

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

JANUARY - MARCH 2016

Smallholder Farmers Quest for Food Security

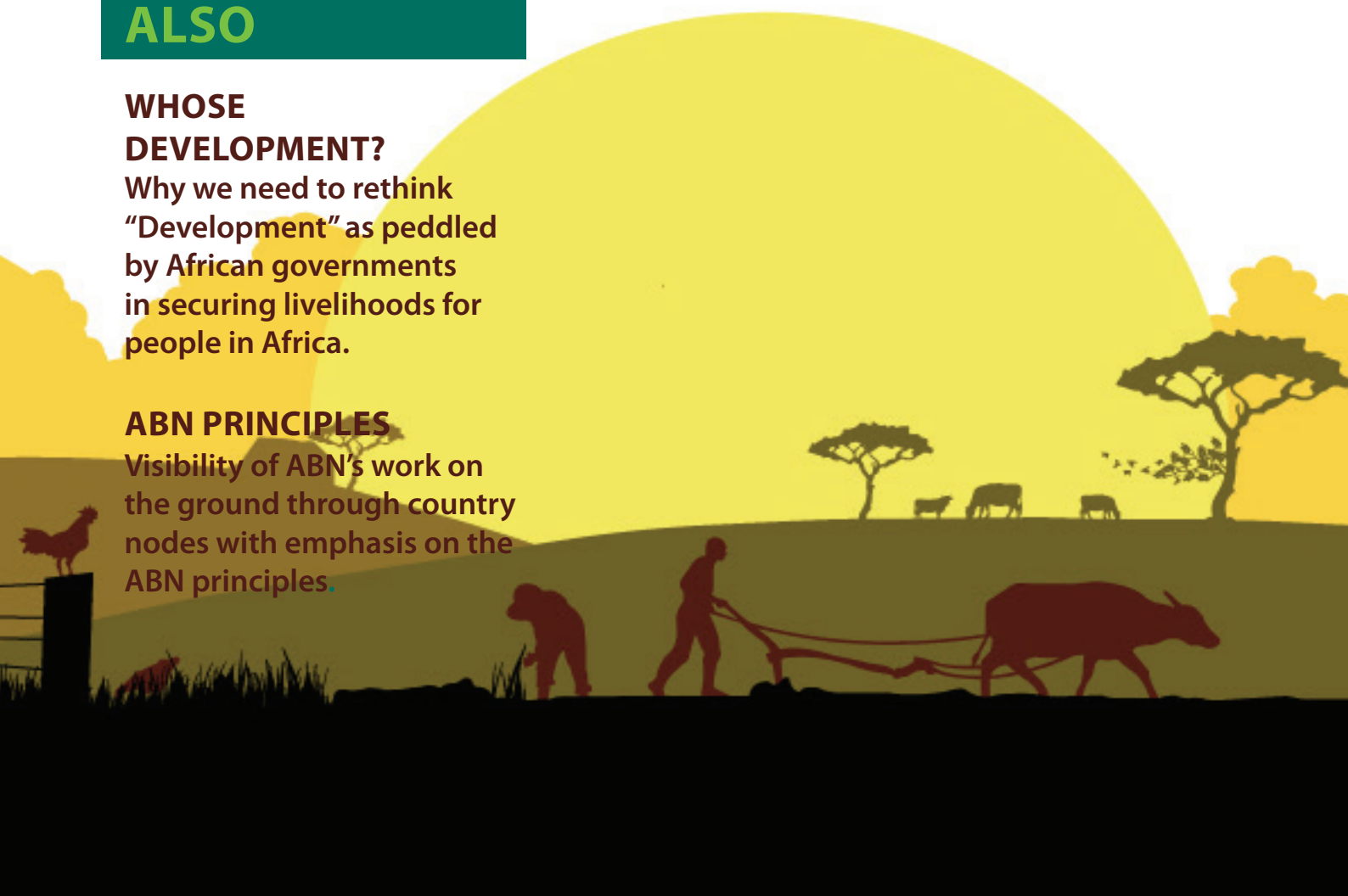
ALSO

WHOSE DEVELOPMENT?

Why we need to rethink
“Development” as peddled
by African governments
in securing livelihoods for
people in Africa.

ABN PRINCIPLES

Visibility of ABN's work on
the ground through country
nodes with emphasis on the
ABN principles.





The future belongs to us,
because we have taken
charge of it. We have the
commitment, we have the
resourcefulness, and we have
the strength of our people to
share the dream across Africa
of clean water for all.

