

ABN

The African Biodiversity Network is a regional network of individuals and organisations seeking African solutions to the ecological and socio-economic challenges that face the continent.

NEWS

APRIL-JUNE 2014

new The scramble for Africa

CAUSE FOR ALARM:

African governments being arm-twisted by powerful multinational seed companies into passing laws that criminalise handling and sharing of indigenous seeds.



ALSO

THE QUEEN OF ARROWROOTS

Eunice Ngoki shatters the myths of arrowroot farming

FOCUS ON THARAKA

How the people of Tharaka are protecting its indigenous livestock varieties

SAVE THE SEED-FEED THE FUTURE

An NGO in Ghana is using community, seed and knowledge to revive their indigenous seeds

AGRICULTURE

The twine that interweaves the fabric of every day social relations

Seeds of sovereignty



This documentary shares the stories of African communities embarking on a journey to revive their traditional seed diversity, and take back control over their food systems. Forging a path toward a socially just, ecologically sane and sovereign future, they are courageously challenging the corporate, profit driven model of agriculture imposed upon them. This film is co-produced by The Gaia Foundation and the African Biodiversity Network in collaboration with GRAIN and MELCA Ethiopia.

WATCH IT HERE

<http://www.seedsoffreedom.info/more-films/seeds-sovereignty/>

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FOCUS ON SEEDS

LEAD ARTICLE



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CAUSE FOR ALARM

African governments being arm-twisted by powerful multinational seed companies into passing laws that criminalise handling and sharing of indigenous seeds.

Livestock (SEED) varieties in Tharaka



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A NOTE FROM THE EDITOR

Breaking away from the shackles of agri-business multinationals

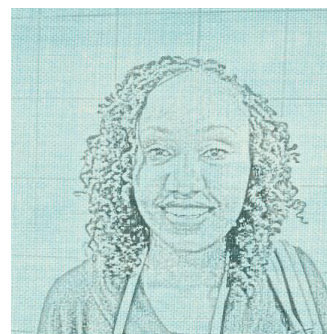


Without a doubt, seed sovereignty is the foundation of food sovereignty. As such, seeds must remain in the commons.

In this our maiden newsletter, our focus is on seeds. Our lead article, the new scramble for Africa highlights how agri-business multi national companies (MNCs) arm-twist African governments into passing laws that threaten food security in Africa (Page 9) . Our focus is also on the harmonisation of seed and trade laws across Africa that agro-business MNCs, at the expense of the rights of small holder farmers, save, sell and exchange their traditional seed varieties.

This edition, above all, celebrates the amazing work being done by different farming communities and organisations across Africa. We look at how communities are reviving lost indigenous seed varieties, how they are ensuring food sovereignty and how they are boosting income from agriculture.

Most important, we feature articles on how communities are protecting their eco-systems, reviving indigenous farming knowledge, which in a nutshell, are forms of resistance against the corporate capture of agriculture in Africa.



Ruth Nyambura
Advocacy and Communications Coordinator
African Biodiversity Network

SNIPPETS

SURVIVAL FOR THE FITTEST

African farmers have long understood that diversity means sustainability, the ability to survive. Within a community there will be a variety of food sources; the field crops, garden plants and the food gathered from forests and other wild spaces. Another important avenue of diversity is that which has developed between communities, as relationships of exchange and mutual support strengthened societies against hardship.

DID YOU KNOW?

Indigenous African plants have been used and adapted around the world, and today several crops that originated in Africa are staples of diets in other regions. African farmers domesticated sorghum, a particularly drought resistant crop which is the fifth most-grown cereal around the world today. Because of its ability to survive extreme dry conditions, sorghum feeds people who would otherwise struggle to grow food. Finger millet and pearl millet are now important cereals across Asia, and there is evidence that both crops had been transported from their native Africa to India as early as 2,000 BC (Carney, p.15). Pearl millet was bred from wild relatives in the Sahel region, while Ethiopia and Kenya were centres of domestication of finger millet, but these African crops have made major contributions to nutrition on other continents for thousands of years.

THE HUMBLE BANANA



The banana has a similar story in Africa. Brought from Asia up to 5,000 years ago, the banana plant resembled the ensette or 'Ethiopian banana', which was already a staple food in the region, and so farmers in Africa began to cultivate bananas too. Again they developed new breeds unique to Africa, adding greatly to the global genetic diversity of bananas.



BEAN STEW FOR SUPPER

Farmers in Africa have also adopted food crops from other continents and bred and developed them for their own purpose. The beans that you have for supper originated in South America. Today, Rwanda and also Uganda, are considered a second centre of diversity for bean plants in the world because of the specialised breeding the women have done there. With the women mixing and breeding their beans to flourish in their environmental niche.

