to complexities (definitions, uncertainties of climate) **there is no single solution / guideline for achieving climate change resilience**,
- Need to work together to discuss what we know and what we don't know to identify gaps in knowledge / understanding and to find solutions / ways forward

Annex 3 Presentation 2: Livelihood resilience research

Presented by Marta Gaworek-Michalczenia and Abduel Kajiru

Research on Livelihood Resilience

- In development projects, **placing people and their livelihoods at the centre of climate resilience efforts is crucial**
- This approach not only **reduces poverty and builds adaptive capacity essential for resilience**, but also serves as **an important indicator of project success**

'Ability to maintain and enhance livelihood functioning in the face of change, including shocks and stresses'

- Buffer capacity
- Self-organisation
- Capacity for learning

Components of livelihood resilience

Buffer capacity – ability to cushion livelihoods from shocks and changes

- Assets (e.g. land, livestock)
- Access to resources and services (e.g. access to markets, access to natural resources)

Self-organisation – ability to develop networks, cooperation and self-reliance (e.g. through group work)

Capacity for learning – ability to acquire new knowledge and skills, along the capacity to act on them (e.g. experimentation with new crops)

Integrated programming for climate resilience

Case study: The EU's Global Climate Change Alliance (GCCA+) project

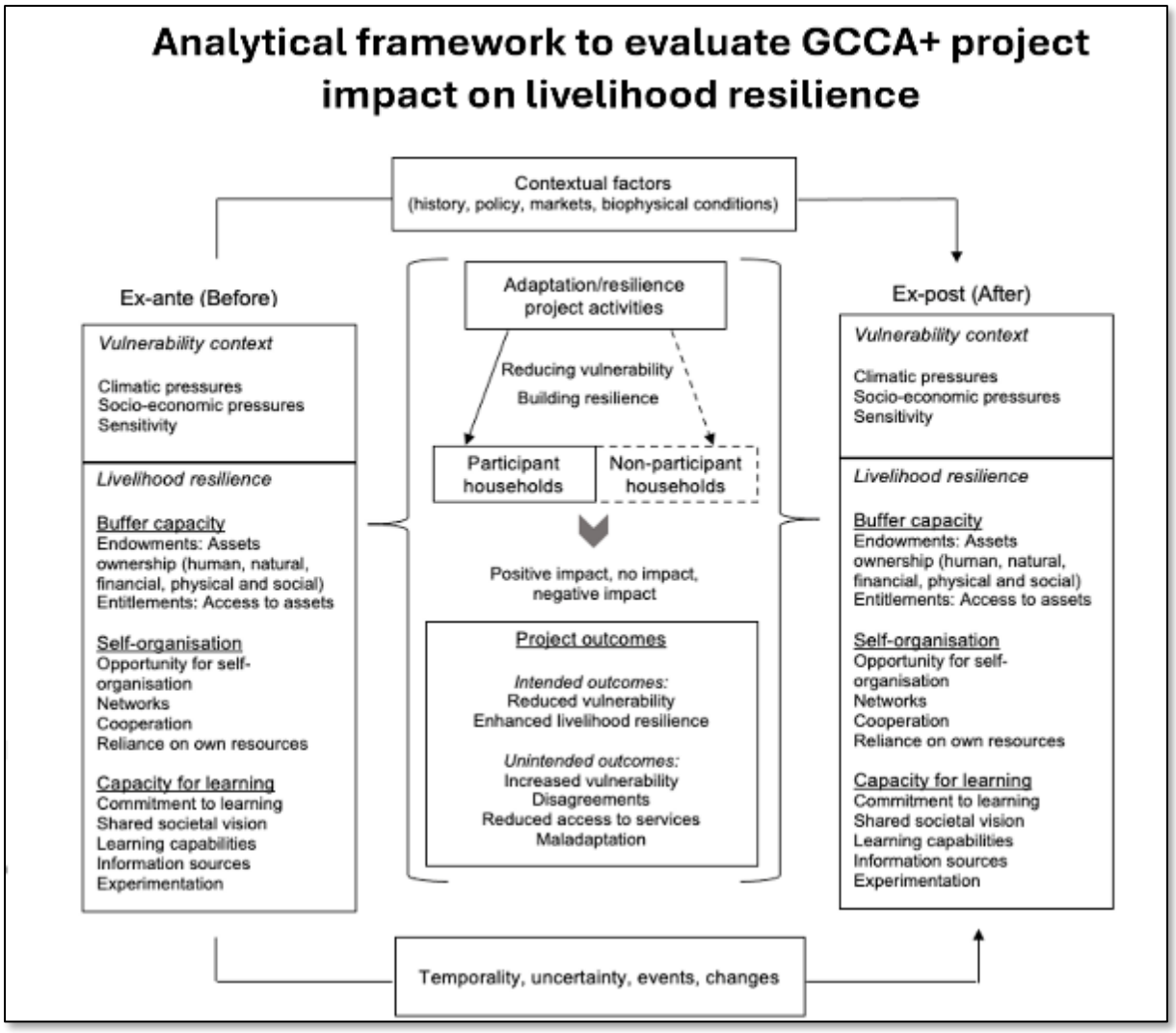
- Implemented in East Usambara between 2015-2019
- Worked alongside the project in real-time: household survey and ethnographic data analysed
- The project implemented a broad variety of capacity building and income generating activities such as:
    - climate smart-agriculture
    - butterfly farming
    - saving groups
    - economic groups
    - water infrastructure and sanitation
    - and natural resources management

