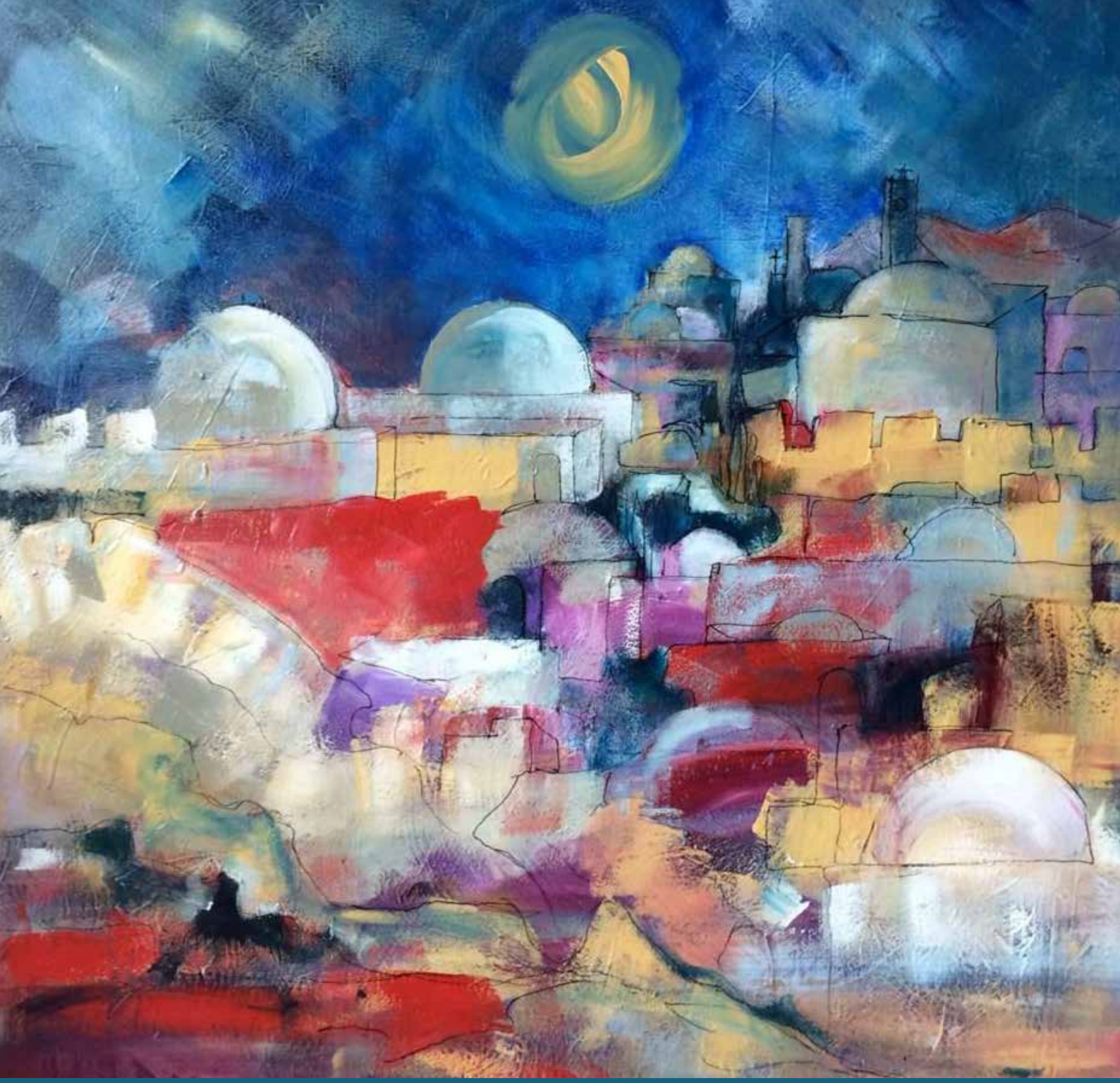

Workshop report: Quality controls in farmer seed systems

Seacliff, Zanzibar 21-23 August 2019

African Centre for Biodiversity

www.acbio.org.za

Contents

Shaban Ameri Hajj's organic farm in Bungi, Zanzibar

On 7 April 2015 the African Centre for Biosafety officially changed its name to the African Centre for Biodiversity (ACB). This name change was agreed by consultation within the ACB to reflect the expanded scope of our work over the past few years. All ACB publications prior to this date will remain under our old name of African Centre for Biosafety and should continue to be referenced as such. We remain committed to dismantling inequalities in the food and agriculture systems in Africa and our belief in people's right to healthy and culturally appropriate food, produced through ecologically sound and sustainable methods, and their right to define their own food and agricultural systems.

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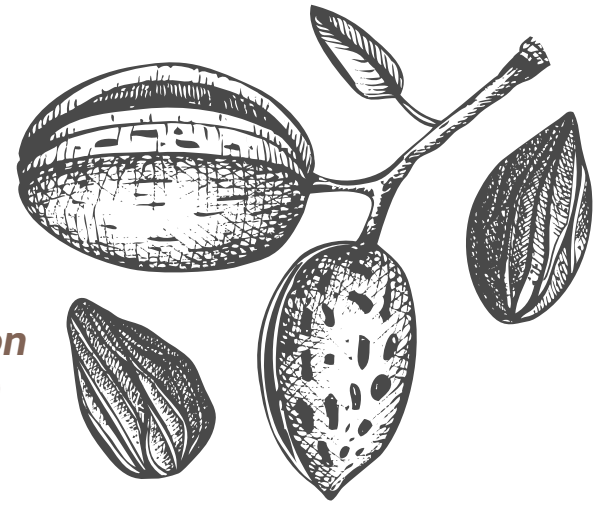
Cover image: Helen Day

Most of the photos were taken on Zanzibar, particularly of the field visits to the Permaculture Design Institute and Shaban Ameri Hajjís organic farm in Bungi.

Introduction



"We cannot win this struggle if producers are not committed to searching for solutions and being involved." ***Noufou Koussoube, Fédération Nationale des Groupements de Naam (FNGN) Burkina Faso***

Background

In Africa and beyond, smallholder/peasant farmers produce and reproduce the majority of their own seed needs from season to season. Commercial seed markets have developed but only for a narrow range of profitable crops and varieties. A combination of neglect, commercial market interventions, environmental shocks, changing consumption patterns related to urbanisation, and many other factors has resulted in loss of biodiversity and crop variety. Despite these challenges, farmer seed still constitutes the majority of seed used and exchanged on the continent. But these seeds receive scant recognition, and there is limited support for their reproduction, adaptation and use by farmers, for farmers.

The African Centre for Biodiversity (ACB) organised the meeting with the objective of facilitating a discussion about what kind of support may be required to build farmer seed systems, and how this can be provided. The overall aim was sharing and learning from those with long experience on issues related to farmer seed systems, globally and in Africa. The 32 participants came from 10 African countries (Burkina Faso, Ethiopia, Kenya, Malawi, Mozambique, South Africa, Tanzania, Togo, Zambia and Zimbabwe), and five countries beyond Africa (Brazil, France, Italy, Nepal and the United States). Participants came from farmer organisations, non-governmental organisations (NGOs), academia and government institutions (specifically gene banks and research institutes) (see Annex I, Participant List).

The report is structured according to the programme. A number of topics therefore appear more than once in the course of discussion. Only cursory grouping was done within thematic areas of the programme. The programme included definition and recognition of farmer seed and farmer seed systems; production quality controls in farmer seed systems; markets; and policy frameworks and processes (see Annex II, Programme).

Day One

Welcome and introductions

The workshop opened with a *mistica* led by Sebastião Estevão, Severina Pereira and Gabriel Fernandes from Brazil. Mariam Mayet, Executive Director of the ACB welcomed participants and highlighted that there is little institutional support for farmer seed systems and farmer seed. The ACB did research and found a real scarcity of information on what farmers are doing around seed production in their systems. It is happening but it is poorly

recognised and poorly researched. As a result, the ACB considered it was time to bring diverse people together, practitioners – those who have been thinking and working on the seed for a long time – to share ideas.

The lessons from the meeting will go into political work towards recognition, protection and support of farmer seed systems on the continent and in the world. Mohammed Haji from the Ministry of Agriculture, Natural Resources and Fisheries in Zanzibar extended a warm welcome to participants, and thanked the ACB for organising the meeting.

Sebastião Estevão and Isidro Macaringue

Permaculture Design Institute, Msim Farm, Zanzibar

Defining farmer seed systems and farmer seed

Farmer seed and farmer seed systems

*"**Farmer seed** is defined by a process of production, and is conserved and multiplied by farmers in the same field as it is cultivated …This seed constitutes populations, not varieties. Evolving selection allows us to choose changing characteristics every year. We must characterise the farmer seed. **Where does the seed come from, what are its origins, and which are the parents**."* **Guy Kastler, Confédération Paysanne/La Via Campesina (LVC), France**

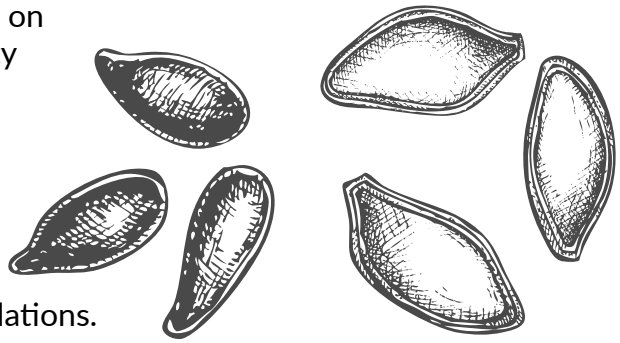
The first session was on defining farmer seed and farmer seed systems. **Stephen Greenberg** from the **ACB** presented a framework for discussion. Stephen proposed a basic definition of farmer seed that includes **any seed reproduced by farmers themselves in the past season or earlier, referring to all seed in the system except for the first use of seed from the formal sector**. This can even include hybrids to the extent that farmers choose to recycle these. Stephen proposed that 'farmer seed system' simply refers to the diverse activities of sourcing, selection, production, enhancement and adaptation, storage and exchange of seed done by farmers themselves with their own seeds.

With regard to exempting farmer recycling, use and exchange of protected seed from the plant variety protection (PVP) laws, Stephen proposed a **threshold** to distinguish between commercial and non-commercial production, linked to definitions in national policies and laws of smallholder farmers and small enterprise. There are many way of defining a threshold, e.g. household income (relating the threshold to average incomes in a country or area), production practices, land size, volume of production or turnover. The main challenge for measures such as land size or volume of turnover is that these will vary by crop type and production region and will therefore need specific and different thresholds for every crop, rendering the system unwieldy and difficult to implement in practice.

Turnover may therefore be preferable because it is about enterprise size regardless of product type or amount of land. The idea is that existing seed and PVP laws only apply to the commercial sector, as defined by this threshold with exemptions for those below the threshold. This means smallholder farmers who save, adapt and reuse protected seed will not be harassed and criminalised by the law. However, this leaves this majority of farmers only with an exemption and this is only in relation to protected varieties. There is still a need to fill that gap with appropriate recognition and support to strengthen farmer seed enhancement and exchange practices with adaptation to changing conditions, not least climate.

The formal/informal (farmer seed system) axis is not the same as commercial/non-commercial. Formality is about specific requirements and procedures that must be followed by law, e.g. agronomic practices, registration procedures, storage conditions etc. **Informality/farmer managed**

seed systems means there are no externally imposed regulations, although farmers in interaction with users may and do also have standards that must be adhered to. In this sense, we can think of a continuum from formal through quality declared seed (QDS) and intermediate to farmer seed systems. This continuum can be considered on the basis of different aspects e.g. source of the seed, quality controls (actions to meet standards), and quality assurance (monitoring and documentation) (Figure 1). Above the diagonal line in Figure 1 is formal, below the line is informal or the farmer managed seed system. Degree of formality of quality control procedures is just one dimension of seed systems. There is a question about the possibility and value of registering more dynamic populations. We must ask: what is the value of registration to farmers?



"We know farmer seed systems do exist in member states. The role farmers play in ensuring food security is huge." **Justify Chava, Southern African Development Community (SADC) Plant Genetic Resources Centre (SPGRC), Zambia**

Figure 1: Continuum from formal to farmer seed

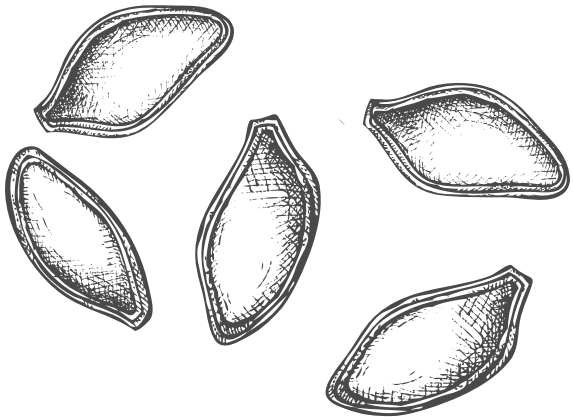
System	Variety	Quality control	Quality assurance
Formal	Registered	Defined external standards	Defined procedures
Quality declared seed (QDS)	Registered	Defined external standards	Defined procedures, with minor relaxation (e.g. fewer inspections)
Intermediate	Registered	Farmer-based	Voluntary
Farmer	Own (populations)	Farmer-based	Voluntary

QDS is essentially the same as the formal system but with some minor relaxation of quality assurance measures (e.g. fewer official inspections). Intermediate systems differ from farmer seed systems primarily in the source of planting materials for seed production. In intermediate systems, seed comes from the formal sector but is simply shared with farmers through the public sector, NGOs or aid programmes and there is no further monitoring or regulation of use. Farmers are free to multiply and share or sell to others. The main purpose is to rapidly disseminate new planting materials to farmers for use. Intermediate systems may also incorporate a commercial element, using formal sector quality controls, but this is not a defining feature.

Initial points of discussion that stimulated further reflection during the course of the workshop included the following:

- We also need to characterise the complexity and diversity that comprises farmer seed. We must consider the discourse of static varieties versus dynamic populations.
- Thresholds may be used for defining exceptions to seed and PVP laws, but we must be careful not to lock farmer seed systems into a small-scale, non-commercial box. For example, informal traders sell hundreds of tons of farmer seed. We must not apologise for farmer systems, which can have large geographic reach and move large volumes across the continent.
- We should question the use of 'formal' and 'informal' systems. The use of the term 'informal' is pejorative and negative. We could think of commercial and industrial on one side, and local on the other. This one is controlled by farmers. They don't lack controls. Industrial seeds have their origin in farmer seed. It is better to talk about farmer seed systems than informal systems.
- Methods of production are important in defining whether it is farmer seed or not.
- There are concerns about including recycled hybrids in the definition of farmer seed. It is one thing to call for farmers' rights to reuse hybrids if they so choose, but these are not farmer seeds since yields will decline sharply over time.

"I grew up in a village. I was brought up by informal food or informal seed. There is no informal person. What do we mean when we say informal? It is a power dynamics issue." **Andrew Mushita, CTDT Zimbabwe**



Shaban Ameri Hajj's Farm

Recognising farmer seed systems and farmer seed

Andrew Mushita from **Community Development Technology Trust (CTDT)** in **Zimbabwe** presented on the importance of recognising farmer seed systems. Andrew started by indicating that in Africa there are over 2 000 native grains, roots, fruits and grasses whose seeds are eaten.

Over 90% of seed is sourced from within farmer seed systems. Their advantages are proximity, low cost, meeting local needs of farmers and ecological adaptability, especially under conditions of climate change. Farmer seed systems are important for the social-ecological resilience of the global food system and function as social networks. Replacement of farmer seed systems by formal seed systems has not been successful, especially in developing countries.

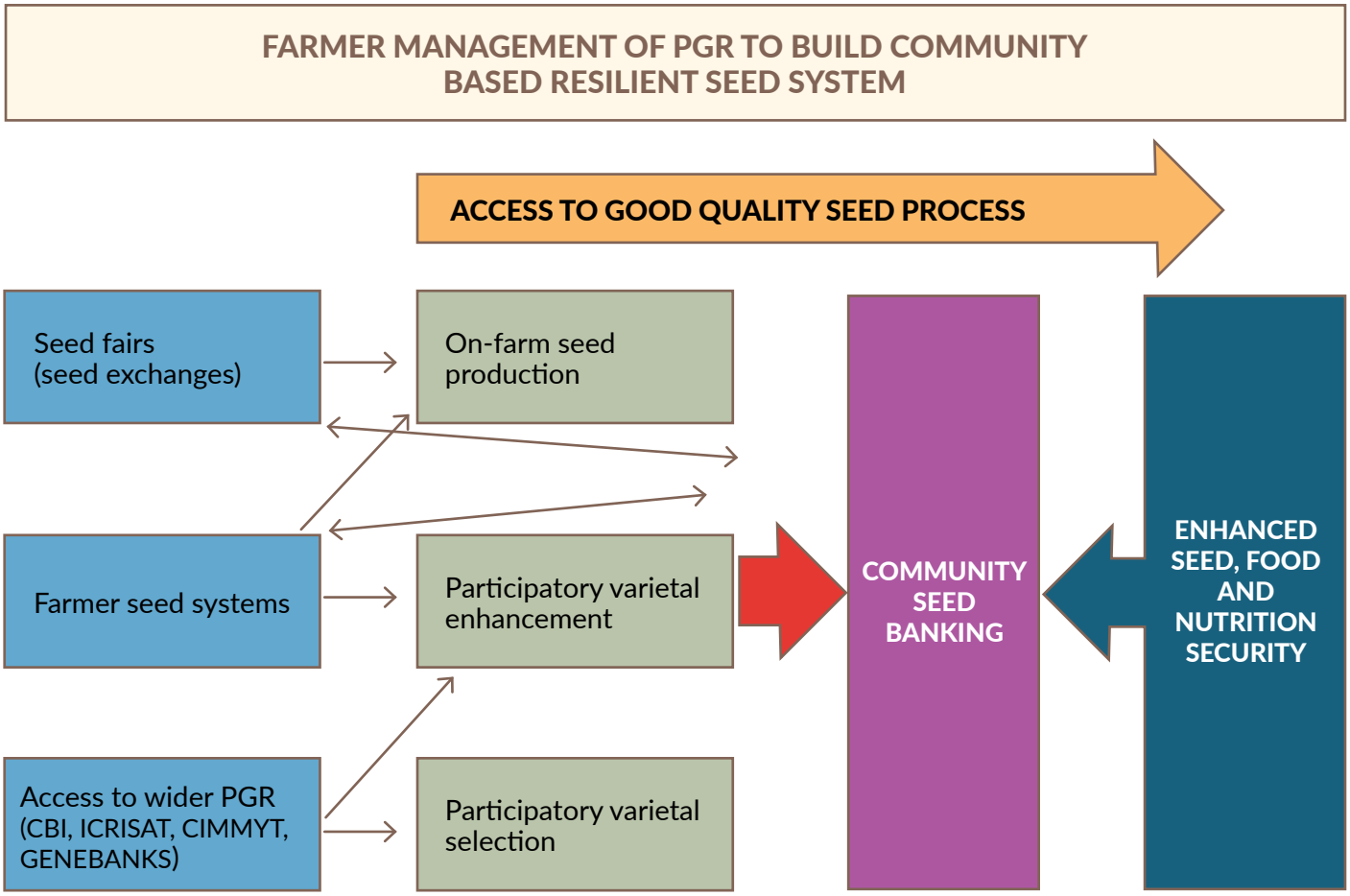
"If we think of how much agricultural research has gone into commercial seed systems, it has not worked at all. Farmers have not adopted these improved crops because they cannot adapt to diverse conditions." **Andrew Mushita**

Policy reforms are required to recognise and support farmer seed systems and technical assistance to support and promote them, including participatory evaluation and selection and access to advanced segregating lines. We should aim for complementarity between commercial/formal and farmer systems.