FEEDBACK

Do you have any questions you'd like to ask or comments you'd like to make? We would love to hear from you. Email us on abnsecretariat@africanbiodiversity.org or write to us at African Biodiversity Network P.O. Box 6271-01000 Thika, Kenya. You can also interact with us on our facebook page [africanbiodiversity](https://www.facebook.com/africanbiodiversity) or follow us on twitter [@africanbiodiv](https://twitter.com/africanbiodiv)

SUCCESS STORIES

The Queen of arrow roots

In Ngurumo village, Ntakira Location in Meru Eunice Ngoki is known as the queen of arrow-roots. Eunice is a member of Meru Jitegemee group, started to work with the Institute of Culture and Ecology (ICE) in 2008. After trainings on agro-ecological farming and need to revive indigenous seed and crops, Eunice decided to specialise on arrow-roots in addition to other crops that had disappeared in the community.



There was a time that many believed that arrow roots could only be grown along river banks, but this was not the case for Eunice. With time, recognition of the health benefits of indigenous and traditional crops increased hence demand for these lost seeds rose. Eunice decided to specialise on the production of arrow-roots seeds in her community.

Arrow-roots have not only been part of her family diet but source of income too. With a small portion of land (60*100m) Eunice makes approximately Kshs.1600 (\$20) a week from the crop alone. This inspired her to grow other varieties of indigenous and traditional crops and vegetables surrounding her house in a small portion of land.

She has managed to feed her family with variety of nutritious foods from her farm and herself at her age she is still looking very hearty than most of women of her generation. She has endured the test of time, What is her secret? Indigenous foods!

With her inspiring story, Eunice's story tells that small holder farmers, through agro-ecology and their indigenous seed varieties can feed the world.

Small scale farmers like Eunice are able to produce a variety of food crops using little. In addition, small scale farmers operations typically utilize more sustainable methods than conventional industrial methods to maintain soil productivity and control pests. The common features are: reduced chemical pesticide, mechanical cultivation, biological pest control and use of organic manure. Small scale farmers sell their produce to local market. This promotes local food crops as well as knowledge on local food crops production.

Under food and community livelihoods programme in ICE, over 60% of the target beneficiaries are women. Through having the programme, their socio-economic status have been improved as a result of having enough and diversity foods to feed their families. This is because women are more affected than men by hunger and malnutrition.

Therefore, in the international year of family farming, we must reiterate that there can be no food sovereignty without seed sovereignty! Protect our traditional seed varieties!

Read more about ICE how is working with communities to achieve food security and sovereignty on page 18

NUTRITIONAL FACTS ABOUT ARROWROOTS

- For the weight conscious, arrowroots are very low in calories.
- Arrowroots are free from gluten, making it ideal for people who are gluten intolerant.
- 100 g arrowroot provides 84% of daily required levels of folates.
- Arrowroot contains very good levels of B-complex group of vitamins such as niacin, thiamin, pyridoxine, pantothenic acid and riboflavin.

- Arrowroots contain moderate levels of some important minerals like copper, iron, manganese, phosphorous, magnesium, and zinc.
- Arrowroots are an excellent source of potassium. Potassium is an important component of cell and body fluids that help regulate heart rate and blood pressure.



The Revival

Saving the Ankole Longhorns of Uganda

In many places around the world, introduced breeds and varieties are promoted with the promise of high yields. But when a community reflects on their past and their opportunities, they are likely to see that high yields may not compensate for the high costs of external inputs such as extra medicines, for the loss of taste and nutritional value, or that of the cultural value associated with the crop or breed.

In Uganda, there is a grim realisation that along with the loss of the Ankole Longhorns, cultural traditions and indigenous knowledge about animal breeding are also disappearing. There has been a spirited effort to re-educate the local people about the importance of ensuring that the Ankole Longhorn does not become extinct.

Source

Via Agri-Cultures Network - http://www.agriculturesnetwork.org/http://www.agriculturesnetwork.org/magazines/global/cultivating-diversity/valuing-indigenous-breeds?utm_source=mag-mar-2014&utm_medium=Email&utm_content=Ankole-cattle&utm_campaign=30-1

5 amazing facts about Ankole cows that you (probably) didn't know

1 Their horns can grow to 8ft long. The horns are extremely useful because they assist the cows with their blood circulation. The horns also keep them cool in hot weather.

2 The cows weigh between 410 kg to 730 kg while the bulls weigh between 540kg-730 kg

3 The Ankole Longhorns are probably one of the oldest indigenous species in the world. It is thought that they are a cross between two different breeds of cattle that migrated to East Africa around 1000 BC.

4 They have a lifespan of up to 20 years. This is so because they rarely fall ill and they can withstand drought and extreme weather conditions.