= an integrated programme

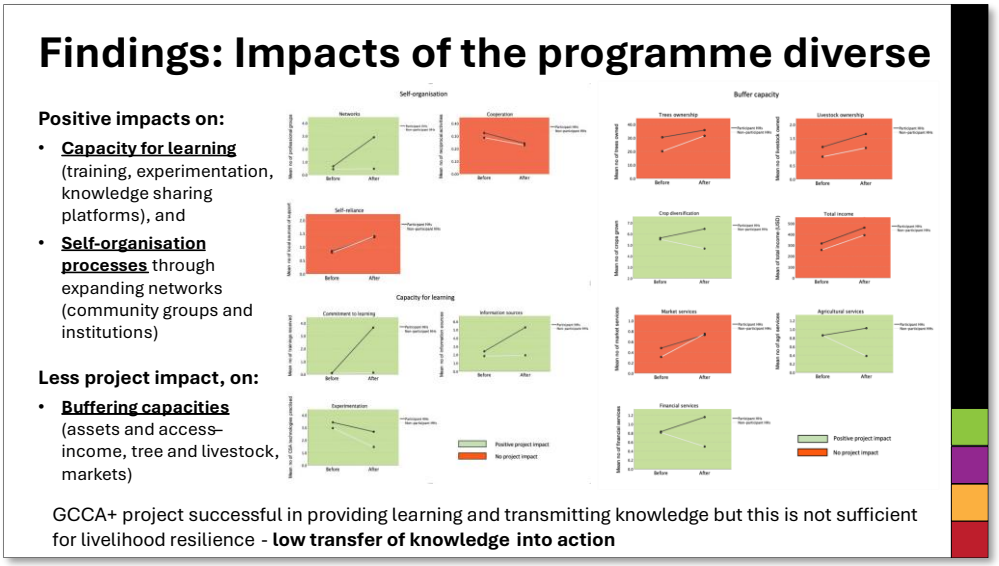
Evaluating Livelihood Resilience

To evaluate GCCA+ project impact on livelihood resilience:

- Marta developed a method and framework (published in Gaworek-Michalczenia et al. 2022)
- Data was collected, and analysis of vulnerability and livelihood resilience conducted:
    - **before and after intervention**
    - with **households participating (P)** and **not participating (NP)** in intervention
    - Focus on **difference between P and NP**



Source: Gaworek-Michalczenia et al. (2022) Evaluating the impact of adaptation intervention on vulnerability and livelihood resilience. Climate and Development. https://doi.org/10.1080/17565529.2021.2018987



Annex 4 Presentation 3: Livelihood aspirations research

Presented by Dr Ruth Smith, Dr Marta Gaworek-Michalczenia and Abduel Kajiru

Livelihood Aspirations

What are aspirations?