Source: Andrew Mushita

Andrew identified key elements of farmer seed systems being:

- Strengthen community seed systems programmes – community seed banks, access to segregating and advanced lines, and linking with public research institutions
- Promote value-addition at local level – value addition in neglected and under-utilised species (NUS), seed fairs/exchanges
- Strengthened farmers' capacities in seed multiplication – seed growers, participatory variety selection (PVS) and enhancement
- National seed associations owned by farmers (e.g. Champion Seeds Co-op developed by CTDT in Zimbabwe)
- Community seed production initiatives – on farm seed multiplication, farmer field schools (FFS), capacity building



Source: Andrew Mushita

The process of building community based seed systems towards community level seed self-sufficiency consists of:

- Strengthen community knowledge and skills related to varieties and seeds – practical methodologies are FFS, community seed banks (CSBs) and diversity plots
- Strengthen farmers' access to quality seed – link with research, participatory plant breeding (PPB) – capacity to realise NUS for food and nutrition requirements
- Strengthen community seed production (seed quality) – seed multiplication by local farmer associations

Supporting farmer seed production includes practical-technical support as well as advocacy and policy engagement:

- Participating in seed fairs, CSBs etc. and engaging with policy-makers through these activities
- Participating in local or regional seed production initiatives.
- Engaging and influencing local seed systems, including traditional and local authorities.
- Engaging with national government on seed laws and regulations, e.g. Parliamentary portfolio committees. In many countries, national seed laws are the real challenges.
- Lobbying regional bodies e.g. Southern African Development Community (SADC) and Common Market for Eastern and Southern Africa (COMESA) Seed Harmonization Protocols.

"In the SADC Seed Harmonisation Protocol there is a provision but no mechanism to define what a farmer variety is. Descriptors should not be based on the formal sector. We need basic requirements of what it should be, minimum requirements. These seeds don't need to go through distinct, uniform and stable (DUS) testing. It is in its own context and we should not try to fit it into the commercial system. Complementarity is important." **Andrew Mushita**

Guy Kastler from **Confédération Paysanne, a member of La Via Campesina in France**, presented on means of recognising farmer seed and unpacking DUS – its relevance or application beyond the formal sector – and alternatives.

Source: Andrew Mushita

On international law there are three notions subscribed to in the text. First, the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) on genetic resources on nutrition and agriculture, defining seeds that are on the farm, and farmers' rights defined by the Treaty. There are two types of seeds on the farm. There are farmer seeds, which are millennia old and in many countries make up the majority of seeds used every year. Then there is farmer seed from a variety protected by intellectual property rights (IPR). These are half the seeds used in developed countries.

Internationally, farmer seed is three quarters of seed used. In defining the characteristics of all seeds, we have to come back to the definition of farmer seed. **Farmer seed is defined by a process of production, and is conserved and multiplied by farmers in the same field as it is cultivated.**

This allows good adaptation with no chemicals. In the growing conditions, seeds can be reproduced. **This seed constitutes populations, not varieties.** Not all are identical. They evolve according to the growing conditions. Each seed does not present all the characteristics of the population. The main method used is vacillating selections. These are the most interesting. **Evolving selection allows us to choose changing characteristics every year.** There is a link to climate change and the land where the seed is planted. Mixed seeds are planted, and then some seeds are moved or cross breeding is done. These are methods used by farmers.

Industrial seeds were obtained outside farmer's fields through labs and computerised techniques. They were then multiplied thousands of kilometres from the fields in which they will be used. They are not adapted to the fields or the land. They are adapted to chemical additions and mechanisation.

The objective is to replace farmers by new technologies. The seeds are dependent on technologies and added chemicals. It is difficult to cultivate using agroecology and the methods always used by farmers in the industrial mode of crop and food production.

There must not be DUS.
What is uniformity? It means all the seeds are identical. Stable does not mean it reproduces the characteristics every time you plant or replant. With hybrids and other commercial seed they usually degrade in the field. For sale on the market, the first crop is always better than the others.

These characteristics of homogeneity and stability are not interesting to farmers. What are these characteristics used for? They are given importance because they are linked to property rights. This is why the seed must be homogenous. How can you link these characteristics to defining seed according to property rights if they evolve? So they must not evolve? According to this we must eliminate all seeds that are not homogenous and stable, by eliminating farmer seed that cannot be recorded in catalogues and treaties.

Their argument has evolved because industry brings biomolecular characteristics and genetic information. This is a new concept with lots of discussion at the moment, this issue of digital sequence information of characteristics of interest e.g. insect resistance. There is a multitude of plants and for many species, for example cotton and soya, patents have been sought and granted to allow industry to stop farmers from reproducing seed with these specific characteristics. This is linked to IPR. To get a patent, the invention must be new.

What is new is what has not yet existed or been brought to the knowledge of the public. No farmer knows the totality of the genes, so industry say they know the gene, they know it is resistant to insects so they must become the owner of this trait. So industry is abandoning the obligations of the catalogue in the Treaty to be able to commercialise the seed.

To homogenise and stabilise seed takes five to 10 years. It takes too much time for industry, but now they have IPR, which allows them to commercialise new seed through patents on genetic sequences. The traditional seed industry is still trying to defend the catalogue because they don't have much money to develop digital sequencing techniques to allow them to patent the seeds.

It is true that when you use an industrial variety, it allows some diversity in farmer seeds. But it is important that it remains a marginal part otherwise farmer seed systems will become dependent on chemicals, if selected industrial seeds are used. **It is important not to accept all industrial seed e.g. genetically-modified (GM) seed, whether declared or hidden. These must not be allowed into farmer seed systems.** Diseases come through the industrial system because industrial seed are much more susceptible to pests and diseases. These seeds cannot resist diseases without added chemicals.

Another category that is not well known is represented by management of gene banks, to provide genetic resources for nutrition. These are used for industrial selection. These seeds are in banks where they lose capacity to evolve due to climate change. They need to be reproduced to retain their characteristics, or we lose diversity. This is important for farmer seed. Farmers in richer countries have lost their traditional varieties.

We cannot restart farmer selection if we don't have **access to gene bank materials**. It is important for all farmers in the world to accelerate farmer seed selection. Neighbours sharing with each other is not enough to bring new characteristics. Farmers need access to germplasm.

What information is needed to characterise farmer seed so we don't introduce GM?

We should have production characteristics. **As a farmer practicing agroecology, if I want to know if the seeds can be used in my system, I need to know the species – its specific characteristics – where they come from, how they were selected, who multiplied them, and in what year they were multiplied, as well as the geography, climate, field, and cultural system to which the seed is adapted.** This allows me to know whether I will be able to use it and whether it is contaminated by GM or diseases, or not. This identity will tell me if it will lead to good production or not. I need to know the climate pressure on the seed before I buy it on **local markets**. Farmers who produced the seed will allow me to know those characteristics.

These personal relationships are enough to establish consistency. Because a person who sells bad seed will quickly be rejected by the community. We don't need laws. But, personal relationships do not exist anymore. In many countries, laws tolerate informal exchanges. But as soon as you have a reseller, the law does not allow exchanges. Today, companies sell farmer seed using the fact that we have not yet defined what farmer seed is. So we must ask those companies: was the seed not produced by farmers? In Brazil, they used an informal system to introduce GM soya, even when government did not allow GM crops, and the government was forced to legalise it.

There are a few examples of experimentation by farmers. The first is by farmers in Chiapas, Mexico. They forbid maize crops of which they don't know the origin. **In the case of uncertainty on seed quality, a farmer can do isolated crops. For many years they will observe the seed and if happy will integrate it into the seed system. This goes well with farmer seed systems, where most seeds are local seeds. There is not a lot of seed from elsewhere, so there is time to observe before including them. The exception is if there is loss of the total local stock because of a disaster.**

The official catalogue is impossible for farmer seeds that are diverse and not stable. We must soften the catalogues. In Europe there are varieties of ancient conservation, in Brazil there are creole varieties, in Switzerland niche varieties. These are interesting adaptations. There is no tolerance on stability in Europe. An obligation of stability may prevent farmers from using their own seed. But we must be careful on **phytosanitary criteria**, so the seed is recorded, and we must respect **purity**. It is important to respect phytosanitary norms, e.g. analysis of pathogens. We live with microbes and insect pests.

For farmer seed we should replace the catalogues and forbid commercialisation, and include this in the gene banks and treaties. The danger is that even though the Treaty forbids those looking for seed in gene banks to register patents that limit access by third parties to these seeds, the Treaty does not forbid their trade. So if Bayer can do a genetic sequence and can put a patent on that, then farmers will not be able to use this seed or put it in a seed bank. **Farmers** need to be able to **record their seed, and establish a community catalogue, identified by their own criteria**, and reuse characteristics.

These criteria depend on tracking of these seeds to make sure **GMOs and diseases are screened out**, to allow farmers to explain that the seed comes from farmer seed. We must not allow pirating through patents of genetic sequences in gene banks. There are many terms used by gene banks. **Many communities ask states to recognise their inventories but not to publish the characteristics that could enable piracy**. They don't commercialise the seeds apart from well-known varieties. They should not commercialise seeds as long as there are patents on them.

Source: Riccardo Bocci

Riccardo Bocci from **Rete Semi Rurali**, a seed network in **Italy** with 40 member organisations, offered insights from Europe on the farmers' varieties discussion. Rete Semi Rurali also works with the Ministry of Agriculture on the ITPGRFA and Riccardo is on two expert working groups, on Sustainable Use and Farmers' Rights under the Treaty.

Riccardo explained that seed laws were invented by Europe, with three main objectives: quality, productivity and competitiveness. The system rests of the twin pillars of variety/material registration and certification. First the breeder carries out trials. Then regulated value for cultivation and use (VCU) trials are carried out by examination offices. Post-registration trials are conducted by public, semi-public and private bodies.

In Europe, until 1998, only conventional varieties were permitted to be commercialised, defined on the basis of DUS/VCU and IPRs based on the International Union for the Protection of New Plant Varieties (UPOV). Open pollinated varieties (OPVs) are relatively heterogenous. Uniformity is removed as a criterion, and stability may not be a required characteristic. In 1998 a new category of conservation varieties was invented. This is not like modern seed. It is an adapted system. You don't need uniformity. IPRs/UPOV do not apply. These are mostly landraces with historical data. We spent 10 years in negotiations to define these varieties and still it is not working well.

Then in 2011 a new category of materials was invented, **heterogenous materials.** This is not a variety. There is a shift from "distinct" to "identifiable." The process becomes relevant for identity, and traceability is important. You don't need to register these materials, and no IP is allowed. In 2018 we got a specific regulation. But it is only for organic agriculture, defining organic. This new category will come into force in 2021. Officials at national and European levels are now trying to identify, register and certify heterogenous materials.

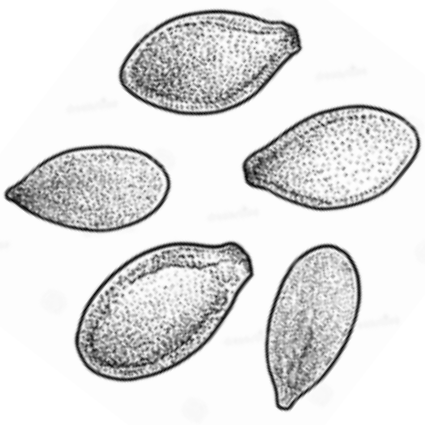
On quality. If we check for off types, we find all of them are off types. It is a population, so there are plenty of types in the field. When we are talking about uniformity, it is easy to categorise. But these are composite populations, so with more diversity the process behind the material is more important. We need to adapt variety registration and certification accordingly. **We don't want to use uniformity or stability to define these materials, but you must still be able to identify the materials you want to put on the market**. Identification means the materials are distinguishable, not distinct. Description of the seed is its performance. Evolutionary and participatory breeding have a long history, going back to the 1920s in the United States of America (US).

Riccardo presented a case study of work on evolutionary breeding and populations. It was a European research project from 2010 on how populations have evolved, and how to describe populations. He explained that they spread genetic resources among Italian farmers, who started using them to sow and grow. In 2019 evolutionary populations entered the seed market and value chains. There is a **derogation for the marketing of populations**. It involves a large number of farmers through the market. Previously there was only **exchange between farmers**. There is interest in using the diversity in populations. With farmers' involvement, we have a label and pledge. We spent 20 years to change the rules, now we can certify populations from farmer to farmer. We have a logo, and are selling flour, pasta and bread from the population.

Key elements of dynamic populations are to describe the parents, degrees of diversity (large or small), the farming system used to adapt the population, and local adaptation (years of cultivation in the same place). It is like playing a game, working with a seed population. It should be adapted to local conditions. It is complicated to use molecular markers. They worked with universities and found that after three years, the markers are not the same. The markers change as the population changes. It is therefore difficult to identify using this method. So we need new processes of certification and registration.

Rather than registration, we talk about notification, where you describe the material you want to put on the market. It is a flexible description, so as the population evolves, the description evolves. It is difficult for officials to understand, but they have accepted the description should change over time. It is a description of breeding methods. You don't need DUS, but use your own test, and say where it was grown, by who, and under which conditions, and describe the uses.

In the US, on conservation, you don't have to apply for DUS. If you want to catalogue the seed, you make a dossier and then they look at it and add. It is just a notification, there is no testing.



Key elements of notification/registration of farmer seed:

- Agronomic description (e.g. macro-economic characteristics, with ranges)
- Description of the breeding methods
- No VCU and DUS testing, but trials under control of the breeder
- Traceability/identification (no classical scheme of seed production such as base-first and second reproduction)
- Use/qualitative description (i.e. quality characteristics of the heterogenous material relevant for the consumers)

Permaculture Design Institute, Msim Farm, Zanzibar

Certification/notification should be perceived by breeders, companies and farmers as not too burdensome. On the contrary, it should help farmers and seed companies to maintain and improve seed quality with a degree of flexibility and openness.

They would like to **change the name from control and inspection to field visits,** with the objective to help farmers rather than tell them what to do. They can then have annual multi-stakeholder meetings for cultural exchange, where they can spend time with officials, explaining in the fields what populations are. You need quality for germination if you put something on the market.

Key elements of certification/notification:

- Send an annual sample to the official body for testing in a lab and official experimental fields
- Annual meetings between breeders/authorities to facilitate the certification process, and identify possible problems and solutions
- Field visits to check some parameters (e.g. pests, weeds, production, health) related to seed quality

They also developed a label with farmers to present the seed to the buyer. These are **new relationships between sellers and consumers based on trust, transparency and the history of the material**. The label is a graphic identity of the diversity of populations, the name of the population, the name of the specific farmers that grew and adapted the population, the history of the breeding process, people and methods, and a pledge on IPR saying the seed is not protected by PVP, it is open source. This is not necessarily legally enforceable, but the ethics behind it is important. It is a matter of trust, with rules the user agrees to if they use the seed. If a company takes us on, we have to inform the public.

Permaculture Design Institute, Msim Farm

So-called informal and formal sectors have different players. We do not talk of formal-informal anymore, but rather about **sustainable seed systems with complementarity**. The same farmers may be operating in both systems. We must present complementarity to officials. The current rules should allow complementarity and not be created only for what we call the formal sector.

Lessons learned

- Seed marketing is not the only possibility
- Participatory, decentralised and multi-actor innovation/breeding
- Need to have a common vision shared by the actors
- Need a legal pluralistic framework
- Need for new professionalisms (e.g. free actors/innovation brokers)

Weaknesses

- Different languages, values and visions on confrontation
- Social processes are fragile and time consuming
- Innovation is still considered only from a technological point of view and social innovation is not considered important in the mainstream framework
- Transfer of technology narrative

"Africa is doing a copy and paste of European laws without realising that Europe is changing those laws now for more diversity and pluralism."
Riccardo Bocci, Rete Semi Rurali

Permaculture Design Institute, Msim Farm

Points arising from discussion that followed:

- On recognising farmer seed, Louise Sperling said Kenya has just created a formal system to recognise farmer seed, called standard seed. Andrew Mushita added there is also a provision for standard grade seed production in Zimbabwe, and Uganda is also moving in that direction. Standard grade seed doesn't go through DUS but it is certified in quality, and inspected by seed services. It is sold at a lower price than hybrid seed. However, Mariam Mayet cautioned that we need to be careful about our vocabulary.
  On standard seed, people are saying they have their own system, they don't want seed to go through formal, industrial seed procedures. We need a discussion about looking at different ways of farmers declaring the quality of their seed. African governments are reluctant to get away from standard seed/QDS. We should put the discussion in a bigger setting.
- Mariam said it is a mistake to start defining farmer seed systems from the perspective of the formal seed sector. It is better based on historical use, exchange, cultural practices etc. Because of the corporate capture of the formal sector and IP, we have to **defend the right for farmers to recycle protected seed**.
- Mariam further said that although Africa may not replicate exactly what was done in Italy, we must say to African governments that they are adopting seed laws that are not working adequately in Europe. The African reality is that farmer seed is considered as grain, as something to dismiss and to be done away with. In Malawi, for example, farmer seed was being criminalised, and this had to be fought.
- Isidro Macaringue from Uniao Nacional de Camponeses (UNAC) in Mozambique said that to stimulate farmer seed systems, farmer seeds need a fair price. The market needs to be open for seeds and their agroecological production. Andrew from CTDT Zimbabwe added on markets that the most affluent people are now looking for local food.
  We can try to create a gastronomic food market. We can declare a gastronomic food city for tourists. People are moving away from highly processed food that is not nutritious – food with high fat, salt and sugar content. They need locally produced food. The issue is how to engage with consumers to create awareness of the health benefits. We should engage with policy makers for space and pronouncements to market and promote these crops, especially neglected and underutilised species e.g. teff and quinoa. This needs awareness, creativity and research.
- A question to Riccardo was what type of support did government give to heterogenous varieties in terms of public policies, farmer associations, civil society organisations (CSOs) to build new categories of farmers' 'varieties' and farmers' rights? Riccardo's response was that they didn't have a lot of support from government. They used research projects to develop populations and then spread them to farmers. You need a lot of farmers to spread the population, but the farmers' union is conventional and not interested.
- Guy said **that in France and Europe, they are working on value addition for products, bread, vegetables etc. that come from farmer seed, they are not working on the idea of value addition of varieties**. The seed companies sell different varieties of traditional seeds. These are farmer seeds, so until we define these seeds properly, it is too dangerous to work on this, otherwise big companies will end up selling these. The revenue of the farmer is not from the sale of the crop.