5 Their dung, urine and even milk are used for various medicinal purposes.

Read about what RIDEP is doing to save indigenous cattle in Tharaka on page 13



Ghana says **NO** to the adoption of the Plant Breeders' Bill

Farmer, labour unions, religious, political and civil society organisations took to the streets of Accra on 28th January 2014 to demonstrate against the adoption of the Plant Breeders' Bill that is before the Parliament. The Bill is based on UPOV 1991, and following its adoption the Ghana government intended to ratify and become a member of the 1991 UPOV Convention. Farmer and civil society groups have expressed serious concern over the lack of public consultation, the content of the Bill (in particular the undermining of farmers' rights and facilitating the entry of GMOs), and Ghana's intention to join UPOV 1991. Civil society petitions and street protests have resulted in the Bill being referred to "the leadership of the House" for reconsideration."

Source

Association for Plant Breeding for the Benefit of Society (APBREBES) - <http://www.apbrebes.org/>

<http://www.apbrebes.org/news/massive-protests-ghana-over-upov-style-plant-breeders-bill>

RAINS is an NGO that works with communities in Ghana. Through the ABN sponsored Community Seeds and Knowledge programme, they have been educating communities on seed selection, preservation and maintenance. Read their story on page 9.



Kenya: The Crops Act A hidden agenda?

The Crops Act of Kenya, 2013, regulates which crops can be cultivated for commercial purposes and what the regulatory burdens are, for those that want to enter the commercial market. This creates an exclusive commercial market for only the elite farmers who are able to comply with what the system demands of them.

In addition, The Seeds and Plant Varieties (AMENDMENT) Act, 2012 has provisions on seed certification aspects especially, plant variety listing and some very far reaching powers for seed inspectors. It is very clear that there is pressure to put in place laws to ensure seed purity and quality and that seed production is very tightly controlled (in other words, farmers will be engaged to bulk up seed and they will want to ensure that this seed is derived from the seed that has been listed in the national plant variety register and nothing else). The making of regulations for performance trials will no doubt exclude the participation of small farmer who are out of the commercial seed production systems.

There are provisions on the amendment Act that applies to the development of guidelines for GMOs -and the seed bulking of GM seeds and it is obvious that the implications farmers, agricultural biodiversity, the future of farming systems and the like are in great jeopardy.

The *new* scramble for Africa



The second scramble for Africa is definitely with us. Africa is being shared up once again, a perfect replay of the Berlin Conference held between 1884 and 1885. However, there are salient differences between the two scrambles for Africa, both of which have been used by western countries to justify their illegal take-over of Africa. GATHURU MBURU writes.

In the (in)famous Berlin Conference of 1885, Africa was dubbed as a dark continent which needed salvaging from itself, by bringing light to the continent. The God-sends did not involve or inform Africans of the decisions to share up their territory. The west has today dubbed Africa as idle land, which needs to be excited into activity to produce food for Africans. Today, however, elected African leaders are the key players in the scramble as they play a very dangerous facilitative role.

African communities basically survive on bio-diverse resources, including crops and animals. Production in Africa is primarily small scale in key life-sustaining sectors that feed over 80% of the continent's peoples. Most farmers produce on a small scale. Livestock production is also small scale for most pastoralists, while fishermen catch few fish with their unsophisticated gear. Africa's hunter-gather communities work very closely with nature and the artisanal mining has hardly caused any serious environmental impacts. This character of Africa's civility in survival is the target of new-day scramble, as the continent is viewed as a gigantic unexploited resource.

The new scramble is being manifested in many ways but the most outrageous is the resource take-over, which is being referred to as foreign investments. This is happening in vital resources of forests,

grasslands, farmlands, seeds, water, and the new found minerals – all of which are leading to massive land grabs across the African continent.

For the small scale farmers of this continent, our governments are being arm-twisted by powerful multinational seed companies to pass laws that criminalise handling and sharing seeds that communities have saved and shared since the beginning of their time.

The Seed and Plant Varieties Acts are being aligned to the injurious requirements of UPOV 1991; these same laws are being harmonised regionally, with the aim of having a continental law on seeds; Biosafety Acts in several countries in Africa are designed to allow genetically modified organisms into the countries, and they are also being harmonised to allow easy flow of genetically modified foods and seeds in the continent. Clearly, the sovereignty of the continent of Africa is once again under siege.

The above laws are an affront to food sovereignty of the continent, an ideal that small scale producers (small scale farmers, pastoralists, fisher folk, hunters and gatherers) – have held dear for a long time, and which has provided food to over 80% of Africa's

peoples. The same laws are taking away the responsibility of African peoples to feed themselves, and giving it to multinational companies whose key interest is to make profits.

As the adversaries strengthen their resolve to illegally take over the lifeline of Africa's peoples, it is incumbent upon African communities to organise and consolidate their struggles to protect the resources of the continent for posterity. It is widely believed that Africa is the least prepared continent to face the vagaries of a changing climate.

Protection of the resources of the continent by the people themselves is the greatest preparatory and adaptive action that communities can take together. The farmers must protect their seeds and soils, pastoralists must protect their animals and other rangeland resources, fisher folk must protect their fish and other aquatic resources, hunters and gatherers must protect their bio-diverse wild resources.