- Aspirations can be thought of as ***wants and desires***
- Individual and community aspirations are ***shaped by different societal and cultural contexts***

Why is it important to research and understand aspirations?

- Aspirations of smallholder farmers play a significant role in shaping their activities and investments
- Understanding farmers' aspirations can help shape more effective agricultural development programs by aligning interventions with what farmers want to achieve
- **Determinants of Livelihood Aspirations**
- Aspiration gaps are the difference between what an individual aspires to and what he/she already has, or is able to achieve
- These gaps affect individual behaviour and capacity to achieve aspirations

Potential challenges/barriers to achieving aspirations:

- **Structural Barriers**: e.g. limited access to credit, markets, land, and technology
- **Psychological Barriers**: e.g. low self-confidence or a perception that change is not possible can impact farmers pursuing their goals
- **Social Barriers**: e.g. gender, ethnic group, or social hierarchy may restrict the ability of certain groups to pursue or realise their aspirations
- **FoSTA-Health Research: Livelihood Aspirations**
- Detailed interviews
- Explored livelihood aspirations over time from early childhood to present
- Also explored future plans for themselves and their children/relatives
- Sampling across age, gender, upland/lowland, market access

Findings: Aspirations across Muheza District are diverse

- Aspirations closely linked to expanding spice production – it is seen as a lucrative livelihood activity
- Reasons increase income from spices to improve education for children, improve household infrastructure, acquire own means of transport
- Farmers also aspire to engage in other income-generating activities – for example small business, restaurants, boda driver
- Farmers highlight numerous challenges with spice production:
    - Seasonality & high labour intensity
    - Changing climatic conditions, pests & disease
    - Unstable markets and fluctuating prices
- Outcome: farmers aspire to diversify income to improve livelihood resilience

Findings: Youth Aspirations

- Perception of others that youth think agriculture is 'hard work' and doesn't bring quick returns
- FoSTA research: youth do want to engage and expand spice production

- Positive impact of development interventions: more youth want to engage in spice agribusiness
- Currently youth participation is focused in harvesting/transportation activities
- Youth face specific barriers in expanding *spice production* (e.g. land access)
- Young females face challenges in engaging in certain income-generating activities (e.g. boda/middlemen)

How can projects/research influence aspirations?

- Development projects and research can influence aspirations.
- GCCA+ integrated programme supported livelihood diversification. Spice farming was promoted among other activities:
  - study tours
  - trees environmentally friendly & climate-smart

But some issues remained (volatile markets, storage and drying facilities).

- Care with promotion of specialisation in spice farming while farmers aspire to diversify incomes for security / resilience.
- Research can influence aspirations too (+ve & -ve)!

Key findings

- Development projects and research can influence aspirations
- Research show that aspirations focus on diversification and resilience
- Diversified aspirations therefore need to be reflected in diversified interventions
- It is important to consider the risks and opportunities associated with specialising in one particular crop / activity

Annex 5. Presentation 4: Women's empowerment

Presented by Dr Ruth Smith and Abduel Kajiru

Women's Empowerment

- However, women's empowerment is **a complex concept that can mean different things to different people, and varies according to location and cultural context**
- **Measuring women's empowerment** involves assessing their ability to make choices, the resources they have, & their achievements
- **Complicated to measure** – there are many different approaches to measurement

FoSTA-Health Research: Women's Empowerment

- In-depth oral history interviews –exploring empowerment through the participant's life choices, their resources, and achievements
- We also use semi-structured interviews, focus groups to explore understandings and experiences of empowerment
- We use the participatory Photovoice methodology to explore empowerment visually through photographs

Findings

Many different understandings and experiences of Empowerment

- **Female smallholders largely understand empowerment as receiving loans** – often through groups
- **Empowerment in this way is viewed as something they receive from the government and development organisations**
- However, **this raises challenges for how women experience empowerment:**
    - Women's access to groups can be limited by lack of money and their relationships with husbands, and the groups don't always work as intended. Additionally, high-interest loans can be hard to repay, leading to conflicts in both the group and at home
    - This makes empowerment challenging to implement and receive

Many different understandings and experiences of Empowerment

- **Some women view empowerment as economic independence – but not all.** Other women want to share the household income with their partners, and to sit down and decide together on its use.
- **Some women also view empowerment as education** – in agriculture, and in understanding their rights. This **training can**, however, **influence their understanding of empowerment**.