Production quality controls in farmer seed systems

"When you go to seed fairs, you see that farmer seed quality is good. But it is not tested. It is not recognised but it is there." **Evelyn Chateya, Ministry of Agriculture Seed Services Institute, Zimbabwe**

Quality concerns and responses in farmer seed systems

Bayush Gebremichel Tsegaye *from* ***Ethio Organic Seed Action (EOSA)*** *in* ***Ethiopia*** *shared on quality challenges and responses in farmer seed systems. Traits of quality seed across both farmer and formal systems are:*

- Full maturity/good grain filling
- Free from seed borne disease
- Free from pest attack (in the field or in storage)
- Optimum moisture content
- Free from damage by late rains
- Free from moulding during storage
- Seed viability

Shaban Ameri Hajj's organic farm in Bungi

How farmers respond to quality challenges

Challenge faced	How farmers respond to the challenge
Poor quality	Access new seed if known before planting, and replant the field if known after planting
Mixtures	Clean seeds properly by removing other varieties as well as stones and other debris Selectively harvest, thresh separately, and keep selected cobs/ heads without threshing
Poor grain filling	Do field inspection, selectively harvest and thresh Check if the seed lot is viable or not Get new seed if viability is poor
Poor storage condition	Clean seed container, check seed moisture content, fumigate storage facility, keep in cool and dry place, seal seed containers air-tight
Seed borne diseases	Wash seeds before planting, or buy new seeds
Soil borne diseases	Change crop type next planting season
Disease in the field	Spray chemicals and rescue, get new seed for the next season if damage is serious
Damage by storage pests	Buy or access new seed for the season, use insect repellent herbs, treat seed with ash or chilli powder, etc.
Moulding	Access new seed for the season, check moisture content of seeds, dry properly before putting in storage containers
Poor viability	Check germination by doing sample tests and then get new seed ifviability is below acceptable level
Poor management	Improve field management and seed handling practices

Source: Bayush Tsegaye

Despite these practices, farmer seed is condemned as poor yielding, and is considered of poor quality, and farmer practices are criticised as backward. Farmers are not acknowledged as researchers even though they are born experimenters. There is no support to farmers who grow their own seed.

The time-tested traditional knowledge of farmers should be recognised, given value and made use of. Training with relevant stakeholders can be provided on seed quality maintenance. Farmer practices that nurture diversity should be capitalised on, to sustain food production and cope with emerging challenges. Farmer based seed production and crop improvement, seed banks and technical support, and credit services are all needed. Extension services should include farmer seed in their activities, and farmers who keep diversity and maintain good quality seed should be encouraged and rewarded.

Both farmer seeds and formally released seeds are important. These are complementary as each has its own comparative advantages. Seed quality is important across both of these sectors. Sustainable food production is not possible without quality seed.

Isidro Macaringue from **União Nacional de Camponeses (UNAC)** in **Mozambique** shared on the Mozambican experience. About 70% of seed is produced by farmers. Despite this, in terms of policies, seed regulation is only for the formal sector, which considers criteria of DUS/VCU and does not consider local farmer seed. When UNAC talks about farmer seed they mean local varieties, not seed through the formal sector.

In the Mozambican context, there has been recent pressure on the seed laws, with privatisation in the seed sector, specifically the harmonisation of seed laws and regulations in SADC. GMOs have also been introduced through the [Gates funded] Water Efficient Maize for Africa (WEMA) project. WEMA and the government are currently in an advocacy stage, for public awareness to favour the entry and commercialisation of GM maize. The Food and Agriculture Organisation (FAO) did a study in 2019 on GM commercialisation. It showed that hybrids are leading to loss of traditional seed because of their short cycle. There are positive signals in some public policies, e.g. food security policies and strategies, and security of seed varieties and seed banks. Although legislation doesn't mention the farmer system, it exists.

On quality control, UNAC recognises that farmer seeds are of good quality but there are some challenges. More work is needed to improve on quality, especially with regard to climate change and viability, on the part of farmers, to secure food safety and sovereignty. On criteria, it is a question of having flexibility to include grassroots farmers.

What type of criteria do farmers want for their seed systems, over and above the criteria established in the formal sector? There is reuse of seed, bringing back traditional and local varieties. This needs to be improved.

Farmers have had varieties e.g. corn, that are traditional, with shorter cycles and other cultural characteristics. Farmers prefer a shorter stem so the plant is more **wind resistant**, and sometimes they are also more **drought tolerant**. Mozambique has short rainy seasons so farmers prefer traditional cultivars that can be produced during those seasons, hence **short cycle**. **The improvement of seed has to be done through research, financed through the state.**

How can farmers be supported with investment and selection in the field? Some of the quality control issues that are most important, as a farmers' organisation, are:
- making processes more participatory,
- the revival and use of seed from before, and
- improvement of factors in seed and work being done in the field.

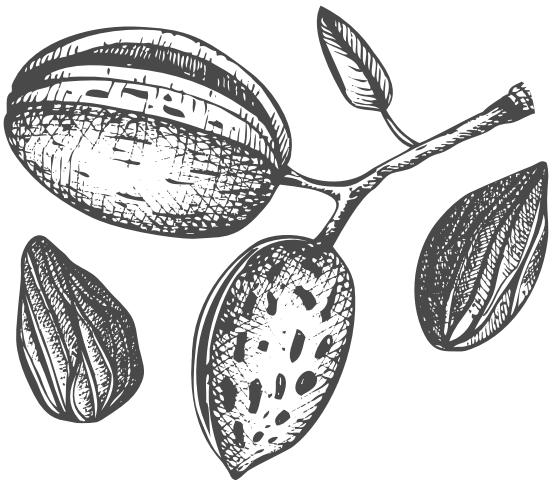
UNAC has been developing alternatives. They are working with farmers on multiplication of varieties that were lost in some areas and on the creation of local community seed banks in various parts of the country. They have learned from experiences in other countries e.g. Brazil on the management of seed banks. They still need to learn more about **management of seed banks, farm education on organic production, seed exchange, and seed lobbies for exchange**. There is an opening for local/national research and inputs especially by the Ministry of Agriculture. They have felt the pressure on the use of hybrid seed and industrial agriculture. We need to strengthen awareness and lobbying to promote smallholder farmer production.

Regulatory revision needs to be incorporated in our work. The farmer system is administered by farmers and considers their needs. They have done advocacy on policies for implementation on ITPGRFA, which Mozambique ratified but has never done any practical work to advance, or to provide access to seeds farmers use. They have specific programmes to support farmers for access and improvement of native seeds, with production in the field. They also work on policy. Currently only the formal sector is being mentioned in policy. The idea is not to regulate the farmer system in the same way as the formal system but to bring mechanisms to facilitate commercial seed and crop production.

Louise Sperling, from **SeedSystem.org** and a consultant to the **International Centre for Tropical Agriculture (CIAT)**, provided a commentary from the presentations on quality challenges and responses in farmer seed systems. Louise highlighted four gaps.

Permaculture Design Institute, Msim Farm, Zanzibar

"A huge failure of the formal system is that there really is only one standard, which is certified ...We [should] start to think about multiple standards according to need, always with cost in mind." **Louise Sperling, SeedSystem, consultant to CIAT**



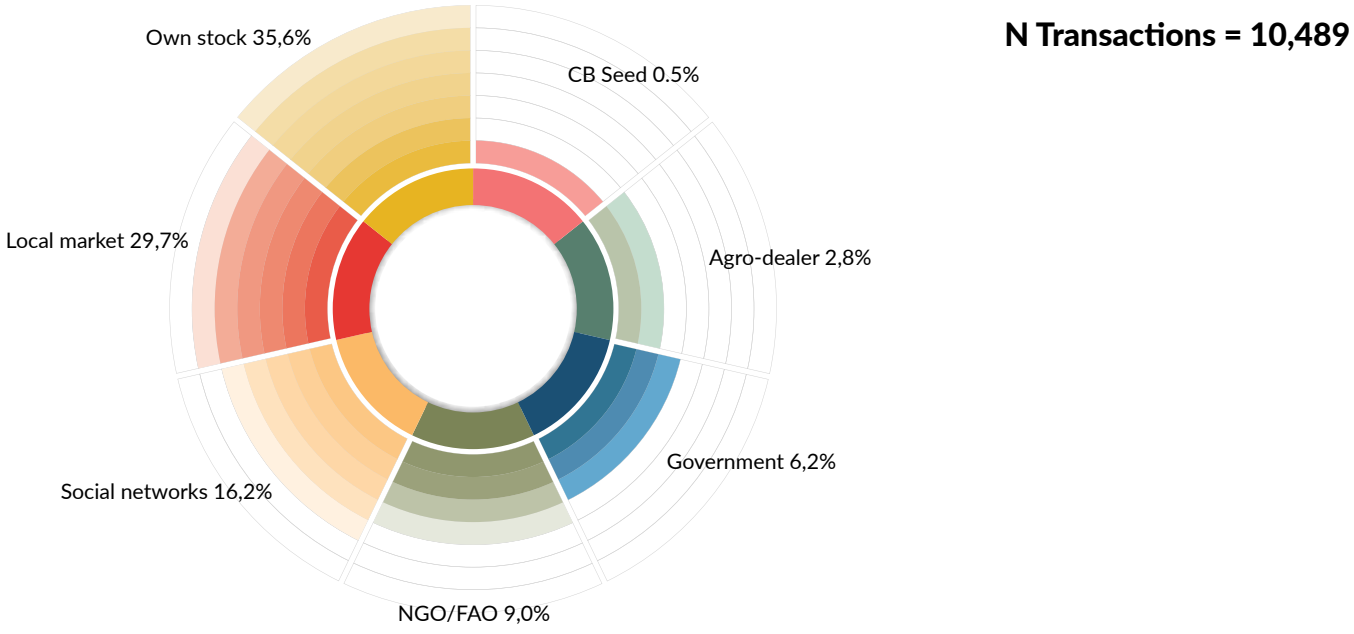
Where farmers get their seeds

The main nodes are farmers' own stocks, and then exchange and local markets. In the formal system, seed comes from the commercial sector, government and relief programmes. There are a lot of intermediary models that are not well characterised. Some are linked to the formal system, e.g. the local seed business model of Integrated Seed System Development (ISSD). There is some movement of heterogenous varieties for exchange that can be linked variously to the formal and farmer systems. Where do smallholders actually get their seed?

Louise showed real data produced by a group of 50 different organisations. This is the largest dataset in the world on where farmer seed comes from. It is regularly updated and this is the newest data, based on 15,744 transactions, of which 10,684 were in Africa (Figure 2).

Agro-dealers supply less than 3% of seed, which is same as five years ago, this share has not changed. As much as we complain about industrial agriculture, they have not been making much headway in the past five years. Community-based production is the source of less than 1% of seed used by farmers. This could have a lot more impact. Farmers' own stock is more than a third and local markets are almost a third. For the poorest in most countries, local markets are particularly important. These two main nodes in the informal system are particularly important for farmer seed security. Social networks are most important for vegetatively propagated crops.

Figure 2: Seed sources of all crops - Africa



Source: Louise Sperling. The data is in the public domain (www.seedsystem.org)

In terms of quality control and quality assurance, up to now we've mainly been talking about farmers' own stocks or producing for farmer organisations. Minimally, we should look at **quality guidance for local markets, and network analysis on social networks for vegetatively propagated crops.**

Many still have the basic framework on quality control: genetic, physiological, analytical and phytosanitary

But under genetic quality, in farmer systems this is much more variable. The challenge is how to create a framework for thinking that is much more adequate for farmer seed systems and that does not replicate what is inadequate. We can't say it is too heterogeneous or too variable. Can we develop a framework that doesn't box us in? We need to expand beyond the existing framework.

Standards or good quality

A huge failure of the formal system is that there really is only one standard, which is certified. QDS is minimal. That one standard is so costly that even if farmers want it, they may not buy it. On farmer seed quality, we can start to think about **multiple standards according to need, always with cost in mind**. We haven't talked about the costs of various management measures so far. This makes a difference. For farmer seed quality assurance, control and information, we need ways of getting feedback from millions of farmers, in order to identify good and bad producers, traders etc.

Guidelines for technical quality solutions:

- Work through multiple channels, beyond farmers' own stocks
- Widen quality parameters, because the formal parameters are very limited
- Offer options for standards (with cost in mind)
- Active feedback function is essential

Shaban Ameri Hajj's organic farm in Bungi

Points arising from discussion were:

- Farmers also produce seed for different users. Standards and control might change according to the user.

- Bayush indicated that some efforts are being done in Ethiopia to promote organic agriculture. These are good developments. Farmers sell organic produce in Addis. It is gaining recognition. Information sharing, creating linkages, and the promotional aspect needs to be developed. Farmers have opened up restaurants in town serving traditional organic food. This is giving value to traditional varieties and cultural issues.

- Riccardo from Rete Semi Rurali in Italy said, in response to the Sperling and McGuire research, that if you show corporations this picture on seed sourcing in Africa, they will say there is still 98% room for the commercial sector to expand into the farmer seed systems. They will say you need a policy to make space for the commercial sector within that. We need an approach to say the quality of farmer seed is good.
  For us it is clear, but for them they only see a market for commercial activity. How do we change the minds of policy makers? Louise agreed that this is something that happens, e.g. Corteva looked at the data and said they need to capture that local untapped market. The data is more nuanced by crops. We must know the data, and then we can make decisions based on that.

- Andrew said, and numerous others agreed, that farmers use all these sources and ultimately need quality in all these sources. If we just improve quality of our own stocks and local markets, this benefits two thirds of seeds across crops. Complementarity becomes clear. It is not only one source that is important, but several.

- Severina from Brazil said there was a question on how people are seeing GMO contamination, and how to bar it. In Brazil farmers are banning GM contamination, especially in maize. Through the seed banks they are able to preserve their traditional seed. They have 16 municipalities that are part of a union for the preservation of seeds and environment. No one can say the maize is from a farmer if it is not tested.
  They do have tests to see if the seed is contaminated. If it is contaminated, it is destroyed. They don't even give it to fairs or markets for risk of contamination. There was a case of a farmer, who had a seed bank for almost 30 years, whose maize seeds were contaminated. It was a government project that distributed a Monsanto GM variety. The law prohibits it, but it was not labelled. So now they have to run tests. They managed to save that variety, but other farmers also have this concern. It is not only maize. We must pay attention to this.

- Isidro indicated that in Mozambique, no one currently cultivates GM commercially. Currently it is only in confined trials. There was a debate on how to prevent contamination. In the Mozambican case, no one is officially allowed to cultivate GM maize at this time. Maize is easy to contaminate, but currently it is not a reality.

- There was a question about what kind of farmer-based responses there are to seed-borne diseases that may not be visible to the naked eye. Bayush responded that if the disease is in the field, you have to consult the agricultural officers, they will give answers. It is more technical. If the seed doesn't grow, rather grow something else. It should be handled on a case by case basis.

Means to support quality controls in farmer seed systems

Onismus Chipfunde of the **Zimbabwe National Genebank** spoke on the role of gene banks in repatriation and restoration of farmer seed systems. The gene banks have collected crop genetic diversity from farmers, including farmer varieties and some old varieties. They do molecular morphology and collections have passport data including the location, traditional knowledge, and the ecological information concerning the adaptability of the materials from where they have been collected. They have ex situ collections. This is basic information on the gene banks. What has been done with these collections? They have made efforts to restore materials farmers have lost. Before restoration, they find out what the needs of farmers are, which materials they have lost, and which materials they need. This is crucial in restoration, notably in conditions of natural disasters – especially droughts and floods. There are basic processes in the Zimbabwean context. They have tools to assess farmer needs and identify areas where materials have been lost, including surveys, interviews and diversity wheels. They also receive requests from farmers, and observe and interact with farmers at seed fairs. With the diversity wheel, farmers carry out analysis and identify materials that many farmers are growing; that few farmers are growing, on large or small spaces; and those seeds said to be lost. During the process of repatriation we get consent to move the seed from gene bank cold storage to the outside environment.

Source: Onismus Chipfunde

There are challenges. First is the quantity of materials. There is need for bulking up to reach a wider group of farmers and this takes time. Second, poor seed germination happens at a time that it can impact negatively on yields harvested. This then needs seed testing and a regeneration cycle. Another issue is that farmers may have lost their local varieties. In the process, you find that farmers raise the issue that some materials have longer maturity and no longer fit the changed conditions.

There is need for enhancement and PPB. Other interventions are also needed to strengthen farmer seed systems. FFS have proven to strengthen processes of restoration and repatriation. Farmers are organised into groups, and engaged in lessons/training related to production. These are mostly organised by community based organisations or NGOs such as CTDT. In conclusion, gene banks are vital to support farmer seed systems. We need to strengthen relationships between the gene bank, researchers and others, and strengthen capacity to maintain germplasm in the gene banks.

Niranjan Pudasiani from **Local Initiatives for Biodiversity, Research and Development (LI-BIRD)** in **Nepal** presented on their experiences on participatory approaches and community seed banks.

Nepal has wide climatic, geological and socio-cultural diversity and is rich in agro-biodiversity. It relies on traditional farming, with 85% of seed from the farmer sector. Investment from the public sector only goes to the formal system. There are more than 2,600 local rice landraces. The majority of the population are farmers, mostly smallholders. The context is similar to Africa. Nepal is losing local agricultural biodiversity, based on ignorance, less support, migration and modernisation.

Source: Onismus Chipfunde

LI-BIRD has more than two decades of experience in Nepal. It works in 32 districts with about 100,000 households They work in four pillars, and the activities Niranjan discussed are part of the biodiversity and ecosystem services pillar. They use participatory approaches to work on registers, four cell analysis, biodiversity/seed fairs, participatory seed exchange, grassroots breeding, PPB, PVS, and informal research development, access, understanding and documentation of diversity, encouraging the exchange of genetic resources, and participatory crop improvement (PCI).

PCI has five stages:
i) Create new genetic variability;
ii) Participatory selection in segregating populations;
iii) Select farmer-preferred trait-specific variety;
iv) PVS and seed multiplication; and
v) Variety registration and release.

Grassroots breeding is enhancement through simple participatory processes between farmers and breeders, with farmers playing the main role. LI-BIRD have worked on cold tolerant rice with genetics from the international system. This was mainstreamed by the farmer system in Nepal.

For local landraces you can go directly to registration based on a simple form of characterisation. The government is more relaxed. On PPB, farmers had identified good varieties but with some problems. LI-BIRD did PPB to improve the seed, which is being maintained by farmers in community-based institutions. Rice, amaranth and other landraces are to be registered.

"Policy makers are hard to convince in a scientific way. They need to see, we need to organise them, they do not read scientific papers. So we use farmer field visits and seed bank visits to show that local seed can really contribute to farmer livelihoods. Then they can revise the seed policy."

Niranjan Pudasiani, Local Initiatives for Biodiversity, Research and Development (LI-BIRD), Nepal

Source: Niranjan Pudasaini

The first CSB was established in 1994 in Nepal and there are now about 144 CSBs nationally. Since 2003 LI-BIRD has facilitated the establishment of 23 seed banks in 17 districts around the country, managed by farmer associations. LI-BIRD is working to institutionalise the development process, linking formal and farmer systems to strengthen the overall system. CSB is a sustainable model for farmer seed.

CSB establishment process

Initial stage: They discuss with the community and do sensitisation, training and exposure, good practice, and diversity collection and multiplication. Middle stage: They secure institutional, physical and financial resources, and do capacity building on technical and market dimensions.