Africa's grassroots movements must go out to reclaim, liberate, use, protect and share locally the resources of the continent for true food sovereignty to be realised.

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Community, Seed and Knowledge



The United Nations inter-governmental panel on Climate Change (IPCC's) recent report highlights the level of vulnerability of countries globally, and especially in Africa, to the adverse effects of climate change. The 'green revolution' "is leaving agriculture vulnerable to climate change, and that new approaches are urgently needed to enable food systems to adapt.">>>>

Save the seed, feed the future

This article shares the work of RAINS and its experiences in Northern Ghana with hundreds of smallholder farmers' in local communities to revive their indigenous seeds as well as endogenous farming practices that continue to enable farmers to feed many households and improve their livelihoods, even in the midst of serious climatic changes that they are witnessing,

writes MOHAMMED KAMEL DAMMA.

At the heart of the 'green revolution' is SEED. The seed diversity of many African countries including Ghana is seriously under threat. They are being replaced by the more preferred 'certified and hybrid' seeds and thus many indigenous seed varieties are facing extinction. The rich knowledge to adapt to the effects of Climate Change on agriculture by smallholder farmers, most of them women, passed from generation to generation is being replaced by 'new' approaches to enable food systems to 'adapt' to climate change.

Community, Seed and Knowledge

The Community, Seed and Knowledge (CSK) initiative was first piloted in Zoosali and later scaled up to 4 other farming communities, in the Savelugu-Nanton Municipality of Northern region of Ghana. The initiative was RAINS' and the communities response to reviving the communities own knowledge and indigenous practices to adapt to Climate Change. The Community, Seed and Knowledge initiative highlights the role of women in indigenous seed selection, preservation and maintenance through also exchange and sale. The communities have been supported by RAINS to lead an 'exploration' involving all the aspects



Above: A farmer examines his bambara seed during an exchange visit that touch on their farming systems but most importantly, rediscovering indigenous seeds in line with their current context and that is most relevant for ensuring their food sovereignty.

The CSK is addressing the urgent need for farmers to understand the causes and effects of climate change through capacity building and increase resilience of smallholder farmers to impacts of climate change based on the already existing local knowledge. RAINS has worked with smallholder farmers in Zoosali; Yilikpani; Kpachelo; Langa; Tindang in Northern region of Ghana. In these areas, the women farmers constitute an approximate 80% of all the small-holder farmers and thus special attention is played to them; not as 'problems to be solved and lacking in agency', as has become

the norm in food security initiatives, but rather as knowledge holders and solutions providers, who only need to be accompanied in the great work they already do, of protecting our seed sovereignty and by extension food sovereignty.

Identification of indigenous seeds

Central to the CSK initiative has been efforts to accompany farmers to analyze and understand their food systems. Indigenous seed varieties developed over the years by the farmers themselves have clearly shown themselves to be better adapted to local conditions and the environment, and have also ensured household food security because of their diversity and resilient to changing climatic conditions. With colonization, seed diversity was abandoned while monocultures and production system geared for the market only, at the expense of feeding the people was and still is privileged, in not only Ghana but in every corner of Africa. Most Smallholder farmers through thorough analysis of their situations identified variety of local crops they have in past have secured households against food insecurity.

The crops these communities identified have included; bambara beans, cowpeas, sanze, bungu, pigeon pea, sorghum, late millet, yellow maize,

Talking Point

"Rainfall was a major challenge for most of us, and we feared most of our crops would fail, however I was able to use the knowledge acquired from community elders to conserve some amount of water to enhance the growth of my Bambara beans."

-Abuyama Braimah of Yilikpani community responding to how she has benefitted from these trainings.

cassava, sesame, bulbibera yam, neri, pena (frafrapotatos), agusi (akata), sweet potatoes, rice, simpie, sapiriwa and dua.

The entire farming cycle is also taken into consideration seasonal weather forecasting and land preparation, planting and planting materials, cultural practices (mulching, zero or minimum tillage, weeding); harvesting and storage have been catered for by CSK and the holistic revival of local knowledge systems of the people.

Participating in each of these modules increased farmer's knowledge in good agronomic and climate smart practices. With such knowledge, farmers were able to use the knowledge to enhance the growth of crops through revival of indigenous seeds. For example, ploughing across slope (contour ploughing) and zero or minimum tillage are acts of conserving water, whereas mulching also support and promote soil nutrients.

Farmers are hopeful the next season will be a productive one, because the season will provide another opportunity to use or apply all the knowledge acquired from their communities, as part of the initiative is support to smallholder farmer to cultivate 200 acres of land using indigenous seed varieties. The idea is to promote the use of indigenous seed in rural communities, which are considered more nutritious than hybrid varieties and also meet the dietary needs of rural folks. These varieties are also to a large extent considered 'climate smart'; as



Above: Harvested cowpeas

they possess qualities such as drought tolerant; early maturing and high/better yielding in a holistic sense.