Approaches to Empowerment

- **Empowerment work needs to challenge more than just 'men have power over women'**
- **Structural power is embedded** in social, political and economic systems, and shapes who has access to land, resources, opportunities and rights and who does not
- So, there is a real need to consider empowerment more broadly in development

Annex 6. Presentation 5. Establishment & functioning of groups/cooperatives

Lived Experiences of Projects: project groups

Development project activities are often delivered through community groups

- Marta's PhD followed the implementation of the GCCA+ project activities in real-time, at intervals, between 2016-2019
- Collected community opinions and ethnographic data on the establishment of groups, functioning of groups, challenges of groups and the opportunities such groups provide.

GCCA+ project groups

GCCA+ set up many project groups intended to enhance climate and livelihood resilience:

- Farmers field schools – '*shamba darasa*'
- Economic groups – spice producers' groups
- Microfinance groups – VSLAs
- Butterfly groups – butterfly farmers' groups
- Beekeeping / Dairy cattle groups
- Modern stoves groups
- Natural Resources Groups/Committees – VNRC, VLUM Committee, River Committee etc.

FoSTA-Health Research: Groups and Cooperatives

Exploring different spice groups & cooperatives as ways for farmers to manage and access markets:

- 'ZIMISA Amcos' spice cooperative (Zirai/Misalai)
- 'Magoroto Amcos' spice cooperative (Magoroto)
- 'Hatushindwi' spice processing group (Amani)
- 'Mbomole Hill Spices' processing group (Mbomole)
- 'Tifanane' spice purchasing group (Amani)

Opportunities of Groups

- Bringing people together to share ideas and work together can help to build collective agency
- Collective action and collaboration can lead to empowerment
- Group work provides the foundation to test more innovative approaches to participation
- Legacy of past projects – what worked well? Include community perspectives in reflection

Challenges of Groups

- Sharing of benefits – from training and education to monetary benefits
- Knowledge sharing models (e.g. CBTs) don't often work in practice
- Avoidance of 'participation burden'
- Elite capture and inclusion of most vulnerable
- Sustainability of groups beyond project lifecycle

- **Challenges in Establishment of Groups**

Selection Criteria

- Different selection criteria for different types of groups
- Perception of selection bias

Membership Requirements

- Financial requirement for some groups
- Gender barriers to membership/participation

Community Perspectives

- Some farmers prefer non-group work
- Legacy of past group failure/collapse

Challenges in Functioning of Groups

Structure

- Disconnect between purpose/goals of group members and those of development workers

Activities and Information

- Poor participation, drop-out & conflict

Conflict Resolution

- Affects relationships within group and wider community

Suggestions Forwards

Establishment

- How to enable inclusion of most vulnerable
- Consider financial & gender barriers to participation
- Reflect on legacy of past groups & include community perspectives on what worked and what didn't

Functioning

- Ensure open and transparent group structure, & manage expectations
- Vary information/activities to consider different abilities & seasonality
- Integrate conflict resolution into groups

Sustainability

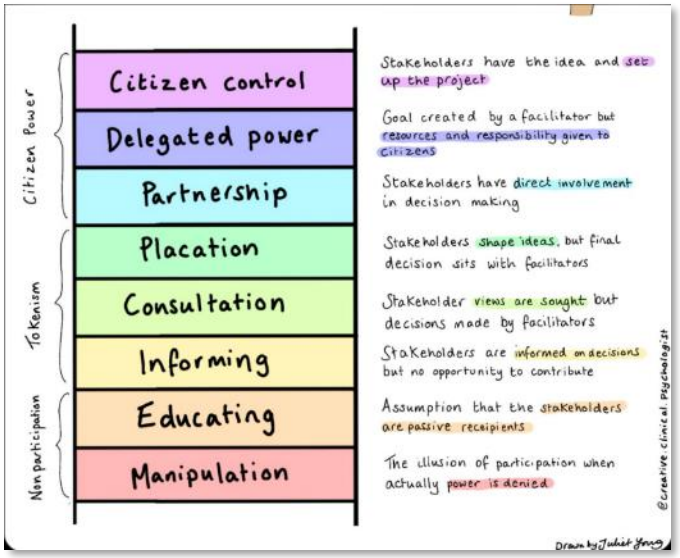
- Consider models for sustainability of groups beyond project lifecycle