They develop a self-sustaining system, and generate revenue on selling seed and organic products. The funds are used to manage the seed bank. They work with others to widen linkages. Key stakeholders for CSBs include local government, community institutions, farming communities, extension, research, the gene bank, and private enterprises. This strengthens farmer seed systems and contributes to sustainable access to quality seed. They have seen growth in volume of production of both local and improved varieties. CSBs have conserved about 1,260 accessions of 81 local crops in Nepal.

Lessons learnt

PCI is effective in conserving and utilising available resources. Grassroots breeding is effective in bringing local varieties to others. Integrating PCI with CSBs maximises benefits and can contribute significantly to the conservation and use of plant genetic resources (PGR) for food and agriculture.

There are links between formal and informal systems, and we need multi-stakeholder partnerships at multiple levels to mainstream participatory approaches.

Noufou Koussoube from **Fédération Nationale des Groupements de Naam (FNGN)**, a member of Comité Ouest Africain de Semences Paysannes (COASP) in **Burkina Faso**, shared experiences on community seed banks. FNGN is one of the oldest farmer organisations, created in 1967. It covers most of Burkina Faso, with 5,482 groups and more than 600,000 members.

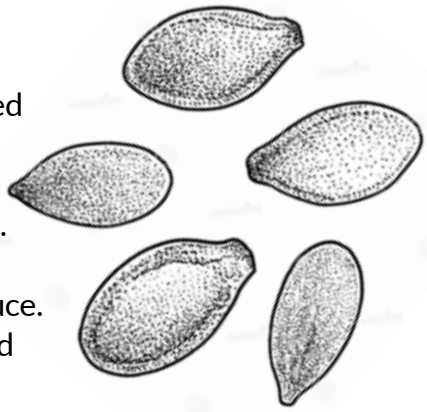
The objective is to maintain farmer seed, and to create a society that is neither traditional nor modern. FNGN's philosophy is to develop without causing damage. They use what the farmer has, and blend the traditional and the modern. They want to make every individual responsible.

Their method is to start from the farmer – who they are, what they live, what they know and what they want. Continuous training is needed.

On community seed banks, Noufou doesn't want to call them banks because this leads us to the formal sector. FNGN prefers to say *"baore"*, which means attic since this is where their ancestors stored their seed.

They started with reflection on this theme after the introduction of certified seed by the state. This subverted the producers. Then they created a reflection framework. Producers got together and started to record all the varieties of different species (e.g. *torodo, naata, balbou, belco, bangwo-kenda*), counting about 30 varieties of farmer seeds. Because the rainy periods are shorter, the crops are smaller.

The varieties were recorded and categorised. Classification was based on the number of times the variety bloomed before making seeds, and flour abundance. Some seeds were more vigorous than those from the state. They identified four that are more vigorous, and explained to farmers that these are the seeds their ancestors had. If these are allowed to disappear, farmers will always have to pay, which will create a problem because they have no means to pay.



Once they had identified the seeds, they faced the question on how to multiply these seeds. They gave seed to five initial farmers to produce. The seed was multiplied by 10 and in four years there was enough seed for everyone to plant. This is how the seed "boare" started. For FNGN the history of farmer seed is the story of life. The association started with this. They have realised for 50 years already that they must protect their seed. Now when people start talking about farmer seeds again, they have found it strange because it has always been in their mode of thinking.

Godwin Mkamanga from **Biodiversity Conservation Initiative (BCI) in Malawi** provided a commentary. Godwin said we should place emphasis on the traditional crops that are forgotten. We tend to talk about maize, groundnuts and beans, which come from elsewhere. We talk less about sorghum, millet, cowpea or sesame, which are indigenous. Godwin is working with CTDT in Malawi on some of these crops.

Some people do not even know about these crops. They have also adopted some of the methods Niranjan presented. One way to support seed quality in CSBs is through PVS/PPB. PPB takes longer than PVS and there is the aspect of registration. In Malawi they do variety trials, comparing farmer varieties with commercial varieties to see how they perform with low fertiliser levels. The performance is not very different. On seed production, it is easy to produce inbreeders but maize needs isolation distances of a minimum of 100 m. This is almost impossible in Malawi where there are many small gardens. Rogueing is important, where you remove those that are obviously off types. Science meets indigenous knowledge.

They work closely with farmers, injecting science and bringing indigenous knowledge. With the coming of GM – good, safe isolation

distances are needed. Maize pollen can carry up to 8 km, though normally they isolate closely. There is the issue of whether to name and register. We should name. It is easy. It comes from farmers. Registering is just a matter of sitting down. More than 80% of seed in Malawi is farm saved seed. So why not name and register it? There is little discussion so far on vegetables. Most people in Malawi do not eat meat. We should also look at vegetables and fruit.

Permaculture Design Institute, Msim Farm

Discussion raised the following points:

- Mariam said we must flag the issue of registration of farmers' varieties in SADC harmonisation. There are some groups to engage with. Farmers have strong opinions. There are issues about varieties and about registration.

- Sabrina from the ACB said there is minimal support to gene banks in terms of finance, infrastructure, and political will to preserve germplasm. This is a huge challenge when it comes to farmer seed systems and promoting farmer seed. What is the current situation? The gene bank representatives responded. In Zimbabwe, funding is very limited and they have relied mostly on donor funding. This results in moving from one project to another. They have also tried to influence policy through the recent draft national agricultural policy, which is just about to be finalised. They have lobbied for conservation and use of plant genetic resources, and farmer seed systems. The national strategy is to lobby for more resources. In Zambia, the gene bank is in the Department of Agriculture.
  There is no special funding to the gene bank. It is mainly bits of funding from government and support from specific projects. In Malawi, politically the gene bank still gets support from government to conserve and maintain materials, to some extent. But the problem is how to support the local seed system. The bottom line is that they may not have good legal frameworks to go into that area. It is difficult for the national gene bank to go into on-farm work. This makes it more complicated to dive into that. Much as we say things, **there is still something big we have to do to adapt the policy framework to work in a defined legal area**. At the regional level, under the SADC system farmer varieties are recognised, but the problem is that there are no systems from farmers themselves to recognise those varieties. The harmonised seed regulatory system is under implementation. Currently there are no systems to allow movement between countries. Not much is being done and there is need for clear guidance. **Even at farmer level, why not come up with mechanisms for dealing with quality?**

- Mariam from the ACB said we may be talking past each other, because we don't want to be locked into the variety narrative. The ACB has done work and told SADC they must not just impose registration of farmers' varieties on farmers in the SADC region.

- Guy asked: do we have to guarantee products, or rather to certify the way in which they are produced? When they did it in France, they did not define the product but the means to produce. They did an inventory of the ways in which farmers do things so they don't have diseases. For the same result there can be other ways. The second issue is how to certify, to guarantee. Is it the state or farmers? Through the International Federation of Organic Agricultural Movements (IFOAM), there is now a programme that must be paid for that is not at the level of farmers. It is often organic and too expensive. Farmers must gather and visit farms to verify. This must be defined by farmers not governments. An example from Vienna is that in order to ensure no insects, they use neem leaves. The results are verified. But neem is not authorised in France because there is no patent on the plant. So they have to use poisonous chemicals. The last issue is on GMO contamination. If there are no laws on GM, we cannot protect ourselves from contamination. Maize can travel hundreds of kilometres, especially when there is a lot of wind. In France, there has been contamination of soya. The laws meant farmers had to destroy their fields. This was funded by Bayer, which provided indemnity to these farmers. Laws are needed to regulate GMOs. They have to be banned, actually. In Europe it is forbidden, but we have Bayer seed that is contaminated.

- Mariam said that countries don't have biosafety frameworks. Those that do, have permissive legal frameworks and don't recognise contamination as constituting damage, unless there are lost markets; that is, only where there is socio-economic loss.
  The Zambian and Tanzanian laws are good in this regard though. They talk about contamination of traditional varieties and liability and redress in these circumstances. But they are being revised under pressure from industry. On screening of pests and diseases, we need to have a discussion on access by farmers to appropriate technologies that are open source, to allow farmers to screen for pathogens that are not detectable with the naked eye. This is an intersection between extension, appropriate open source technology and farmer systems.

- Sebastião from Brazil asked: when we speak about seed, are we talking about protecting commercial seed that generates profit, or domestic seed? It is possible to identify 100-150 species of edible plants, that are medicinal, that feed small animals. Are the laws applicable to the small farmers or only those with commercial value?

- There were some questions to Niranjan. They have farmer varieties in Nepal. What are the experiences in terms of access and benefit sharing (ABS) in those communities who own those varieties? Are they also going commercial or only for local consumption? Another question was that if you take local varieties and cross them with others and then select, the final product will be different from the variety you started with. So what do they call the final one? Is it a landrace?
  Who will own the final product? Niranjan responded that Nepal is about to pass a law on intellectual property (IP) for farmer varieties and is currently piloting on ABS. The responsibility for maintenance is on farmers. If a commercial producer wants to use the variety, they need to approach the community organisation and local populations for prior informed consent. They sign a formal agreement for a varietal test if the local landrace performs. They are ready to pay to the community. There are cases of support in kind from government e.g. on labelling. They are piloting 0.2% of profits on local beans.

- Evelyn from Zimbabwe Seed Services Institute said that with regard to isolation, in Zimbabwe there are experiences of farmers producing their own seed but OPVs. In terms of isolation for smallholder farmers, they grow the seed in clusters, with a group of farmers on their small plots. Another way is growing maize seed in irrigation schemes, with one block to produce OPV maize in winter when other farmers are not producing.

- Donald from Mtandao wa Vikundi vya Wakulima Tanzania (MVIWATA) in Tanzania noted that soil has not been dealt with much so far. In northern Tanzania, people are farming using chemicals to support their crops. The land has become unproductive. A session is needed to discuss on soil and how farmer seed systems can become a solution for those soils.

- Hamid from Zanzibar said they are currently importing all their seed, and they are also importing pests and diseases with those. They will need to develop their own seed.

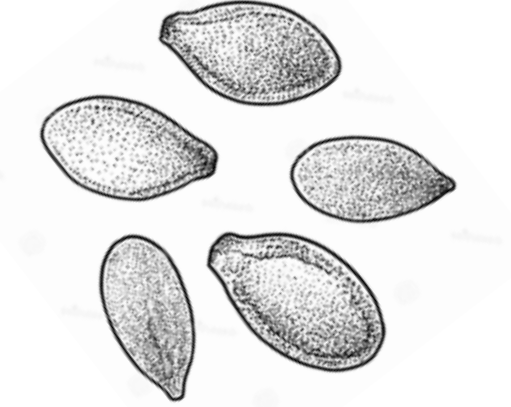
Stonetown, Zanzibar

Day 2: Field trip

On day two participants visited Shaban Ameri Hajj's organic farm in Bungi, where seedlings are produced in greenhouse facilities. The second visit was to the Practical Permaculture Institute at Msim Farm. Participants had the opportunity to enjoy locally prepared Zanzibari food at Msonge Organic family farm.

Shaban Ameri Hajj's organic farm in Bungi, Zanzibar

Permaculture Design Institute, Msim Farm, Zanzibar



Day 3:

The third day started with a check in and reflections, led by Riccardo Bocci from Rete Semi Rurali. Participants reflected on the field visits, and discussion focused on the need for rules and laws to govern farmer seed systems, as well as advocacy strategies.

The following points of discussion were raised on the field visits:

- Guy said that we had seen a farmer buying seeds with many germination problems. He had to set up a system to sterilise the soil so the seed can germinate. Usually seeds don't germinate in sterilised soils but in those that are adapted. Why did he have to set up this neutralisation system? Because the seeds were selected from outside Zanzibar. They have never known Zanzibari microorganisms. Selection is not based on resistance to the microbes in his soils, so the farmer adapted. But this is not a definitive solution. The second issue is on the law. It is almost certain that the seeds were bought here from Europe, where they had been refused, and sent from all the seed companies to Africa. They change the label and sell. This is allowed by international laws today. The seed companies in Europe told me they did that. This scandalous mafia traffic needs to be stopped, and there has to be access to seed that can germinate properly. Then we can imagine solutions on how to organise ourselves and change the laws. It is said that organic seeds are better adapted to pathogens, without chemicals or soil sterilisation. But are organic seeds from Europe adapted to the African climate? I don't think so. European seeds must be adapted to the soils. There are farmers here in many African countries – Burkina Faso, Togo, Malawi and others – with climates that are close to Zanzibar. Isn't it better to organise exchanges with the farmers here to allow them to become autonomous as soon as possible? European seeds are hybrids and the farmers will not be able to select. This is a concrete example to move on.

- Severina reflected that in the first visit, the farmer was very organised with the seeds nicely planted. He could produce his own seed. But why aren't the seeds being adapted to the local conditions? If the local seed is produced agroecologically e.g. tomato or green pepper, it can be produced year round. There was also lack of participation of women. He did not really answer the question posed to him on this. Women and men must work hand in hand, they need to be in fields together. The system where he sterilises his soil was a good adaptation by the farmer. But how will the seeds recognise Mother Earth? They need to live with the lizards, the worms and animals. How will it turn out? He was also producing pesticides similar to the Brazilian one. In the second visit, the woman at the permaculture centre said she had spent time in Brazil and shared experiences. They are doing good agroecological farming. It is natural, they created cultivation in one section and pesticides in another. But they have monocultures that produce various diseases. If production is diversified, pests won't attack as much.

- Noufou from FNGN noted that at the first farm, there was a general problem about the soil. The farmer was obliged to treat it through the steaming system. This was not a big scale production like we have at home in Burkina Faso, so Noufou was a bit lost. At home they are talking about farmers planting large areas. On the second visit, Noufou did not see real production for consumption. There was some adaptation to climate, and it is true that zones are different.

- Austin from Kasisi Agricultural Training Centre (KATC) in Zambia said that with the first farmer, he noticed that pests and diseases were developing on the plants. The farmer needed more diversity in pest and disease control. Maybe more marigold, onion and other plants that repel and attract beneficial insects in his field. In terms of fertilising, the first fruit was tiny and was forced to drop before the next flowering. Maybe he could do more in terms of compost, manure and leaf extracts. He is doing it with Gliricidia but needs to do more as extension visits him to add more organic matter there. In the second visit, there was lots of diversity. Permaculture is like that. It would have been nice to see some boxes they take to market and transfer that to farmers in our communities.

- Greybill from Zambia said the only problem is that he couldn't see the farmer seed system in terms of the farms. Where are they accessing seed? He didn't see the link, because the seed comes from outside.

Reflecting on the discussion on the first day, the question was asked: do we need rules for farmers' systems?

- Riccardo said it is not clear yet whether we need rules or nothing. There are rules in Europe for example. We need to open the legal space. We can look at commercial and non-commercial, and how to make registration and certification easier, and look at participatory and decentralised breeding.

- Thandi from the SADC PGR Centre (SPGRC) in Zambia said **"rules" is a strong word. We need guidelines or procedures with flexibility**. If we say rules, we are following existing policies that do not cover farmer seed.

- Isidro said that if we have rules or registration, it means operating on the basis of the formal seed system. These issues are making boundaries for farmers. We should rather lobby for the free operation of farmer seed systems. Farmers should be free to use, trade, and exchange their seed.

- Riccardo said it is not a matter of trying to open something. We need rules for seed companies, to guarantee quality, and then different rules for different systems. Different ways rather than just a free for all. There are different seed systems including commercial, local markets, social networks, and farmer saved seed. There are different ways to manage seed. Then **we need different procedures, guidelines, and rules to ensure quality for different systems.**

- Louise said that our organic colleagues have emphasised that the process to open the legal space may be more important than the product. We may need to focus on both. **We need a process but also to characterise the product, both are leverage points.** The second issue is that we are speaking a lot about sovereignty. Some are also really interested in poverty alleviation. Are those goals shared by all of us? How do we connect sovereignty to serving the poor and poverty alleviation?

- Mariam said she agreed to some extent that farmers should be free always to reuse, sell and exchange. But the problem is the gross inequality about who can participate in the seed sector. The laws, institutional framework and public funds are only going to one seed system. On the other hand, in Africa there is a predominance of farmer seed systems in providing most food. But these systems are criminalised to the extent that the seed cannot enter the market. There is no recognition in laws of the contribution farmers make to poverty alleviation.

  The assumption is that no contributions are made to poverty alleviation, climate change, nutrition security etc. We want to move away from the criminalisation and inequality, and recognition of only one system. Recognition is like a funding mandate. So if there is no recognition, we will not be able to do any work, we will always be on the margins. How do we shift this system in the context of diversity in the field, biodiversity loss and climate change? I am not saying rules. It needs a more nuanced and deeper discussion. Maybe for the organised organic sector it can be different.

- Guy said there are rules and laws written by government and voted for by parliaments. We have to change these laws. This is the first debate. Then within the farmer seed system, there are systems that are unorganised and informal, where farmers do what they want. Then there are also organised systems by farmer groups, supported by NGOs. The individual, unorganised system presents many dangers.

  Guy knows students from West Africa, where universities have money to take local seed to the US so the universities can patent and create GM varieties out of those on the free market, even if it is the local market. For example, in the south of Brazil, seed companies wanted to distribute seed to the free market that is supposedly informal. Linked to this, there are farmer associations with functioning rules to protect the farmer seed system. Freedom is important, but not when it is going to encroach on the freedom of others, e.g. when GM is inserted in seed, then freedom stops.

- Riccardo said we don't have to have a lot of discussion on rules and practice. **We must put guidelines in place and practice simultaneously without waiting for good laws, recognition etc.** We had a conference in Europe on agroecology last year. We spent one day discussing and then there was a professor from the US who said: do it, stop talking, just start. Don't worry about rules etc. and then you will see.

"Our rule framework can be different from one country to another. There can be general baselines on which we agree, what must be recognised in laws by government." **Guy Kastler, Confédération Paysanne/LVC, France**

Another area of discussion was on advocacy strategies and ways of approaching and working with governments.

"People say as farmers we are not organised and then our word does not count. Who will listen to 1,000 farmers individually? We need to be organised to lobby, to advocate so there are laws to protect us. What is important is our own organisation." ***Jacques Nametougli, L'Action Réelle sur l'Environnement, l'enfance et la Jeunesse (AREJ), Togo***

- Jacques from Togo said that if farmers are not organised, each person will say their own thing and it is difficult for law makers. Lobbying is difficult. Decision makers are our own children and they also need to defend us. But how will they if they do not understand our own systems? Even if they are the son or daughter of a farmer, they do not understand. If we want to recognise seed, we need to focus on lobbying rather than certification.

- Riccardo added that many regulators don't know about farmer seed. It is not only a question of being paid.

- Godwin said their main interest in Malawi is recognition of farmer seed and local seed production. As of now, with regulations coming from SADC and elsewhere, you find that the regulations are mostly for maize, soya, and tobacco but the rest of the diversity is produced by farmers. Godwin and others are supporting farmers to produce good seed. How do we make our own governments recognise the diversity of seed farmers are producing? Godwin thought first the Treaty was the entry point. African countries are signatories but they are not internalising the international law. Talking about regulations or principles, he would support that. But lobbying still has to go on. Even the Ministry of Agriculture is looking for local seed, but in government papers, it is not recognised.