RAINS has given support to 200 smallholder men and women farmers to cultivate and revive a number of indigenous crops in five communities within the Savelugu-Nanton Municipality.

A significant number of farmers have reported a substantial increase in yields as compared to previous yields. According to Fusiena Mahamadu of Zoosali community, "I have embraced the approach proposed by RAINS and our community over the years; one that has improved the food and economic situation in my family. My children have enough to feed on this year and I have stored some of my farm produce for next year".

The CSK initiative is basically about using indigenous knowledge to facilitate agricultural activities in rural communities. As such, the initiative has brought back to communal farming the use of bullock traction method. A method that maintains moisture and nutrients in the soil for effective plant growth. It appears this method of ploughing now much preferred by most farmers. Over the last year, farmers have used this approach and have expressed satisfaction in the use of bullocks for ploughing purposes. With all the knowledge acquired, each farmer obviously understands and utilizes the trainings in a unique manner from another. As such RAINS facilitated learning and exchange visits to promote cross learning to enable farmers to

share experiences on how each of the knowledge acquired is done differently from another community.

During this exchanges, farmers have the opportunity to visit the farms of the host community, observe closely and advised if challenges are identified the best practice to resolve such a challenge. It is a useful exercise to promote knowledge sharing and ways to improve agricultural activities of rural communities. Most farmers are able to learn quickly when such learning opportunities are led by fellow farmers. Over the years visits of this nature have encouraged learning among smallholder farmers, and farmers are hopeful that this will continue to ensure an increase in productivity. Evaluation of the project indicated about 80% of farmers have increased knowledge about climate change and enhanced capacity to adapt to impacts of climate change. An equal percentage of farmers have also recorded an increase in overall yields, better nutrition at the household and community level as a result of the CSK initiative with the next step being consolidating these gains and translating them into economic gains. In effect farmers are gradually shifting from the conventional practices to a more holistic and sustainable – agro-ecological way of farming in the Savelugu-Nanton Municipality.

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Using Tharaka culture to protect indigenous livestock (SEED) varieties



A seed insecure community is a food insecure community with a susceptible. Tharaka born ZACHARY CHABARI explains that since time immemorial, the people of Tharaka have had a close link to livestock, respecting all the animals and observing certain rules and rituals to safeguard and protect not only domesticated animals but even the wild ones.

Back in the day, a hunters could never shoot an animal while it was mating; he had to wait until the animals finished mating in order to try his luck, kill a suckling animal either alone or together with a young one as this was an abomination to the family of the hunter and the larger community.

The value of the Indigenous Animal Seed in Tharaka

The Tharaka ceremonies (circumcision, dowry payment, rain offering, land purification) require animal blood. Specifically, during the circumcision ceremony; the circumciser, friends and relatives of the one getting circumcised as well as the one getting circumcised was given a goat during the ceremony. This was a mandatory requirement, without which, the ceremony would be considered incomplete. The men received a goat referred to as Ndumo and just like all the other goats given, it was an indigenous breed.

At the dowry payment, the man is required to kill a goat to mark the process and it is done at the girl's home. In the place where a full goat is not killed, a goat of a choice has to have one of its ear's cut (at the edge) and to mark the process. This process is called *Kuuragiira Mburi*.

Challenges facing the animal seed

Non indigenous livestock varieties commonly referred to as "grade" animals were introduced in Kenya during colonisation and after independence; it became clear that the government agricultural policy favoured grade animals over indigenous varieties. These animals were touted as being high milk producers, maturing faster, needing very little resources in addition giving to better quality meat. This was and still is the same narrative that has been spread not only in Tharaka but throughout Africa, completely disregarding the fact that in many areas of the continent, the weather is extremely brutal, with Tharaka as an example being a generally dry area, and that in order for any animal to survive, it would have to be very well adapted to the climate – including pests and diseases.

Grade animals have been a complete disaster in Tharaka and the farmers who made huge investments in them, hoping for great returns, have suffered huge losses and have had to go back to raising indigenous varieties of livestock; which are well adapted to the local conditions in Tharaka, thus ensuring food security in terms of providing local dietary needs for meat and milk, financial benefits when sold and/or exchanged in local farmer markets. More importantly, the indigenous breeds fulfill the cultural requirements required during different traditional ceremonies.

As a result of the lack of support by from the government for keeping of these indigenous varieties; there is intense

pressure to do away with these animals with claims that there is no space and pasture land for their upkeep. In addition, land degradation in an already dry areas is a huge problem and the best available land is allocated to conventional farming methods at the expense of pastoralism in Tharaka. A balance needs to be struck between farming and priority must be given to agro-ecology rather than conventional farming, and livestock keeping. There should be increased efforts to reclaim grazing lands so as to enable farmers to keep more animals.