Annex 7. Presentation 6: Participation and participatory methods showcase

Presented by Dr Susannah Sallu and Emmanuel Lyimo

Participation

- A social process ‘to take part in’ / ‘to share in’
- Brings people together to collaborate, to solve problems, to seek opinions
- Levels of participation (Arnstein’s ladder, 1969)
- Stakeholder inclusion, social learning & empowerment



- Many participatory approaches / methods / processes applied to:
- Plan, monitor, evaluate
- Learn and empower
- Research and analyse

- Examples include:
- Community mapping
- Focus group discussions
- Visioning process

- As well as method need to consider who is invited, who has power, who has voice?

Twitter feed @Juliet_Young1

Participation in projects

- **Participation** of communities together with project partners **at all stages** of the project cycle is **important to achieve sustainable outcomes from projects**:
- Design stage
- Implementation
- Monitoring & Evaluation
- Close & design of follow projects

Annex 8. Presentation 7: Participatory method example

FoSTA-Health: Photovoice showcase

• Aim: Use Photovoice as an inclusive and participatory approach to visualising and exploring gender agricultural dynamics in Tanga region, Tanzania

- ○Gender roles across value chains
- ○Women's Empowerment
- ○Aspirations

FoSTA-Health: Photovoice

- Process:
- Sampling
- Inception meeting
- Participation, ethics and safety

<u>Co-Production</u> of aims, objectives, expectations, process, challenges/concerns

- Group meetings
- Individual check-ins

<u>Exhibition</u>

Saidati (Zirai)

“Kumtua mwanamke mzigo wa kuni kichwani”

“Karafuuu mbichi (zao ambalo halina soko la uhakika)”

Issa (Zirai)

“Nitanuri ya tofari zaudongo”

“Hiini iriki ambayo inatoka shamba”

Dastan (Kwezitu)

“Hii ni pilipili manga ambayo inatoka shamba”

“Hap nivijan ambayo tumeitana IL tushauliane mambo matatu”

Dastan (Kwezitu)

“Picha hii inatuonesh wakina mama wk mtoni”

“Hii ni changamoto ambayo tunapitia hasw magal bodaboda katika balabala yet haswa pia kwawamam ambayo wajawazit wagonjwa wapata tab San wakat wa mvua Kam hiv”

Annex 9. List of research topics recommended by participants

Crops

What variety of cloves has high productivity?
Spices disease and insect pests control in spice production
Research on varieties of clove and cardamom crops.
Research on clove disease.
Cloves cloning
Compatibility of inter-cropping between crops e.g. cloves + cardamom etc
Pathogens and disease evaluation on cloves and cardamom.
TARI / Extension officers - what is cause of clove drying / death issue and how to solve it?
Awareness on crop markets
Research on the production of grain crops (Maize and Beans) Misalai Ward
Can a warehouse system of marketing be introduced in spices marketing.
Suitable intercropping in spices production.
Research. Leaf blight on the cinnamon crop.

Ecological research

Study of invasive plants in Amani reserve
Research on the presence of rare species in the Amani / Nilo reserve

Gender

Tafiti. The relationship of women's non-participation in leadership positions in relation to how girl / boy children are raised.
Increase of men's death in relation to not engaging in home chores.

Other

Eco-tourism
Nilo NFR. To conduct research on the other side of Nilo where It seems to be droughty and prone to fires together with the livelihood of the villagers surrounding the forest.
Empowerment. Impacts of resource provision on agency and achievements.
Risks of population increase for the protection of Amani.
In what way are pastoralists involved in environmental protection.
Why are people cutting trees