- Niranjan from Nepal said they have gathered on how to benefit farmers. It should not be informal versus formal. We need both systems to benefit farmers. This is how they started to work in Nepal. **Policy makers are hard to convince in a scientific way. They need to see, we need to organise them, they do not read scientific papers. So we use farmer field visits and seed bank visits to show that local seed can really contribute to farmer livelihoods. Then they can revise the seed policy.** That is how we started. We need separate laws for farmer varieties and commercial varieties. Without laws, we cannot rely on farmers. Their seed may not perform, and there is no legal guarantee if the crop fails. Farmer seed can travel a long way. This can cause crop failures. We need rules but they must be separate. We have guidelines for farmer variety registration.

- Riccardo said they had the same experiences in Italy. They invited policy makers to the field on visits. They trained them through workshops and papers. When they started PPB it was considered only useful for farmers from developing countries but not for Europe. This was the position of government and scientists. They did advocacy by bringing them in to see.

- Severina said that government will never bend for farmers. In Brazil the farmer system is an agroecological system where they utilise the soil, respect the earth and its cycles. **Farmers have to unite and fight, and go to the streets in large groups. If we don't pressure government, they will never listen.** We fight the Brazilian government. We send letters, have marches, and at moments like this we create ideas of what other countries have done. We are able to get there. It is not perfect but it can achieve something. They need to know the social movement is united and capable of having impact. We are a fighting nation. Our origins are from Africa. We are a liberated nation, and we carry that spirit with us. Farmers know how to protect their own seed. If it is GM,

we will never send it to other farmers because we work in solidarity. Otherwise we will be a country only for GMOs.

- Bayush said that the farmer seed system needs to be treated separately because we need access to diversity. Much diversity is destroyed when a few varieties are promoted through government support. Sometimes they work for a few years but are then susceptible to pests and diseases, and then farmers are in a difficult condition. This was the case in Ethiopia on wheat varieties. Only farmer varieties of durum wheat survived. Even the straw is not good for animals. Government then gave it attention. The research centre was not ready but we used farmer-to-farmer exchange and CSBs. This shows the importance of heterogenous materials. The farmer seed system needs access to diversity for choice, and there are emerging challenges like climate change and disease etc. When we started working on farmer varieties there was a lot of criticism. They said we are taking agriculture back. But they are not looking at the importance of diversity. They have high yielding varieties but this is not in reality. We bring government people into the field, where they can discuss with farmers directly. Farmers challenge them on yields, and tell them what is really happening. Some got convinced. This is making visible the value of having farmer varieties. But the process takes a long time. No one is convinced in one day or one season. We must keep lobbying and negotiating.

- Riccardo said that this case shows farmer seed systems are more able to cope with risk. They offer solutions before the formal system, which may take five to 20 years to develop a new variety.

- MVIWATA said they normally have a policy dialogue, bringing farmers with local seed together with decision makers. Farmers can dialogue with people actually involved in making the laws through a farmer show or exhibition.

- Andrew said that what we need is recognition of farmer seed systems. Recognition comes with responsibility. When farmers have recognition and responsibility, they also need to be given support technically and economically. We need a discussion to look at **what policy framework is necessary to recognise farmer seed systems, what technical and capacity building is required to make them more functional and resilient, and also what kind of economic contribution is being made.** Policy makers want to know the economic value of farmer seed systems. In many cases when they calculate seed, they don't consider farmer seed systems, only the formal system. When they are asking people how much seed in available, they only go to the seed houses to see what shortages there are. There is no recognition that farmers also have seed. Once there is recognition, they can also include farmer seed systems. We need to show how these are contributing economically and nutritionally. **Yield tends to be calculated at yield per ha rather than nutrient density per ha. We must change the narrative to nutrition density per ha.**

- Louise said that there is only a single public figure valuing formal vs farmer seed. It is fictitious but she shared to illustrate false figures that are in the public domain. This is from a refereed article in 2014, just to show how distorted public information is. It said the commercial sector was valued at US$ 45bn/year, with GM at US$ 15bn, and farmer systems all over the world were valued at just US$ 12bn/year. There are other issues such as climate adaptation, nutrition etc.

- Riccardo said that from their experience of advocacy in Europe on the new seed laws, his advice is that you **don't start with attacking**. Your first phrase should be that the system is very good, but … we need some small space for diversity. Then you can have in mind a world that can open up more. That is the approach they had.

Markets

Markets for diverse crops and seeds

"We need to think in the context of pluralistic markets, not just one market." **Andrew Mushita, CTDT, Zimbabwe**

Andrew Mushita from **CTDT Zimbabwe** presented on the African experience of markets for diverse crops and seed. Andrew started by showing that there are 500 million smallholder farming families in the world. In sub-Saharan Africa and Asia, these farmers produce 70%-80% of the food consumed. Globally, there is very low agricultural biodiversity, with 75% of the world's food generated from 12 plants and five animal species. Most of the genetic diversity was lost in the past century. Crop diversity is one of the strongest weapons in the fight against hunger and poverty. **If we lose diversity, markets will also disappear.** Less than 3% of seeds used in sub-Saharan Africa come from the commercial sector; the vast majority is from farmer seed systems.

There are local and national markets for diverse crops. These include exchange between farmers, seed fairs, field days, dry shows and barter trade. When we think of markets, we need to think about different kinds of markets. There is no one market. If you look at commercial crops, they have markets, but seed is coming from the formal sector. But farmer crops also have markets. **We need to think in the context of pluralistic markets, not just one.** We need to think about different market niches. There is not a market but markets for people growing different crops. We saw from the farmer yesterday that he was using local markets with direct contact. He didn't have to go to bigger markets. We don't have to go to export markets.

Requirements for creating seed markets for farmer seed include an enabling and supportive policy environment, farmer capacity building for seed production, crop variety improvement, integrated seed production systems, and seed dissemination and distribution through local markets. The farmer we saw yesterday was depending on seed coming from outside. How can we strengthen seed production internally? Farmers could be promoted and become people to sell seed locally.

Market, Zanzibar

"To face the big companies we have to go faster. We must go straight on the ground to show we can produce seeds." **Jacques Nametougli, Togo**

Jacques Nametougli from **L'Action Réelle sur l'Environnement, l'enfance et la Jeunesse (AREJ) in Togo** discussed the work AREJ has been doing on supporting farmer seed systems. Jacques started by giving the background on Togo, a small country in West Africa with 7.6 million people, where agriculture is the main activity. It has a tropical climate with savannah and is hot. AREJ is a small association that helps rural youth and promotes ecology. Jacques started AREJ in 1999 in a town, on rented land. AREJ has a technical agroecological school for training of youth.

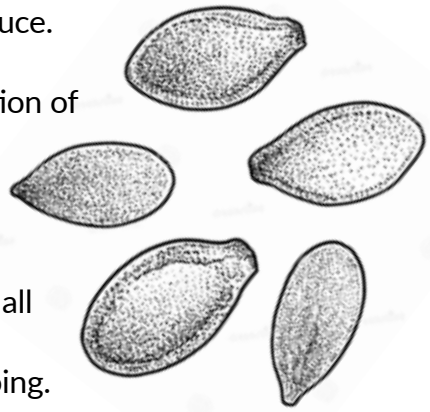
The future depends on educated youth. After participating with Biodiversity Exchange and Dissemination of Experiences (BEDE) in a caravan and two fairs, where the Association Sénégalaise de Producteurs de Semences Paysannes (ASPSP) and French networks were key actors, he returned and started to act. Jacques was training in agronomy but worked a lot with chemical products and even sold them. He recognised he was contributing to killing the land and soils, and had to make a transition. The first steps were to discover the old varieties. This was a quiet campaign for seven years, asking elders if they still had their old seed. Farmer seed allows us to produce adapted varieties.

Source: Jacques Nametougli

After he was convinced the message was received, they organised a fair in Togo and Benin in 2013. For 15 years he was operating in hiding to talk about farmer seed. There were 2,000 farmers at the fair. **When farmers get together, the laws lose their power.** Farmer seeds were presented and from 2018 to 2019 partners collaborated to train farmers to select, breed, and produce different crops. We can't only speak about theory. We need to accelerate to show we can do seeds. In 2016, AREJ increased speed in setting up diversity of farmer seeds. They did free distribution in the country through the media. In the savannah region north of Togo is an area of 200 square km.

They worked on stocking local seed in the village. They did a germination test before marketing, established farmer seed houses with local seed conservation next to the farmer's house. The priority was first to serve the village, then the region. We produced seeds, and invited the authorities to see the seeds we produced. One of the most important results is the social economy of the youth. Seventy five percent of youth are in the villages and work in fields. We need to transfer technologies to them. **To face the big companies we have to go faster. We must go straight to the ground to show we can produce seeds.** We need to train farmers to create sites of production of seeds to face up to big companies, and to transfer knowledge of seed production.

AREJ started 20 years ago. They are building a university for youth to be educated to get a certificate and to take the baton in the future. In November they met with the Minister of Agriculture and asked if they could present farmer seed from Togo that small farmers produce.



There is high consumption of this seed. He said the state cannot support them financially but gave them the freedom to support farmer seed all over the territory, and that is what they are doing.

Source: Jacques Nametougli

"Farmers can contribute to quality seed production, but with some quality controls … There is demand but farmers cannot meet the demand at scale." **Thandi Lupupa, SPGRC, Zambia**

Sebastião Estevão, **Severina Pereira, and Gabriel Fernandes** from **Brazil** shared their experiences on farmer mobilisation, seed banks and working with the past Brazilian government on bringing farmer seed into government food and input supply programmes.

Gabriel Fernandes from **Federal University of Rio de Janeiro (UFRJ)/National Agroecology Coalition (ANA)** presented some elements of the process they have lived through in Brazil over the last 15 years. This was an important political cycle that has now ended. During this time they were able to advance some elements of family farming and agroecology, as part of a larger popular mobilisation and participation. It was not a single process but a confluence of many approaches. Actions were geared towards agricultural biodiversity and understanding, and acceptance of, seed custodians and family farming. **Actions are not directed to the seed but to the people who have historically worked with and exchanged the seed, based on the free circulation of seed.** Seed fairs and festivals allow farmers access to diversity. Farmers maintain active social networks and the diversity of each organisation.

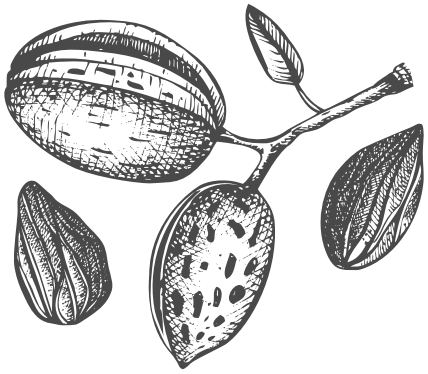
Source: Sebastião Estevão, Severina Pereira and Gabriel Fernandes

Source: Sebastião Estevão, Severina Pereira and Gabriel Fernandes

Public participation improves public policy, which is usually made by government in their offices with top down implementation. The experiences from family agriculture should feed into public policy and should be implemented together with social movements, not only by government. This will generate greater impact and better results. Policies for agroecology are intersectoral, they deal with social, gender, racial inequalities, and environmental safeguards. It is thus not an isolated policy.

Local seed is now legal. The 2003 seed law elaborated mainly on the commercial seed sector. There are over 50 articles in the law and just three of these articles guarantee that farmer seed systems are recognised by government. These are small openings in a law made for the formal sector, but it allows for informal seed markets to exist without being regulated.

This is for farmer seed and it is the result of work by social groups in the Congress. The second article is an exception, where native seed is exempt from any kind of registration. The third article prohibits native seed from being excluded from public policy e.g. it does not allow banks to prohibit credit for work around native seed.



Seed fairs were organised in the different regions. These allowed movements to centralise to fight for the free exchange of seed. At the fairs, farmers exchange seed and information on the seed. They created a network so local experiences were not isolated. The fairs are political moments, people go into the streets and present their demands.

Another important experience is to bring researchers into the process. In this way we can advance informal and legal recognition of local seed. In Brazil they engaged with Embrapa (the Brazilian agricultural research corporation) to show them that local seeds strengthen agriculture, they are of quality, and are freely distributed. **It is easier to debate with government if we get recognition from formal researchers.**

A victory in the last political cycle was to combine other policies on hunger, family farming and local markets. It was the first time government recognised that agroecology contributed to economic gains and in battling hunger. It was good to hear government speaking the same language as social movements.

Then the organisations strengthened the role of networks and actors on family farming, including markets, climate, women, seeds etc. Farmer experimentation with researchers to carry out their own tests is important, working with the gene banks and bringing seed back. Farmers organised to travel to the capital to get seed, then went back to their regions to reintroduce the seed. In policy, there was a push to empower seed banks to improve their structures, and increase storage capacity and the volume of seed stored. They did training and farmer exchanges.

During that time, it was important also to discuss institutional markets. In Brazil, they are talking about markets in plural, different markets. In the context of Zero Hunger, family agriculture was introduced into schools to strengthen nutrition and local production. Local seeds were donated to local farmers – various varieties of fruit, vegetables and maize – with some variety within each of these to guarantee diversity. It is important to specify that marginalised farmers were prioritised – farmers in mining areas, indigenous communities and others.

Severina Pereira from **Polo Da Borborema** presented on family farming. Family farmers are considered the guardians of seeds of passion. Severina is from the semi-arid Northeast Region, from ASA Paraíba. They value natural resources. Seed banks are organised in societies valuing the farmers' role in preserving seed as a means of maintaining the natural environment. The seed bank was financed by a government project with farmers.

They recycled plastic bottles for storage, first using the sun to dry the seed and then storing it in barrels to guarantee the seed maintains its temperature. When they were mapping guardians, they compiled a story of up to 40 years of defending and cultivating the seed, from generation to generation.

It produces for many years, not just one season. It is chosen in the fields and then they do storage, which must be ideal for a semi-arid region. They tried plastic containers, without much success. They then used metal barrels, which were passed down from Severina's grandfather, who had also inherited them. Each barrel stores three 60 kg bags of seed. They won a battle to get government to supply barrels for seed storage, but the current material is not good quality zinc, and so seed storage is not guaranteed when using these. They threw them away and are using the old ones. To repel insects, they plant sunflowers around the smallholdings so the field is visually appealing and also repels insects and pests.

Source: Sebastião Estevão, Severina Pereira and Gabriel Fernandes

They did a map of seed varieties and produced educational material, and provide a certificate to guarantee the seed quality. They host a Seeds of Passion Festival where there are exchanges, and where farmers sell their production. They organise opposition to GMOs. On gender, many women spearhead the work. The number of women taking to the street has grown each year, with up to 6,000 in some areas.

On GMO monitoring, they do tests on the seed and leaf, and do an evaluation. If a farmer has good quality seed and plants GM corn, they are deleting the story of others that brought the seed from their ancestors. They have GMO test kits, which were financed by NGOs because farmers don't have resources to buy kits. They try to do tests for the bulk of farmers using wet corn and markers. If it is GM, it goes to the animals but the farmers can't keep or store it, or take it to fairs, because it will contaminate the seed of other farmers. If anyone loses seed, and it is at the gene bank and the seeds were contaminated as shown by tests, the farmer comes to the organisation and asks what to do because they plant in a settlement area. Other farmers will then share local seed with those farmers. Distance is the only issue. If the seed is GM free, other markers can show from the different companies. A certificate shows it is not contaminated. if it is contaminated, they send a letter to government. They have experienced contamination, especially during drought periods.

Sebastião Estevão from **Centro de Tecnologias Alternativas da Zona da Mata (CTA-ZM)** said he is glad to be here on Mother Africa. Sebastião shared his experiences on agroecology with popular movements. He said it is important as a black Brazilian to get to know the land where he came from. He lives in Mina Gerais, where most of the population is black, not only in skin colour but the colour of the cause. It is one of the best agroecology regions of the world. A plan was created through a legal project created by a deputy, linked to social movements in their region, to turn the area into an agroecology hub.

As a militant, cultural agent, Sebastião goes throughout the municipality telling people about the plan. Farmers, youth, children and ex-slave communities will implement the plan. In the past, when blacks were enslaved by the whites, they could not accept being enslaved, and formed *quilombo* communities, which are recognised as the true and authentic remnants of the ex-slave communities. Over time they also accepted indigenous people and migrants into their ranks, as a form of solidarity, even Jews who were persecuted. Blacks had nothing. They would put seeds in their hair, women would put them on the bottom of their dresses. When they came to these lands, they were always

far away in the hills. Living there they could see from a distance if someone was coming. They would plant with these seeds. That's why it is called creole seed, because they grew in these communities.

Sebastião's main work is with quilombo communities. He is an advisor to a parliamentarian from the same region. Sebastião works with these communities and builds their abilities, learning from the experiences of the elders, and their resistance and battles. When he was invited to participate in this meeting, the first thing Sebastião said was no because at the same time a caravan of different communities was travelling and he had started this. But when he heard it was Africa, he said yes, he would come. Caravans have one main objective – that of exchange – of flavours, knowledge and recipes. This is important for the Brazilian people, whether culinary or simply tea, or medicine. When farmers and activists work on agroecology, they don't depend on buying medicines from laboratories, which are their enemies.

In this new retrograde political period they have their role as people of resistance, fighting for revolution. They also have an agroecology movement in country, with Gabriel participating by documenting their experiences. Sebastião dreamed of a link with Africa. The seed belongs to the people, not just us.

Also think of the wind, the birds and animals that are the planters of the seed. They are working in a group, which is usually more than just one person on their own. Agroecology works better in family agriculture than for commercial production. It includes youth and children. They do exchanges, including seed. The more you exchange seed the stronger it becomes. Agroecology is so important for the people in the fields and the cities. They are also in dialogue with city dwellers. We must start with children from a young age. It is a dream of many Brazilian men and women for agroecology to become a school subject. They have FFS coordinated by farmers themselves, they define the school curricula. This is about access to popular education and scientific knowledge, and is carried out by the university.

Researchers, farmers, youth, men, women, schools – all participate. Our experiences relate what is being done, and the way it is being done. We cannot speak of seed without also talking about water, culture, spirituality. This is a popular battle, requiring social organisation, so we can be connected. We can share through internet and social networks. We should not lose this contact and relationships.

We can compare ourselves to ants, when they finally feel the bite of one ant, 1,000 will have already bitten. We must fight for dignified public policies. The quilombos are the most hurt. The majority of victims are black, it is a racial crime. The bulk of companies are foreign owned. Art and music tells about our history and journey, and what we need to do. If agroecology, culture and spirituality walk hand in hand, we will save the earth from poisons and GMOs.

Louise Sperling from **SeedSystem.org and CIAT** offered insights into local markets. Louise acknowledged the challenges about local markets, especially from France and Brazil, while also recognising that others take a different perspective. If we understand and work with local markets, we can reach hundreds of millions of farmers.

This is only drawing from African experience. Louise was not talking about formal markets or agro-dealers – her focus was on local markets for food and seed. Not all grain found in local markets can be sown. But **if you look and study, it becomes clear that a subset of grain is specifically there to be used as seed**. It is adapted, the right varieties farmers want, and of fairly good quality. It is named 'potential seed'. So in a local market you find grain but also potential seed. Informal traders recognise potential seed, e.g. in Ethiopia for sorghum, traders who are interested in potential seed source very narrowly because of the specific

adaptation. Maize and beans can be sourced more widely. The seed is sourced by agroecological zone. These traders have very specific management techniques for seed, ranging from seeking our specific growers and varieties to quality management of stocks specifically for use as seed (Table 1).