RIDEP's efforts to support the reclaiming of Indigenous Livestock Seed in Tharaka

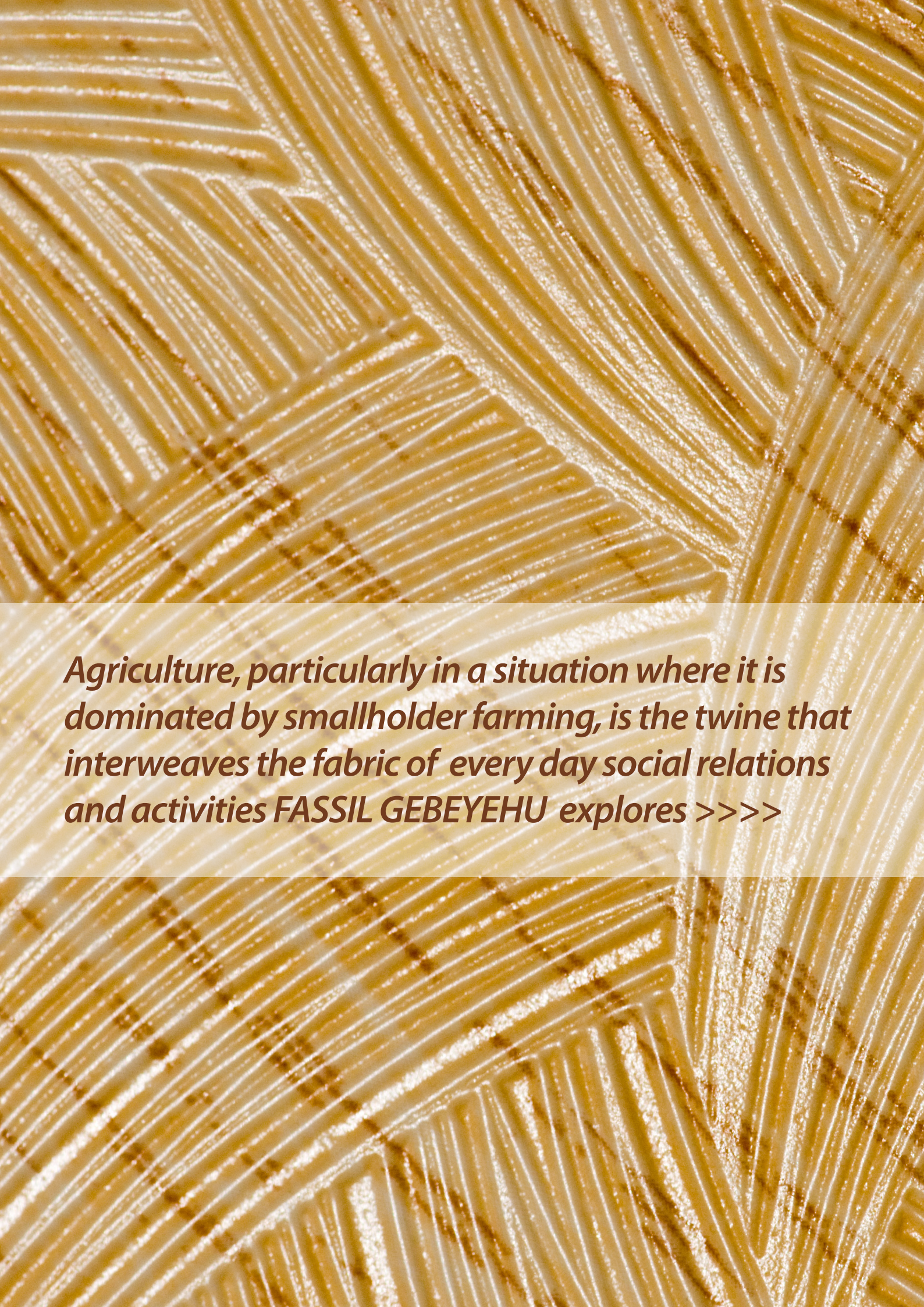
With consideration to the issues raised and other challenges facing indigenous livestock keeping in Tharaka, RIDEP and groups of farming communities are working to protect this important seed biodiversity through an initiative learnt during the networking forums at the African Biodiversity Network (ABN), which is the Holistic Livestock and Land Management Practice (HLLM). This approach mainly employs use of animals to reclaim degraded land and thus bring back lost pastureland.

RIDEP is also working with local communities in Tharaka Nithi County to promote food festivals and revive dying cultural ceremonies as well as aggressively promoting traditional practices that are still observed within the Tharaka community. This is done via integration of intergenerational learning, focusing on one of ABN's thematic focus areas, Youth, Culture and Biodiversity (YCB); in all the current projects and programmes within the community. The elders play a central role in these ceremonies and festivities and in line with the Tharaka culture, indigenous animal breeds and indigenous food and seed varieties are the only ones that can be used as they have deeply symbolic meaning to the community.

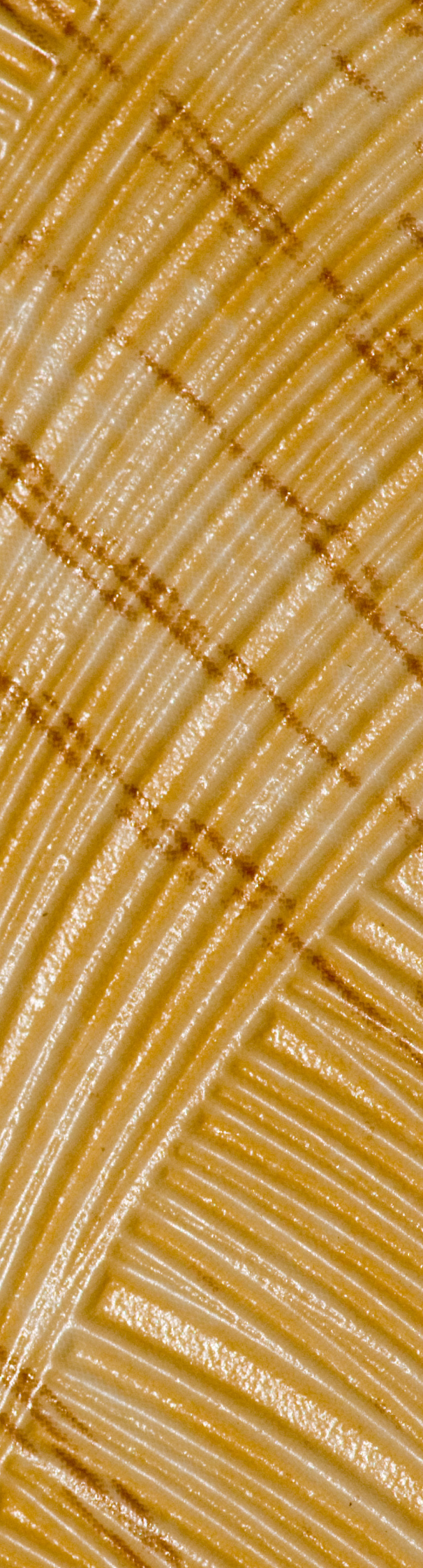
Chabari was born, raised and educated in Tharaka-Nithi County, where he still lives. He is the Founder and Director of Rural Initiatives Development Programme (RIDEP), an organization he founded in 2006. He has over 20 years experience in field of community development, focusing mainly on sustainable farming and value market chains for small-holder farmers.

About RIDEP

Rural Initiatives Development Programme (RIDEP) is a community based organisation (CBO) working with small holder farmers in Tharaka-Nithi County of Eastern Province in Kenya.



Agriculture, particularly in a situation where it is dominated by smallholder farming, is the twine that interweaves the fabric of every day social relations and activities FASSIL GEBEYEHU explores >>>>



Acknowledging the contribution of small-holder farming and perception of its productivity

The importance of explaining the leading role of agriculture is two fold. First is the fact that agriculture is the source of food and raw materials for industries so that any harm imposed on this sector would influence not only development but also life on Earth. The second point is that the main resources of this sector such as soil, water, and seed are increasingly becoming vulnerable to manmade and natural threats.

The foundation of farming system in sub-Saharan Africa has been evolved in adaptations of a wide range of climates, soils and labour in which traditional technologies are used according to diverse contexts. Most African farmers often engaged in a range of farming activities from clearing of land, preparation, seeding/planting, fertilisation, weeding, use of animals, labour, supply of fodder etc. to a complex set of social relation which supports to sustain their practices. This implies the fact that agriculture, particularly in a situation where it is dominated by smallholder farming, is not as such distinct domain of production; rather, it is interwoven in the fabric of everyday social relations and activities. For small holder farmers in particular, seed is not only for current consumption and future food security but it also provides guarantee for reliable maintenance of culture and history. It is '...the first link in the food chain...is the ultimate symbol of food security...' (Shiva and Krishnan, 1995).

National and global development policies promote high input technology/market based agricultural interventions which have led to the marginalisation of local farming knowledge. Promotion of the so called 'modern/improved seeds' has been associated with high input, top down and technocratic agricultural systems that increasingly threaten knowledge and practice related to cultivation of local varieties of seeds. Evidence from Southeast Asian countries including Indonesia, Malaysia, India, Thailand, Taiwan, Korea and China (Binswanger and Deininger, 1997) shows smallholder agriculture have been significantly contributing

to economic growth, conservation of natural resources and genetic conservation of seed diversity. With respect to ensuring the continuity of crop genetic diversity, it seems that researchers may need to have further exploration of a wide array of farmers' crop diversity which provides a range of options in ranges of ecological settings.