Table 1: Trader management practices for potential seed, Eastern Kenya

Management Practice	Green gram	Millet	Cowpea	Pigeon Pea	Maize	Sorghum
Get grain from specific regions	X	X	X	X	X	X
Seek out specific varieties	X	X	X	X	X	X
Buy from specific growers	X	X	X	X	X	X
Keep varieties pure	X	X	X	X	X	X
Keep freshly harvested stocks apart	X	X	X	X		X
Grade stock				X		
Germination tests						
Special storage conditions	X			X	X	X
Sort out waste				X		
Sort out bad grain/seed				X		
Sell seeds and grains separately	X	X	X	X		

X Indicates that over 50% of those interviewed implemented this practice

Source: Louise Sperling

"Farmers have to unite and fight, and go to the streets in large groups. If we don't pressure government, they will never listen."
Severina Pereira, Polo Da Borborema, Brazil

From an economic point of view, out of the sowing season, seed and grain have the same price. But at the start of the season, adapted varieties have a higher price and if it is well sorted, there is a further price potential. It can differ in price by 40%-60%. This happens at scale. Some might do 4,000 metric tons of grain, with about 10% used as seed, so 400 metric tons planted by farmers for a single trader. This presents an opportunity if you make the quality and choice acceptable.

On own stocks and local markets, market use varies by crops. Even for maize, local markets are more important than agro-dealers, and own stocks are even more important. Local markets are important all along the classes. Local markets for nutrition are important, for example legumes. Diversity of crops supplied is much wider than formal, community groups, or organic suppliers. **It is not a competition, but if you are interested in diversity, you have to look at local markets.**

Modern/'improved' varieties are mostly free through seed distribution. But local seed (farmers' seed including seed that may have derived from the formal sector and has been adapted over the seasons) comes through local markets. We need to talk more about poverty. The poorer you are, the more likely you are to use local markets to access local seed. Better off farmers often keep their own stocks, but smallholders on less than a hectare get much more of their seed from local markets. There are reasons for leveraging local markets for seed quality. It is one form of access for the poor, especially in crisis areas. Nutrition rich crops, such as legumes. Informal 'grain' **traders are a good vehicle for moving local varieties, more effective than farmer to farmer or extension for moving big volumes**. Traders can be considered as possible allies and not enemies. They do move new material and the seed is quality. **Traders have better storage conditions, they keep different varieties for different agroecological zones separate, there is a price differential, and traders go everywhere, including crisis areas.** Traders will go where seed companies won't go, like into high risk and conflict zones. They supply large amounts of seed and grain, and have an interest in seed quality as a value added market in itself.

There are different scales of traders. This is not speaking of those bringing their own products to market. There is a larger group who move potential seed from one region to another, of 20-120 metric tons/year. There are also the big international grain traders, but we should focus on this second tier to understand it better.

The presentations on markets was followed by discussion in which the following points were raised:

- Guy reassured Louise that his position is not opposed to **traders**. They also have in their networks some who defend completely free trade. Guy's position is only from a faction of LVC. Louise presented a summary of the actual situation in Africa and the importance of local markets is evident. We don't need to deny this or that there are traders from one country to another. There are also farmers who organise to exchange seeds in crisis periods and to protect the quality of seed, which is not always done by traders. The analysis Louise provided is essential. This is the reality that we must work with. We must understand the reality in order to transform it. Globally, trade is regulated by multinational corporations who are poisoning us. If you ban GM, they say it is a restriction on freedom of trade. We don't agree to that freedom of trade. Farmers must organise and oppose this.

- Noufou said that there is a commercial aspect to the farmer seed when they plant in Burkina Faso. Farmers sell products they use to make sauces. But cereal products are cultural. You won't see a producer during the rainy season going to the market to buy sorghum seed. This is humiliating for the farmer. There is an integrity that the farmer wakes up and goes to the storage room to get seed. Awareness is needed today to allow farmers to continue and not to go to the market to find cereal seed. It takes decades of experience with producers to create the awareness to continue to maintain farmer seed. FNGN in Burkina Faso tried a project to do certified seed, with the objective that producers could multiply and continue to sell the seed in their community. But farmers didn't use the quantity that was given to them. What happened? They explained that someone cannot beat the rhythm and dance at the same time. FNGN told them to maintain farmer seed, why are they now bringing something else? They realised that the understanding was absorbed, and became aware to be careful of seed from outside. We cannot win this struggle if producers are not committed to searching for solutions and being involved. At the end they will propose solutions that will be even simpler than what we come up with.

- Sabrina noted that in Togo it is clear there is a lot of involvement of youth. This is a challenge in East and Southern Africa and in other places. What strategies did AREJ use to make the youth interested and involved in agroecology?

- Jacques responded. On youth, in 1995 he noticed that the youth used to leave the rural areas. We only see very young and old. When the youth used to travel, what did they do? He was heartbroken. Without youth how can the country survive? He has agronomic training. He asked himself if a salary will make him happy. He resigned and went back to farm, not to teach but to practice. He did what the youth want, not what he wants.
  Agriculture was not a job, it was considered as the lowest job of those who cannot progress, those at the bottom. They needed to permit themselves to show that when you farm, it is to make money. Farming is not just for people who didn't go to school. For 14 years he worked hard without asking for state support. Slowly, the youth came and eventually they got support from the French Embassy to build a centre and infrastructure. After 15 years of work the Togo state noticed that the youth were there. The youth said they came to be trained and that Jacques was an ally. He trained them and gave them work, and now they stay in the countryside.

- Severina added that in Brazil they introduced training in agriculture for the youth to love it. **The first step in bringing youth into agriculture is through the family.** At the fairs you see individuals who love what they do, they get into studying agroecology. **The second step is school.** They had many projects, with campaigns for family farming that work with children 3-12 years old. They talk about water, seeds, all themes with regard to nature. They used educational and theatrical means. This year, they spoke about racism. They use an educational format, saying "accept me the way that I am" and highlighting the value of children within agriculture. They had an activity where they used a whole set of educational tools. Once these children go to university they can contribute. The previous government gave spaces for that. There are children of farmers that managed to graduate. Now they need to fight again.

- A question was asked to Jacques about what government support is offered on seed production. Jacques responded that in Togo they have the support of government in their work. They want to work with states, not just accepting what they want, but presenting to them what people want. We must stay firm on our position. The future is agroecology. In Togo they have the support of the state because the Togolese state has sent farming agents from the schools to be

trained. Since 2015, 1,200 administrative representatives have come to their facility to learn agroecology. They have studied and have a political position but they don't understand what happens on the ground. They have a financial interest, but AREJ is for the people. Government will be forced to listen to us.

- A question to Brazil was on the recurring issue of GM contamination. They spoke of testing. What happens when seed supplied by government is contaminated? What protection is in place, e.g. are there biosafety policies, to claim or report? Do you just let it go, or do you start a legal case? Gabriel responded by saying that in Brazil organisations adopted strategies that were supported by public policy. They **gave strip tests to seed banks to avoid GM contamination.** In the last six to seven years the semi-arid region has gone through the worst drought in 100 years. Farmers have planted local maize. If they are not part of a network, they buy seed in some location. This is how they got access to GMOs. They don't know where the seed comes from. This is another problem. The main entry of GM maize was through a policy of maize subsidised for animal feed, given by commercial farms in Brazil to government and sold at low cost prices to feed cattle.

  Some was used as rations but some was planted, GM seed. Some other was ground and some other was exchanged, which is the nature of farmer activity. What has happened in the drought is that maize is testing more and more positive for GM contamination. Farmers noticed their varieties were being contaminated. They tried to recover seed from their neighbours or the seed bank but this was also contaminated.

  With an increase in contamination, farmers are reaching for the old varieties. It is more difficult to recuperate old and almost extinct varieties. We need to figure out how to save local seeds that cannot be recuperated. They must be planted in a controlled manner to see if we can decontaminate them. The rate of contamination was very high. In 2007, GM maize was allowed in Brazil. They managed to fight this and disallow production or distribution. The big companies challenged them on contamination. They fought back to say if it occurs, a specific case must be proven. The movement could show that contaminated seed is not just a personal cause but is cultural. This started 12 years ago and there is still no conclusion. We must look at all elements to save native seed.

Source: Sebastião Estevão, Severina Pereira and Gabriel Fernandes

"Our rule framework can be different from one country to another. There can be general baselines on which we agree, what must be recognised in laws by government." **Guy Kastler, Confédération Paysanne/LVC, France**

- Guy said that the question of GM is very significant, and it is not only GM, it is all seeds that grow sick plants needing chemical products. If they are not hybrids, the seed is so sick the farmer does not have seed anymore. We have to transform this situation. On GM, the Brazilians showed the importance of public policy, otherwise you don't know the genetic sequences to identify GMOs. Policies force industry to make these sequences public and so we can use tests. In Europe they used these to destroy fields where those crops are planted. But public policies are under pressure from industry to evolve so that industry is not obliged to indicate genetic sequences. There are new GM techniques. We are talking about modification not selection. If it is not regulated, we won't be able to identify them. They will be available in all markets.

- Severina referred to earlier comments that once the seed is contaminated it is impossible to purify. In Brazil they are doing tests at universities for the 2018 yield to see if they can purify it. They took the same seed and planted it but it was still contaminated. Once it is contaminated, you can no longer use it. Companies will start charging royalties. Each strip shows a different poison. The idea is to create multiplying fields that are isolated, then they recuperate on the farms that are isolated.

- Sebastião agreed with Guy that things are not simple and romantic. When we speak about laws, countries have their own laws. In Brazil, the bulk of congress are business people with large scale farms. Many of the chemicals are made in Europe and have been used in war, e.g. Vietnam. Since the green revolution, we have been trying to invert monoculture and end hunger.

  There was an authorisation for chemicals used in war to be used in agriculture (e.g. 2,4-D). An agroecology hub is being created this month, connected to the unions and movement. We met with congress and have a popular front for agroecology. We are fighting. We have had various actions. Even the Minister is a landowner and has an interest in producing poisoned stock. We agree with the destruction of GM fields. This is something that few people know. We still protect our seed. It is the biggest asset for the country.

Permaculture Design Institute, Msim Farm, Zanzibar

Policy frameworks and processes

Global and regional policy frameworks and support mechanisms

The International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)

Guy Kastler from **Confédération Paysanne/LVC** presented on the ITPGRFA and the consequences for the organisation of our work and farmer seed systems. The origin of the Treaty is in the development of the seed industry, which does not produce seed without chemical products. It uses seeds selected by thousands of years of farmer selection. The objective of the seed industry is to replace farmer seed systems. But there is a contradiction if they replace farmer seed, because this is their resource. In most Western countries, most farmer seed has disappeared. They need to preserve the resources, in the same way that their mines are a resource as metals for the steel or iron industry.

So industry decided to organise collections from farmers' fields without their consent. They took these seeds and put them in gene banks, the phyto-genetic resources, if we are using international language. They used to say it was human patrimony, that everyone was to have access. in the last 60 years industry's goal was to cross breed all the seed on the planet. That's what farmers do, they cross seed with their neighbours' and occasionally with seed from outside. The collection is managed by the CGIAR [formerly the Consultative Group for International Agricultural Research] with finance from the World Bank and big corporations. For those who know wheat, the size of a wheat seed plant is less than 0.5 m because they cross bred wheat with Japanese wheat that grows in swamps. In this environment, wheat cannot grow too tall or the seeds fall in the water and cannot grow. These dwarf wheat plants were created by industry.

In 1992, the CBD said there is no common patrimony and the genetic resources of plants, animals and microbes are under state patrimony. This was the engine of change. Africa and South America responded that they have the resources but the North gets the benefit from breeding and patenting and the North needed to ask for authorisation. The benefits must be shared with the countries where the materials are coming from, then they can share this with the local communities. Some do it, some don't. This shook the seed industry. From one day to the next they did not have access. From access to the seed banks and creation of the market, there were about 300 exchanges between gene banks and companies. They said they can't sign documents every time there is an exchange, so they wanted to get their own patrimony back.

The **Treaty** was adopted in 2001 and entered into force in 2004. It facilitated access to seed and the sharing o advantages. Every country was supposed to put their collection in the multilateral system (MLS). Ratifying countries were to have access to every seed without prior consent. In exchange, three conditions were negotiated, with NGOs active in the negotiations.

One is ABS from the proceeds of seed sales. But this is mandatory only if they register a patent. Otherwise there is no protection system, and benefit sharing is not mandatory. The second condition was that there would be no IP on accessed materials in the form received, to limit facilitated access to the MLS. Benefit sharing would only be payable and PVP was allowed on material developed, if the materials were not freely available for researchers and breeders. However, this was not extended to farmers. Farmers don't have permission to access seed from the MLS. In France they had to fight for 10 years, even if this was their parents' seed. It allows the industry to facilitate access to source materials.

They negotiated a right for farmers to conserve, use, exchange and sell. This is an unconditional right in the preamble but during the negotiations the article that defines farmers' rights, Article 9, said it is under the responsibility of the state, and not the Treaty, to enforce. They can do whatever they want. When Article 9 was negotiated, the seed industry representatives from Canada and the US were not Treaty members at the time. But they made sure that the Treaty has to be in harmony with other international laws, such as UPOV 1991. Our delegate was sleeping.

Fifteen years later, the profit share is only US$10 million in the benefit sharing fund of the MLS under the Treaty. According to projections, US$40 million should have brought back 0.5%-1%, representing US$120-140 million/ year. In the same period, for conservation of gene banks, they received US$114 million. So there is US$10 million for farmers' rights in conservation but plenty of money for conservation in the industry. There were higher numbers later. Industry doesn't pay even when they have a patent. No country obliges them to indicate the progeny from the MLS they are using. They resist a trace and track system. It is a cheek to say tracking is impossible. Today everybody has heard of blockchain, which allows us to know the precise source of the progeny of seed. It can be done today, they just don't want to.

In 2014 the Nagoya Protocol established a system of access and benefit sharing for all biodiversity. The Treaty's MLS system in Annex I does not cover all species, for example, rice, quinoa, and many African species. Providers of biodiversity said the users must share profits.

Industry wants the Treaty's Annex 1 to be expanded to all plant genetic resources for food and agriculture. Africa, Brazil, Philippines etc. said they want to increase the bilateral system but it must function, they want tangible and real benefit sharing to be paid into the MLS's benefit sharing fund. For farmers this is justifiable and necessary. Why? The example of the Mali gene bank is that there is not even enough money to pay for electricity for the cold room.

They have to give the materials to France to maintain, which then doesn't even share the seeds back. Money is needed for the national gene banks. We saw the varieties we have lost, there were photos from Brazil. We see them in the gene banks but there is also acceleration due to climate change. African farmers will need seed from South America and Asia, and also Europe will need this. We know the money will not go to farmers, it will stay with government. But at least they will be able to maintain the national gene banks.

The second element in the discussion is that farmers' rights were not respected. The Treaty decided to implement two working groups. This happens in all international negotiations. The working groups were tasked with improving the benefit sharing under the MLS and the implementation of farmers' rights. The discussions in both working groups are very contentious and the results will be further discussed at the Governing Body meeting in Rome in November 2019.

In regard to digital sequence information (DSI), LVC was the first movement to speak against this in 2015. They asked why is it called digital sequence information. It is the result of the technical evolution of genetic manipulation by the seed industry. There are plants that can be bred with hand tools. Today the breeder will use a computer. There is a database of millions of genetic sequence data in the MLS. If they don't know what it is used for, it is not useful. They need to know the seed is resistant to a type of insect, climate change, etc. You can't see this in a lab but in the field. So this is knowledge that comes from farmers. This is a secondary database of knowledge from farmers, that the seed shows resistance to insects or whatever else. Now they have algorithms using powerful computers to manage billions of data. They link different sequences and characteristics from agriculture to produce pesticides, or from medicinal plants. This is not uninteresting, but they link to what we call genetic information that comes from DSI, and the industry can submit patents. **They don't need to patent the actual varieties, the patent protects the sequence in the plant and thus the whole plant is subject to patent protection. There are 20,000 different genes so it is a small part. But the outreach of the patent spreads to all plants that contain this code.** It is a lot more powerful. When they have rights on one sequence or trait protected all over the world, e.g. a patent on resistance to pesticide, they can use it on all plants, then on all varieties of a species on the whole planet.

On GM, we usually speak about transgenics, for example the gene from Bt introgressed into maize seed. This has nothing to do with maize. It allows the tests spoken of earlier. But today with the new breeding techniques, e.g. Bt produces pesticide, it is the genetic elements that are introduced in the genome. It won't stay there. A plant with those genes will copy that Bt gene to produce the pesticide. There are only maize genes, no external genes. Industry says its the same thing. But it is a lie, the plant is not identical, there are other modifications that happened. There is a global offensive so the new GMOs do not become regulated. This is the dematerialisation of data through information technology. But there is a pebble in the works. The movement won at the Court of Justice of the European Union, which held that products developed by way of genome editing have to be regulated.

These products need to be regulated on a global scale. Patents have an impact on all plants with this genetic information expressing pesticide characteristics. When they put a patent on a trait in a new maize variety, it is identical to what exists in our seed. But the patent is only on this small part of the genetic information. Through this they basically steal all our seed. It will impact even on the seed in your own collections if they do it with this genetic sequence. ABS must be linked to genetic information. Industry says no, they are not connected, the patent on dematerialised genetic information is intellectual information. But if they don't want that submitted to ABS, then the patent cannot reach the seed.

So if there is a link with the patent, there is also a link to ABS. This second debate will be in the negotiations in November.

Currently they cannot patent materials accessed from the gene banks through the MLS. But there are patents on all materials. If you give seed to the Treaty, industry will have access to it, do sequencing and submit patents if there are interesting characteristics. So we are asked to give seeds and facilitate their work to stop us from doing our work. African countries are starting to understand e.g. Pierre du Plessis for the African Union (AU). But it is not spoken of. If we give seed to the gene banks it will lead to us not being able to use it, so we cannot share with the gene bank. The law will then have to forbid the Treaty if this is allowed.

"We want to move from the criminalisation and inequality, and recognition of only one system. Recognition is like a funding mandate. So if there is no recognition, farmers will not be able to do any work, they will always be on the margins." **Mariam Mayet, ACB**

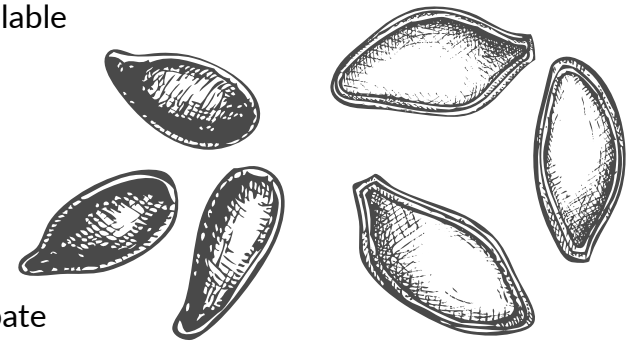
The Convention on Biological Diversity (CBD) and its Protocols

Mariam Mayet from the **ACB** presented on the CBD and its Protocols. There is a lot of activity on PGR in the CBD. The CBD is the mother agreement, and the three Protocols are the daughters. These are on ABS, genetic engineering, and liability to redress. Biodiversity is being mainstreamed across development agendas regarding state and other actors. They are recognising the importance of biodiversity in the context of loss, erosion and species extinction etc. For the CBD this is a pressing issue and they have set out a global mission to stem the loss of biodiversity.

It is not a new issue for the CBD, it is already in the Convention in Article 6b. There was an obligation long ago on states to take this into account. This was an 'isolated aspiration'. There were the Sustainable Development Goals (SDGs) in 2015, and the 2030 Agenda with milestones on biodiversity that are covered by 17 SDGs. The Conference of Parties (COP) in Japan set the Aichi targets for 2011-2020. The Climate Change Agreement also recognises ecosystem integrity. There are national biodiversity strategies and action plans, where states are required to show how they will work on biodiversity, with mainstreaming conservation and sustainable use into national plans and policies – the National Biodiversity Strategies and Action Plans (NBSAPS). These were concentrated only on forestry, fisheries and agriculture. In 2018, countries declared that the targets were a failure. They couldn't limit it to the three sectors, there was also manufacturing etc. that it had to be extended to. There is a lot of literature to show that these NPSAPS were unsuccessful. Things have been worse since 2011. They are untransparent, exclusive processes, with poor governance. Africa did try, but overall it has been a dismal failure. There is reluctance to address the systemic issues, such as extractivism, inequities, carbon footprints and lack of legal frameworks and enforcement.

There is a newish process, the post-2020 biodiversity framework. They need to start again with new targets and new actors. LVC and others are actively participating and so are a large swathe of well-resourced conservation groups. We have noted an important issue, which is the absence of small-scale farmers, generally speaking, in the CBD discussions. There are some indigenous and local communities but not smallholder farmers. Next week is the first meeting of the working group to discuss preparation for the new framework, taking place in Nairobi, Kenya.

A zero draft was published. South Africa has started a participatory consultation process, but mainly intergovernmental and with conservation groups, the social movements are not there. The ACB and CSOs said to government that in order to negotiate, they must go to communities. Government will make some funding available for this. Others must also engage at the national level to influence the process. There will be negotiations between now and COP15 in China, in October to November 2020, to adopt a new biodiversity framework. South Africa is to chair the African Ministerial Conference on the Environment (AMCEN) as well as chairing the AU, so South Africa will lead the African Group in the post-2020 negotiations, under the CBD. We must participate in national discussions. If we don't put in things like banning GM and pesticides, and a transition to agroecology, these will not be in the global plan.



On the Nagoya Protocol on ABS, these relate to Articles 15 and 8j of the CBD, calling for equity between providers and users of genetic resources, with prior informed consent and benefit sharing. This overlaps with the DSI discussions.

The Cartagena Protocol is about minimum standards for the regulation of transboundary movements of GMOs, covering decision making, risk assessments, risk management – so far its application has been in respect of the first generation GM. Industry also argues that some genome editing applications do not need regulation. This is highly contentious as Guy has already pointed out. The African group blocked risk assessments on genome editing and a moratorium on gene drives during the last COP in Egypt. These are extinction technologies. Africa has a poor position.

The Nagoya-Kuala Lumpur Supplementary Protocol covers liability and redress for GM, but it is not an international civil liability regime. Rather, it is a set of international administrative rules in regard to damage to biodiversity that has its origin in a transboundary movement. Many domestic environmental laws already provide for administrative measures such as the duty of care, clean up by the transgressor etc.

Justify Shava from the **SADC Plant Genetic Resources Centre (SPGRC)** spoke on farmer varieties from a regional perspective.

The SPGRC started as a project in 1989, fully funded by Nordic donors. SADC Member States picked up funding gradually over 20 years until full takeover in 2011. It is now a unit under the Directorate of Food, Agriculture and Natural Resources (FANR), with full legal integration finalised in August 2019. The SPGRC is a network of 16 countries in SADC. Each member state has a national gene bank to coordinate conservation work on PGR in those countries, and they work together. Its mandate is to mobilise, conserve and make available PGR using appropriate technologies and standards, thereby contributing to sustainable development, environment and food security for the well-being of the people of the SADC region.

The SPGRC has a hierarchical structure. It starts with the technical committees at the base. These contribute to debates in member states, including senior officials at Permanent Secretary/Director level. They give information to the sectoral Ministers. The information then goes to the Council of Ministers, usually Foreign Affairs, and then to Heads of State. **If you present information at the lower level, they will take it to the sectoral ministers.** Usually Ministers just take the views of their senior officials and technical committees.

SADC recognises the role of millions of smallholder farmers in the maintenance, conservation and use of PGR, and its importance in agricultural production systems. The existence of the SPGRC itself is evidence of this recognition, and so is the Centre's in situ programme for on farm conservation and CSBs. **We know farmer seed systems do exist in member states. The role farmers play in ensuring food security is huge.** Everywhere we go, they emphasise we must work towards the interests of farmers.

SADC works in both formal and farmer systems. They support formal scientific research in new variety development, as well as enforcing stringent seed certification requirements. On the other hand, they also fund research in PGR conservation and promotion of farmer varieties. They encourage registration of farmer varieties and promote even harmonisation of policy to enable easy cross border movement of seed. However, there is no reliable information about seed availability and farmers are not receiving adequate support.

Source: Justify Chava

"In farmer systems there is a need to ensure quality and traceability. Farmers are being let down in this regard, because there are no guidelines to ensure farmers exchange quality seed amongst themselves." **Justify Chava, SPGRC**

The Harmonised Seed Regulatory System (HSRS) factors in farmer varieties under QDS. There are however no guidelines to implement movement on farmer varieties. There are no organised farmer seed production systems in the region. Seed quantities are likely to be very small. Economies of scale don't favour the system. Currently the regional variety catalogue has 48 varieties. None of these are farmer varieties. Large companies are better organised than farmers. Government and civil society should work together rather than fighting with one another to resolve these issues. The bottom line is that it is about effective access by farmers to quality seed, including germination, free from diseases, and which results in improved food and nutrition outcomes.

Key strategic elements

- Move away from the heavily-contested areas e.g. common crops like maize, wheat, rice.
- Focus on nutritional benefits rather than nominal benefits. VCU is not only about nominal yield.
- Help farmers develop guidelines suited to their conditions. Let the giants compete on their own while the dwarfs also do so on their own.
- Exploit available channels, such as the HSRS.

Thandi Lupupa from the **SPGRC** added some comments. Although farmer varieties are recognised under QDS, there are contradictions and the system favours big companies. QDS is supposed to capture farmer seed systems but there are no systems in place to ensure farmers benefit from this. What can we do about this? In terms of ensuring quality and traceability, we need guidelines to ensure farmers exchange quality seed among themselves. **Farmers can contribute to quality seed production, but with some quality controls.** There are no guidelines on QDS so far. **There is demand but farmers cannot meet the demand at scale.** They need economies of scale. No one is assisting farmers to organise. We can focus on the nutritional benefits.

"Rules" is a strong word. We need guidelines or procedures with flexibility." **Thandi Lupupa, SPGRC, Zambia**

Source: William Hamisy

Identifying national policy frameworks, processes and support mechanisms

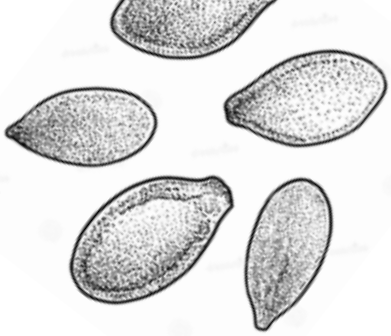
Evelyn Chateya from the **Seed Services Institute in Zimbabwe** presented on the national framework in Zimbabwe. Zimbabwe has no seed policy but two seed laws. The policy is still being drafted. It is hoped the policy will accommodate both formal and farmer seed systems. There is a task force in place to draft the seed policy. We have a Plant Breeders' Rights Act (PBRA), a Seed Act and regulations on quality control and assurance, with seed certification schemes that define field standards and markets. Zimbabwe has a private sector-led seed industry, with a strong formal seed system that produces high quality seed based on government regulation. Zimbabwe's seed industry is connected to a number of global research institutes as well as working with, and participating in, a number of regional and international associations and technical bodies.

The farmer sector does exist. The formal sector only deals with commercial crops. Underutilised crops are not available through the formal sector. There is a clause in the PBRA for farmers with more than 80% of income from farming in communal areas, as well an farmers who cultivate on less than 10 ha of land, to multiply, use and exchange materials of protected varieties, as long as this is not solely for multiplication for sale as seed. Participation in seed fairs is increasing.

"When you go to seed fairs, you see that farmer seed quality is good, e.g. sugar beans. But it is not tested. It is not recognised but it is there." **Evelyn Chateya, Zimbabwe Seed Services Institute**

Lawrent Pungulani from the **Malawi Plant Genetic Resources (PGR) Centre** shared experiences from Malawi. Farmers are allowed to use and recycle their local varieties but these are not regulated as the formal system is. The bottom line is that the farmer seed system is recognised at national level after discussions with government. National agricultural policy has incorporated recognition of farmer varieties. Farmers can recycle local materials. But there is a question, especially to Mushita and Mkamanga. We have always cried about these things. You have been talking about these things, and the young generation is joining now. Where are we going wrong? We need to find a solution on how to move forward. We are contemplating a stand-alone policy. Although it is included in the agricultural policy, it is just a drop there. **We must** take it out and **develop standalone guidelines to direct us on how to move forward.**

Studies are being done and several actors have engaged us to do these. Issues were brought out that may inform the process. With time, concerned parties can take these up and frame appropriate policy instruments in Malawi. Some more work is needed. We have all struggled to convince policy makers that this is important. We need to sensitise them to appreciate the importance of these issues. They will then give us room to get more support to expand the conservation and sustainable use of farmer varieties. There is a challenge. We may not need to superimpose this onto the formal system. We cannot win that battle. We should separate the two to move in parallel. But there will still be a challenge. The formal sector will not allow us to include farmer seed systems in their systems. We should engage nicely, not fight them. In that case, we will always want a winner and the other side will win. We should rather give them a clear understanding to get room for a parallel system to advance farmer varieties. Since Lawrent started work he has heard this cry. When can we move forward?



Graybill Munkombwe from the **Zambia Agricultural Research Institute (ZARI)** shared his views and experiences. Graybill started by noting that quality is very subjective, it depends on what you are talking about, what you prescribe as quality. From the time the Zambian national gene bank started in 1989, they have 6,300 accessions. The materials are stored in freezers at -20 °C. This is meant to be short term but the conditions are long term at -20 °C.

Source: Graybill Munkombwe

There is recognition that farmer seed systems exist in Zambia, but there is no legal framework. Government provides support for work on the national gene bank. It does not prohibit the gene bank from taking materials back to farmers, and the National PGR Centre (NPGRC) has been involved in on-farm restoration, multiplication and conservation in selected parts of the country.

This is supported but without a legal framework. There is promotion of CSBs for local seed production and supply, and participation of farmers in local conservation and use is encouraged. A draft seed policy is still being developed. It has been in draft since 1999. Good regulations can be developed out of this policy. In Zambia, QDS is not about farmer seed systems. In QDS, the seed is registered and released by the Seed Control and Certification Institute (SCCI), and is part of the formal seed system.

William Hamisy from the **Tropical Pesticides Research Institute, Tanzania NPGRC** gave a presentation on the Tanzanian framework. Regardless of government efforts that put lots of emphasis and resources into improved varieties, farmers continue to use their own seeds, e.g. Super Kiba rice. The formal sector has limited capacity. Most seed production is by smallholder farmers, and farmers maintain and use their varieties for many reasons (see Box).

Why farmers favour their own seed

- Requires low input
- Have several values lacking in improved varieties
- High nutritive values including medicinal, flavour
- Resistant to drought, insect pests and diseases
- Better adapted to marginal areas
- Special local uses (cultural), ritual/ traditional ceremonies
- High demand and good market price
- Farmers' limited capacity to purchase agro-inputs
- Limited capacity of the formal sector to supply seeds, some local crops do not have improved varieties and in some remote areas, improved seeds are not available

Despite the importance of farmer seed systems, policies and regulations aim to transform farmers into modern and commercial production. Policies and regulations don't prohibit farmers from saving seed but are silent about it. Farmers have been collecting, selecting and exchanging seed. However, there are pressures on them to change their activities. Agricultural modernisation, emphasis on improved and introduced crops, lack of political will on farmer seed, drought and crop failure, and poor handling and storage are factors.

The NPGRC does do in situ/on farm conservation and use and does work on improvements. They work with farmer groups on seed collection, selection, management, multiplication, conservation and distribution. They support CSBs, seed fairs and other related activities. The aim is to ensure the seeds farmers are well managed. CSBs are meant to provide for the needs of farmers.

The following points were made in discussion:

- Mariam thanked governments for giving their honest reflections. However, some concerns are not addressed. First, the African Regional Intellectual Property Organisation (ARIPO) imposes a draconian PVP regime, based on UPOV 1991 but even more stringent. Tanzania and Zanzibar have joined UPOV 1991 from the SADC region and have laws based on UPOV 1991, as does Mozambique. Rwanda has also ratified the ARIPO Protocol and Zambia is in the process of joining UPOV 1991. This means PVP laws will prohibit the exchange and sale of protected varieties on the part of smallholder farmers. It will start to shift policy away from the implementation of farmers' rights and undermine implementation of the Treaty. What will it mean for the future of farmer seed systems in these countries?

  Second is the SADC harmonised technical guidelines drafted in 2008. This process has not kept up to date with current discourses in regard to the complexity in farmer seed systems and heterogenous seed. Legislation is rigid on the definition of varieties. QDS is part of formal systems. It is far from the current discussions on the kinds of recognition and support we have been discussing these last few days. If we engage in a top-down process of registration of farmer varieties we will miss important opportunities. Here we are discussing only the aspect of seed production, but nothing on in situ conservation, PPB or PVS. There is a schizophrenia in respect to legislation, where the discourse is what farmer struggles are, but national legislation is geared to industrial farming systems.

- Donald from Tanzania said that on SADC, it is good that they recognise farmer seed systems but there is a question. The lower level is the senior official level and technical committee. Where are farmers represented at the lower level? Farmers should be there before the decision making body. How can we make the link between farmer seed systems and farmer local technology e.g. biofertilizer, biopesticides etc.

- Noufou said we need an illustrated and simplified presentation of Guy's points on the ITPGRFA so when we speak to farmers we can spread the message and explain. Then we will have more support from farmers. In Burkina Faso, they have a radio programme in local languages to explain to farmers that there are imports of mosquito eggs. For a farmer, they are concerned about eggs that come from a chicken, and here we are talking of mosquito eggs. People phoned. They had to be told to come to the capital to demonstrate. The message had to go through that medium to get them to hear. On Malawi, it was said it would be good for both systems to evolve together and this is agreed. The best way to fight something is to understand it, keep it close, and work with that entity. The formal sector is strong, they have money and power. Governments are poor and weak and it is easy to hijack them.

- Andrew said that on the policy issues, and characterisation of the global policy discourse and regional and national frameworks, what do we need to do? We must look at the specific issues we want to address, especially the ITPGRFA Articles 6 and 9. There are critical elements on how governments intend to domesticate these. Then we must link them to the SDGs. That way it makes sense to combine the two, and also Article 8j of the CBD. The element of DSI and dematerialisation is also important.

Source: Graybill Munkombwe

  At regional level, SADC seems open to engagement and discussion on how to domesticate the SADC seed harmonisation. Of interest is to look at farmer varieties. The rest is much more on the formal seed sector. There are no defined frameworks. It could be interesting to see how to come up with a mechanism and framework. At national level the drafts which are there mostly recognise the role of farmer varieties, but with no specific or separate frameworks to look at these. Some do try to incorporate farmer varieties, but in the context of formal laws. This won't work because they are then forced into the jacket of the formal system with its own objectives. Is this the best way to incorporate farmer seed systems or do we need a separate process of looking at farmer seed systems?

  We are now coming together to discuss and find solutions so there is no more crying. We need to find a way to empower farmers because they are also crying. They have been subjected to criminalisation even though they are providing food security to millions. We know it is power dynamics, with influence from the seed industry on formulating policies. Instruments are also developed by international entities. It is a slow process but it is encouraging that we are coming together. If we can think where we came from, it was never possible to sit together in the same room. There is some convergence. We are now we are sitting down, asking how to move the discourse further. **We can't make farmer seed systems an appendage of the formal system, it must be a separate system with its own support and systems, with recognition that they play a key role.**

- Godwin said he has been on policy issues at regional, national and international levels, and is currently on implementation. It is working. Farmers are able to produce seed. He is from the formal side, he knows how to produce using the formal procedures. Now he is applying this at farmer level. They do it and produce seed on contract for the formal sector. We need a supporting policy. We need to be tactical. The national gene banks will be the gateway to invite people we can talk to. Now we know who to speak to. Farmers are ready. CSOs are producing seed. There will be a meeting in August 2019 of CSOs in Malawi through the help of the ACB. They are forming one network on seed under one umbrella to promote dialogue. But we must be tactical, we need to speak correctly. We should approach government and others as well. We would like to develop a policy on the farmer seed system. Government said please develop a policy and let's look at it. We will then have a Bill. It is not clear yet how the Bills will work together but we will see. Farmers are ready and able. Most seed is farmer seed. Even the Ministers know it is true. It is influence from outside that is making us register policies that are not relevant to ourselves. We should put together the African experience so

we are able to internalise Article 9, though Godwin doesn't like ABS. Africa wanted Article 9 but they put a block on us, they created a list.

- Lawrent said he was at the meeting as an expert, not as government. We need to find the best ways to move forward, finding ways on how to deal with this. It is good to hear there is a meeting on Monday in Malawi, but the focal point is not aware of it, so that is not good. We must do this right. The LI-BIRD model is good. With no evidence, policy makers will not agree. The problem in Africa is that we want to take lessons from other places and apply them here. We must show in practice. If we take policy makers and show them a small garden this does not have an impact. As a team, this is the time to make a difference.

"We must first demonstrate, then we can convince the policy makers. In Brazil and Nepal and in Europe that is what they have done and it works." **Lawrent Pungulani, Malawi NPGRC**

- Evelyn said she started out a bit confused trying to understand what the farmer seed system is. When she presented she said what she understands from the Zimbabwean point of view. It is a system where farmers save and exchange their seed. On the way forward, we need a uniform definition. What Andrew said is correct, that the systems don't have to go head on. Let them run parallel so we can convince the policy makers.
  We need a standing ground – this is what defines farmer seed systems, and here is the supporting evidence/data for African countries represented, so policy makers can be convinced on the economic benefits. Evelyn has also been hearing these arguments. Where do you want us to take this system? If you want to go commercial it may still not work. Don't compete with the formal seed system. They are strong and influence policy makers. We need a better standing ground to start from.

- Graybill said that what will help is countries that have not recognised farmer seed systems, in terms of farmer varieties, to look at a registration method and develop a sui generis system. Individual countries can use this system to register varieties. When we are talking about farmer seed systems, we may not actually be able to substantiate how many varieties there are. But if we are guided by experts who have done a sui generis system of registration and apply it to local conditions, there could be grounds, actual varieties, and then we identify them. According to this system these can be registered. Maybe then countries will be willing to domesticate registration procedures. What is missing is procedures. Some countries have difficulties in implementing. Draft templates help, which can be adapted to the context.