Farmers' seed varieties are immense sources of the world's food diversity and the loss of these varieties would be resulted in extreme hardship to both global deprivation of diversity and loss of productivity and resilience to the poor in the third world countries. It is concerning to see the tradition of growing seed diversity, which is maintained and practiced by smallholder farmers are at risk while they are supporting life of large portion of humankind all over the world. Shiva (2000) explained that for many centuries, farmers of the Third World provided a great extent of diversity of seeds and plants from which consumers are getting nutrition they need. Evidence from India can be an example in which Indian farmers alone have bred and maintained 200,000 varieties of rice. This shows the fact that seed diversity may provide better option for food security particularly in the context of increasingly vulnerable bio-physical and agro-ecological climatic conditions.

In most cases of Africa, the long term practices of intercropping and cultivar mixtures proved to be an excellent defence against biological and climatic hazards to crops. For example, amongst many smallholder African farmers Rwandan farmers often grow up to eight different potato cultivars, bananas, beans, and sweat potatoes at once within farming fields (Brokensha and Little 1988). This mixed cropping then found to be advantageous in terms of

getting use of different traits as disease and pest resistance, tolerances of rainfall excesses and deficits, marketability and so on. In the context of modern agriculture, the main focus is maximising productivity through high-yielding varieties and high input mechanism. Hence, one can see that the trend from modern agriculture is dominating the small-scale, diversified, and context based agricultural system. This implies the fact that relying only upon mono-cropping and new technologies would cause potential risk in terms of unintended long term effects of hybrid/modern seed varieties particularly in a situation where they replace the ecologically evolved and genetically diversified local varieties.

For most governments, productivity is the issue of priority so that they advocate modern (high-yield) seed varieties so as to ensure food security. From a practical perspective, the perception of productivity by governments and advocate researchers lies only on the masses of grain yield and other important aspects of productivity is overlooked. However, it should be noted that the life of small holder farmers is not only about consumption through the physical net production but also their social, cultural and spiritual needs to be fulfilled by diversity of seeds. On the other hand, the aim of agriculture in the context of smallholder farming is not only to maximise yield but to reduce risk through ensuring stability and sustainability of production system. In this vein, one can argue that agricultural growth in smallholder farming can be possible only if multiple aspects of farmer's experiential knowledge as well as context specific socio-cultural and environmental factors are considered rather than being dependent on imported ideas, technologies and associated resources.

"Amongst many smallholder African farmers Rwandan farmers often grow up to eight different potato cultivars, bananas, beans, and sweat potatoes at once within farming fields."



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THE LAST WORD

Reviving lost seeds and crops:

Hannah Kigamba shares ICE's strategy for achieving food security and sovereignty



About ICE

The Institute for Culture and Ecology (ICE) is a national indigenous non-governmental organisation in Kenya. ICE was founded out of a visible need to promote the inherent and natural role of culture in environmental and resource management in Kenya. ICE accompanies communities as they rediscover the value of local knowledge and naturally endowed resources/potentials in the processes of livelihoods improvement and environmental conservation. This enables communities to drive their own development hence detach themselves from the poverty cycle. In the last seven years, ICE has been working with community groups and schools in Tharaka Nithi, Machakos, Meru, Nairobi and Kiambu counties in Kenya.

Indigenous crops have provided communities with a nutritious diet for thousands of years. The Institute for Culture and Ecology (ICE) has been working with small holders farmers in reviving indigenous and traditional crops variety in order to diversify crops variety for both food security and sovereignty. This has gone a long way in reviving local indigenous knowledge which has been neglected as a source of human capital and more importantly, as an integral pillar in enhancing food sovereignty, promoting gender equality, and maintaining biological diversity, as well making boosting the resilience of communities battling climate change.

Making the process easier and replicable

Through working with groups in rural communities, ICE has employed simple and easy strategies of reviving indigenous seeds and crops. This is done through seed mapping; where farmers research on available seeds and crops and status in their respective communities with the help of local elders, especially old women who are known to be the custodians of seeds in these communities. Farmers then initiate a process of seed exchanges among members in target communities who then multiply these seeds by planting and sharing a certain percentage of what is harvested to other community members. Farmer to farmer are organised periodically enhanced to provide platforms for farmers to learn from each other on planting, growing, harvesting and post-harvest handling of these seeds. Seeds and food fairs are also held to create awareness and promote indigenous seeds and crops to the larger community.

Key results of the intervention

Through working with communities in Meru, Kiambu, Yatta, Masinga and Tharaka-Nithi sub-counties in Kenya, farmers have managed to revive variety of crops/seeds. Some of the most important crops varieties revived and that that were disappearing include; Tubers (cassava, arrow-roots, sweet potatoes and yams), cereal (sorghum, millet, pigeon peas, cow peas, dry beans, green grams and groundnuts) fruits (bananas), vegetables (amaranth (terere), *solanum ptedocapsicum* (managu) and pumpkins.

Despite the challenges of changes in the climate over the years, the farmers and communities that ICE works with have enhanced sufficient food basket at family level and surplus is being sold in the local market, thus boosting their income.

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April 17th
International Day
of farmers struggles in defence
of peasants and farmers seeds



**We stand in solidarity with all the farmers
and peasants in the world in defense of our
indigenous seeds.**



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