- Justify responded on the question of farmer representation in technical meetings. He recommends having an all-stakeholder forum at national level. The SPGRC is working on a document with the FAO, in which four countries are participating. Others are still to participate. They have national stakeholder consultative meetings. Zimbabwe said they have done it. CSOs and other partners then have a platform to air their issues. Then senior officials can channel the information. The problem is when we are back home, we don't see eye to eye. We need to sit around the table. On the possibility of an agreed position, the SADC role is never to tell member states what to do. We convene meetings for member states to discuss.

Member states must discuss on their own internally, then give information to the SPGRC, which only checks the minutes and confirms with each country. Countries must find resources and convene national meetings, and also regional meetings. The SPGRC has a small budget to look into the policy issues. They will talk to the ACB to see how to take up these issues and work together. They can only support only one meeting per year. For others, organisations can raise money from other sources, meet and contribute. The fight has yielded something. In the harmonisation process, CSO concerns were considered. It is good that after fighting, we have found each other.

"We don't need to feed farmer seed systems into the formal system. They are different systems that require different measures." **Andrew Mushita, CTDT Zimbabwe**

Way forward and close

The final session raised further suggestions for concrete ways to move forward from here.

- Graybill proposed **piloting a sui generis farmer variety registration** with a given number of countries, depending on the budget, so these countries could be used as launching pad. Currently UPOV may not be able to pass.

- Evelyn asked if, from the presentations on existing farmer seed systems, it may be possible to have some documentation on the quantities of seed available for exchange by farmers through seed fairs. On institutions, this depends on the country. In Zimbabwe there is usually exchange between farmers' unions/organisations. **Quantities should be recorded** to make it easier to see the economic benefit, so this can be used to convince policy makers to include farmer seed systems in national seed policies. Some kind of recording is needed at national level. Currently we don't know how much farmer seed is found in different areas. We know it is there, but it is not quantified.

- Godwin said that in research we always do a literature review. In 2000, a sui generis law was developed, the African model law, in English and French. At that time the problem is everyone was an agriculturalist, they didn't have environmental lawyers. Godwin suggests **getting hold of that AU model law to update it.** It was adopted by the AU Council of Ministers. So this is not new to governments. That should be revised and then we can see how to move. On farmer seed, the volumes are still very little. The first thing is to find out how much seed is available, and whether it is easy to multiply. The SPGRC should have a stake in this because of its quasi-government qualities.

- Gabriel said that in Brazil, new public policies took many years of dialogue and debate. Even after having won these, they were unable to implement them all. Now the new government is fighting to destroy the democratic processes that exist in Brazil, it is an authoritarian regime. They will resist this but there is also a need for international solidarity to fight this process in Brazil. It is also happening in other countries. Even though the policies were not fully implemented, we have seen it is possible to have a public policy with public money. We must emphasise **public procurement** to stimulate seed producing farmers investing in quality, and on the other hand to sell to those who have lost their seed. An interesting aspect of the institutional market is coordination of those who can produce seed and those who need seed, with articulation of supply and demand

through government in each area. There is still quality control. In Brazil they went through the official laboratories, with public funds to buy and sell, and test seeds. They haven't registered farmer seed because there is a different process for seeds that are homogenous. Farmer seeds are more adaptive. It is worthwhile to be brave and try. We don't have to try to create national seed exchange or completely remodel the current policies, but we should have proof that this might be separated from farmers' reality. They will seize the initiatives. We must be brave in our context of climate change and biodiversity loss. There is an urgency to work with government and other partners to take steps to mould the approach.

- Donald from MVIWATA said we need **advocacy**, to do more lobbying with policy makers to recognise farmer seed systems and proper guidelines. We will need **proper storage mechanisms** otherwise farmer seed will disappear.

Source: William Hamisy

- Riccardo said it is important that we **maintain activities at practitioner level** with farmers and then at national, regional and international levels. These must go together. Second, on lobbying, a national stakeholder platform is a good tool for dialogue for a transition. On the **Treaty**, there is a new session in November. We must come back to the **national focal points** to have a **dialogue** to understand what they want to do in November, on Articles 6 and 9 especially. There will be presentations on Article 9. We didn't have much in the way of results but just prepared a table. We need to **continue the work of the group on farmers' rights.** They will decide if there will be a new group or not. It is up to our governments to decide, so please go to them. The last point: with recognition, there is also responsibility. We need strong organisation amongst different partners. We should **recognise diversity and different views even within the social movement.** We need to get used to working with diversity even in the social movement. We will need capacity building. There is a lot of material and data to share on the importance on PPB and the economic value. We don't need to start from scratch. We are gathering training guides on organic seed production. The Organic Seed Alliance has already done this in the US. We need global sharing.

- Stanslaus from Sustainable Agriculture Tanzania (SAT) said that in Africa if we are not organised we will not be listened to. Some are doing research, others are lobbying and doing advocacy, others work on production. Information sharing is not enough. When some organisations deal with production techniques, they want to own the information when sharing with policy makers. This will not take us anywhere. We must **share information** with those doing lobbying and advocacy, and they will be able to help. There are specialised activities. It is not necessary to own information without sharing. At one point we attended a meeting in Parliament. They are saying they are hearing noises from everywhere, they don't know where to listen. We need to **work together**.

We have information from production, and others are working on advocacy. We must share the information to make sure it reaches everyone.

- Austin Chilala from KATC in Zambia said policy makers know seed is coming from smallholder farmers but they decide to ignore that. As a way forward, we need to have a mechanism we can use. People talked about evidence, we need to **develop evidence** to convince policy makers.

- Stephen from MVIWATA concurred with others and said we need **integration on information** – what they call the formal seed system, what they are saying about farmer seed systems – and from there take their questions and organise farmers. Everyone is saying we are not organised. We can **organise farmers** to answer those questions from their research, and share information with them to show how we answered those questions e.g. on production and marketing of diverse crops. We must **look for civic space**. We have a link with the Director General of the Agriculture Ministry. These are policy makers. We can take what we have done and can advise them. The ACB should concentrate on information integration, then we can draw from them and develop our approaches to answer those questions.

- Niranjan said the main problem is not technical but the mentality and willingness to value the farmer seed sector. If we talk individually to government they are convinced. But if we approach them formally, there are so many processes that prevent them from accepting it. In Nepal, the national gene bank is only eight years old but progress is quite satisfactory. Partnership is key. We need **joint organisation and implementation on local seed systems with the national gene bank.** Niranjan suggested that the national gene bank should play a key role in promoting gene banks. Currently, they are the only ones talking about conservation and landraces, and farmer seed systems. It was the same in Nepal. Then they were able to tap the gene bank, farmer institutions to generate evidence, and produce data for advocacy. We must take formal initiatives. If an NGO organises an advocacy-type field visit, government does not come. But if the gene bank or other government institution invites them, then they come. **So if we work with farmer institutions and government affiliated institutions, we will have more impact.**

- Guy said we must **evolve according to the new discussion points**. We had never heard of DSI but now it is at the centre of big discussions. To send a document that is accessible for all farmers will be difficult. We must write in our own languages and also consider local culture. Guy can give a general state of affairs. He and others are experts, they follow the discussions, and can give legal advice. But only you can write in your own legal context. On the basis that is happening here, everyone recognises two different systems that need to be regulated differently. What must be regulated? The formal sector is already regulated. So after they have the needs from the producers, they receive a catalogue of homogenous and stable varieties. In our system we don't have those, they change every year. They have the same name, but then someone takes and adapts them and brings a new name. This is not a problem.

  We must characterise the farmer seed. Where does the seed come from, what are its origins, and which are the parents, to secure the breeders, not the genetics. Is it a farmer or trader who sells? If it is a trader then it is not a farmer seed anymore. We need to **work with government representatives to write legally what a farmer seed system is.** It is easy to win but one condition shows what the problem is for industry, and that is that there is no IP. We have to work on this, if the seed is from the farmer system, where we know the parents. Industry is concerned that we will take their varieties, mix them and then resell them and make money, so they are asking for the parents when we buy or exchange seed with other farmers or on market.

This is important for me. It is not a problem for farmers to give the origin of the seed. In France, seed producers are very powerful. But we can win the right to sell if we can show we are not copying what the industry is producing. We can **identify heterogenous material.** It is easy to do it. The government looks for criteria, if they see the crops and can identify them. **We must prove the seed comes from the farmer seed system, and is not a copy of industry seed and that is it. It is now for government to tell us if the description is not good enough for them, then what else must we provide.**

- Severina said countries need to try. In their community, they bought 600 kg of seed but it was all contaminated and it was seed from farmers. Severina took money from farmers to buy the seed, because they organise ourselves to buy the seed. What could she do to replace the maize? How was she going to go back to the farmers? She gave the seed to the animals then used seed they had and gave it to the farmers. We need to **work in solidarity and love one another.** Severina does not think too much about making too much money and being greedy. We know government will not open doors for parts of population, so we must go there and say we need seed. **We can't wait for government to do it, we need to do it for ourselves, by ourselves.**

The meeting ended with a short evaluation and thanks.

Local women on beach, Zanzibar

Acronyms

ABS	Access and benefit sharing
ACB	African Centre for Biodiversity
ANA	National Agroecology Coalition
AREJ	L'Action Réelle sur l'Environnement, l'Enfance et la Jeunesse
ARIPO	African Regional Intellectual Property Organisation
AU	African Union
BCI	Biodiversity Conservation Initiative
CBD	Convention on Biological Diversity
CIAT	International Centre for Tropical Agriculture
COMESA	Common Market for Eastern and Southern Africa
COP	Conference of the Parties
CSB	Community seed bank
CSO	Civil society organisation
CTA-ZM	Centro de Tecnologias Alternativas da Zona da Mata
CTDT	Community Development Technology Trust
DSI	Digital sequence information
DUS	Distinct, uniform and stable
EOSA	Ethio Organic Seed Action
FAO	Food and Agriculture Organisation of the United Nations
FFS	Farmer field school
FNGN	Fédération Nationale des Groupements de Naam
GM	Genetically-modified
GMO	Genetically-modified organism
HSRS	Harmonised Seed Regulatory System
IP	Intellectual property
IPR	Intellectual property rights
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture, aka the Treaty
KATC	Kasisi Agricultural Training Centre
LI-BIRD	Local Initiatives for Biodiversity, Research and Development
LVC	La Via Campesina
MLS	Multilateral system
MVIWATA	Mtandao wa Vikundi vya Wakulima Tanzania
NBSAPS	National Biodiversity Strategies and Action Plans
NGO	Non-government organisation
NPGRC	National Plant Genetic Resources Centre
NUS	Neglected and underutilised species
OPV	Open pollinated varieties
PBRA	Plant Breeders' Rights Act
PCI	Participatory crop improvement
PGR	Plant genetic resources
PPB	Participatory plant breeding
PVP	Plant variety protection
PVS	Participatory variety selection
QDS	Quality declared seed
SADC	Southern African Development Community
SAT	Sustainable Agriculture Tanzania
SDGs	Sustainable Development Goals
SPGRC	SADC Plant Genetic Resources Centre
UFRJ	Federal University of Rio de Janeiro
UNAC	União Nacional de Camponeses
UPOV	International Union for the Protection of New Plant Varieties
US	United States of America
VCU	Value for cultivation and use
WEMA	Water Efficient Maize for Africa
ZARI	Zambia Agricultural Research Institute

Annex I: Participant list

First Name	Surname	Country	Organisation
Mariam	Mayet	South Africa	African Centre for Biodiversity (ACB)
Stephen	Greenberg	South Africa	African Centre for Biodiversity (ACB)
Deidre	May	South Africa	African Centre for Biodiversity (ACB)
Sabrina	Masinjila	Tanzania	African Centre for Biodiversity (ACB)
Batiyenkpeni (Jacques)	Nametougli	Togo	L'Action Réelle sur l'Environnement, l'enfance et la Jeunesse (AREJ)
Godwin	Mkamanga	Malawi	Biodiversity Conservation Initiative (BCI)
Tonderai	Mushita	Zimbabwe	Community Technology Development Organisation
Guy	Kastler	France	Confédération Paysanne, member of La Via Campesina
Louise	Sperling	United States	Consultant – International Center for Tropical Agriculture
Sebastião	Estevão	Brazil	CTA-ZM Centro de Tecnologias Alternativas da Zona da Mata
Mohammed	Haji	Tanzania	Department of Agriculture Zanzibar
Bayush	Gebremichel	Ethiopia	Ethio Organic Seed Action (EOSA)
Gabriel	Fernandes	Brazil	Federal University of Rio de Janeiro (UFRJ) / National Agroecolgy Coalition (ANA)
Noufou	Koussoube	Burkina Faso	Fédération Nationale des Groupements de Naam (FNGN)
Onismus	Chipfunde	Zimbabwe	Genetic Resources and Biotechnology Institute
Austin	Chilala	Zambia	Kasisi Agricultural Training Centre (KATC)
Jacqueline	Ambajo	Kenya	Kenya Peasant League
Foum	Garu	Tanzania	Kizimbani Research Institute
Niranjan	Pudasiani	Nepal	Local Initiatives for Biodiversity, Research and Development (LI-BIRD)
Lawrent	Pungulani	Malawi	Malawi Plant Genetic Resources Centre
Severina	Pereira	Brazil	Polo Da Borborema
Riccardo	Bocci	Italy	Rete Semi Rurali
Justify	Shava	Zambia	SADC Plant Genetic Resources Centre (SPGRC)
Evelyn	Chateya	Zimbabwe	Seed Services Institute
Stanslaus	Kissatu	Tanzania	Sustainable Agriculture Tanzania (SAT)
William	Chamisy	Tanzania	Tropical Pesticides Research Institute (TPRI)
Isidro	Macaringue	Mozambique	Uniao Nacional de Camponeses (UNAC)
Graybill	Munkombwe	Zambia	Zambia Agriculture Research Institute
Khamis	Mohammed	Tanzania	Zanzibar Fruits and Vegetable Growers Association (UWAMWIMA)
Donald	Laiser	Tanzania	Mtandao wa Vikundi vya Wakulima Tanzania (MVIWATA)
Stephano	Msuya	Tanzania	Mtandao wa Vikundi vya Wakulima Tanzania (MVIWATA)
Thandie	Lupupa	Zambia	SADC Plant Genetic Resources Centre

Annex II: Programme

DAY 1 WEDNESDAY 21 AUGUST

08h00-08h30 Welcome and introductions
Mohammed Haji, Ministry of Agriculture Zanzibar, Mariam Mayet, ACB
All to introduce

PART I: DEFINING FARMER SEED SYSTEMS AND FARMER SEED

08h30-09h10 Facilitator: Sabrina Masinjila
Presenters to make short inputs on defining farmer seed systems to stimulate discussion
Stephen Greenberg (ACB South Africa) *Discussion: 20 minutes*

Recognising farmer seed

09h10-10h30 Facilitator: Jaqueline Ambajo
Panel to make short presentations on aspects of farmer seed to stimulate discussion
Why recognise farmer seed? – Andrew Mushita (CTDT Zimbabwe) 15 min
Means of recognising farmer seed – unpacking DUS and relevance/application beyond the formal sector, and alternatives – Guy Kastler (LVC) 15 min
Registration of farmer seed: varieties vs populations – discourse and experiences in Europe – Riccardo Bocci (Rete Semi Rurali) 15 min *Discussion: 35 minutes*

10h30-11h00 Tea

PART II: PRODUCTION QUALITY CONTROLS IN FARMER SEED SYSTEMS

Quality concerns and responses in farmer seed systems

11h00-12h15 Facilitator: Andrew Mushita
Panel to share and stimulate discussion on the main quality issues facing farmers with their own seed, farmer practices to respond, and existing gaps in quality controls
Bayush Tsegaye Gebrrmichel (Ethio-Organic Seed Action, EOSA) 10 min
Isidro Macaringue (UNAC) 10 min
Jaqueline Ambajo (Kenya Peasant League) 10 min
Louise Sperling (CIAT consultant) commentary 15 min *Discussion: 30 minutes*

12h15-13h15 Lunch

Means to support quality controls in farmer seed systems

13h15-14h45 Facilitator: Mariam Mayet
Gene banks and repatriation – Onismus Chipfunde (Zimbabwe National Gene Bank) 15 min
In situ seed banks and participatory processes – Niranjan Pudasiani (LI-BIRD, Nepal) 15 min
Experience with community seed banks and PGS systems –Noufou Koussoube (COASP Burkina Faso) 15 min
Commentary Godwin Mkamanga (BCI Malawi) 15 min
Discussion: 30 minutes

15h00-17h00 ***Stone Town shopping and spice experience***

Day 2 Thursday 22 August

Field visits: Two site visits, first to a farmer's field in Bungi, Zanzibar where seedlings are produced in greenhouse facilities. The second is to the Practical Permaculture Institute at Msim Farm, Zanzibar. Here participants will have the opportunity to enjoy locally prepared Zanzibari food at Msonge Organic family farm.

18h00-19h20 (Videos)
Cereal Renaissance in the field French with English subtitles
Cerere Project (not yet released publicly), Rete Semi Rurali

SEMILLAS ¿Bien común o propiedad corporativa? (Seeds: Common goods or corporate property) English subtitles
https://youtu.be/iUc45DS9eLU The Latin American Seed Collective

Community Seed Bank English subtitles https://youtu.be/moItlhtE-Mk LI-BIRD

Day 3 Friday 23 August

08h00-09h00 Facilitator: Riccardo Bocci
Check in, reflections and key issues arising from field visits and discussions on Day 1

PART III: MARKETS

Markets for diverse crops and seeds

09h00-10h45 Facilitator: Isidro Macaringue
African experiences *Andrew Mushita (CTDT Zimbabwe)*
Nametougli Batiyenkpeni (ADEJ, Togo)

Experiences from Brazil *Gabriel Fernandes (National Biodiversity Working Group, Brazil)*
Severina da Silva Pereira (farmer and activist, Paraiba State)
Sebastião Augusto Estevão (farmer and activist, Minas Gerais)

Commentary on informal markets and quality management - Louise Sperling (CIAT consultant) *Discussion: 30 minutes*

10h45-11h15 Tea

PART IV: POLICY FRAMEWORKS AND PROCESSES

Global and regional policy frameworks and support mechanisms

11h15-12h30 Facilitator: Charles Nkhoma
Global Guy Kastler (LVC) 15 min
Mariam Mayet (ACB) 15 min
Regional Justify Shava (SADC PGR Centre) 20 min

Discussion 25 minutes

12h30-13h30 Lunch

Identifying national policy frameworks, processes and support mechanisms

13h30-14h30 Facilitator: Bayush Tsegaye Gebrrmichel
Evelyn Mutetwa (Zimbabwe Dept of Agriculture Seed Services) 10 min
Lawrent Pungulani (Malawi Plant Genetic Resources Centre) 10 min
Graybill Munkombwe (Zambia National Gene Bank) 10 min
William Hamisy (Tanzania Plant Genetic Resources Centre) 10 min

Discussion 20 minutes

14h30-15h00 Tea

Priorities for further work

15h00-16h00 Facilitator: Sabrina Masinjila
Key priorities, gaps to be filled and avenues to take work forward

16H00 THANKS
EVALUATION AND CLOSE

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