- Ellen Johnson Sirleaf

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Brot
für die Welt



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Editor's Note



In industrial countries, modern agriculture with its yield maximising high-input technologies generates environmental and health problems that often do not serve the needs of producers and consumers. Agriculture must be conceived as an ecological as well as a human dominated socio-economic system.

Agricultural challenges have evolved from technical to also include social, cultural, economic, and particularly, environmental concerns. The agro-ecological approach is more sensitive to the complexities of local agriculture, and has broad performance criteria which includes properties of ecological sustainability, food security, economic viability, resource conservation and social equity, as well as increased production.

One of the African Biodiversity Network's principles recognises the devastating impact of colonisation and industrialisation. ABN accompanies communities in a patient, non-prescriptive and potent way that draws particularly on the knowledge of elders towards deep level transformation. To achieve this, ABN, through its Partners, accompanies, encourages and supports farmers to participate in the formal seed supply sectors, including their traditional knowledge in seed selection, saving and exchange.

Women in most African traditions have played a central role in selecting, storing, and enhancing the diversity of their seeds. To produce food for their families in varying conditions, they developed a sophisticated capacity to understand their ecosystem and the climate, making very accurate calculations as to what to plant in the coming season.

Regionally, the African Biodiversity Network's Partners are working towards increasing the capacity of small-scale farmers to acquire skills and knowledge in agroecology and amplifying issues that arise from it locally, nationally and internationally with support from ABN's donors and other networks like AFSA and the Gaia Foundation who mainly amplify our work at the international level.

Finally, agro-ecological practices have been in existence for years where farmers, particularly smallholder farmers, are engaged with the context based agriculture guided by the Law of Nature, diversified cultures and based on diversity of food systems.

Karen Nekesa Samukoya
Communications and Advocacy Officer, ABN

Snippets



THE TREE OF LIFE

The baobab tree (*Adansonia*) is native to Africa, Arabia, Australia and Madagascar. Rich in vitamins and calcium, its fruits can be eaten raw, be used to prepare baobab juice, candy and jam, or thicken soups. The bark of the tree is used to prepare mats, baskets and ropes while the leaves and roots have medicinal properties.

KONSO AGROECOLOGY HERITAGE

The Konso people inhabit the southwestern part of Ethiopia in the Southern Nations, Nationalities and Peoples' Regional State (SNNPRS). Inhabiting a region that is rocky, the Konso are a resilient people who have incorporated indigenous knowledge to thrive in harsh terrain. Of note is how they have utilised the rocky nature of their lands to build terraces thus reclaiming fertile agricultural lands.

DIVERSITY MATTERS

"With the loss of diversity you lose your security. Because, diversity is synonymous with security. It also means improved livelihood. It means improved nutrition. It means improved division of labour. All this would be lost to one crop." - **Dr Melaku Worede, Ethiopian plant geneticist and Right livelihood Award winner**

ROOTS AND CULTURE

Strong linkages, more so at the country level, are essential for scaling up on the activities of the African Biodiversity Network. Such linkages will complement continental and international linkages as the ABN principles will be realised at the grassroots as individuals and Partner organisations 'go back to their roots'. This is in recognition that African people are inherently linked to their roots via strong attachment to their villages.

ON COMMUNITY ECOLOGICAL GOVERNANCE

Community Ecological Governance (CEG) is a term used to describe traditional or customary governance systems rooted in the laws of Earth. CEG understands Sacred Natural Sites as places where the laws of Earth can be read, and from which customs, spiritual practices and governance systems are derived to protect the territory as a whole and maintain its order, integrity and wellbeing. Elders play a vital role in upholding the ecological knowledge and customs, practiced over generations, which maintain the wellbeing of Sacred Natural Sites, ecosystems, territories and local communities. CEG continues to contribute to the emerging philosophy and practice known as Earth Jurisprudence or Earth Law.



INDIGENOUS KNOWLEDGE

As cities expand and populations grow, vulnerable individuals and families have to increasingly turn to ingenious methods such as peri-urban farming (kitchen gardens) for food security and generation of income towards other household expenditure. To capitalise on this, indigenous knowledge sharing on seed is vital as indigenous crops are highly nutritious and their demand is high at the market place.

SOUTH AFRICA AT A GLANCE

Official name: Republic of South Africa

Area: 1,221,037 km² | 471,443 sq mi

Capitals: Pretoria (administrative); Cape Town (legislative); Bloemfontein (judicial)

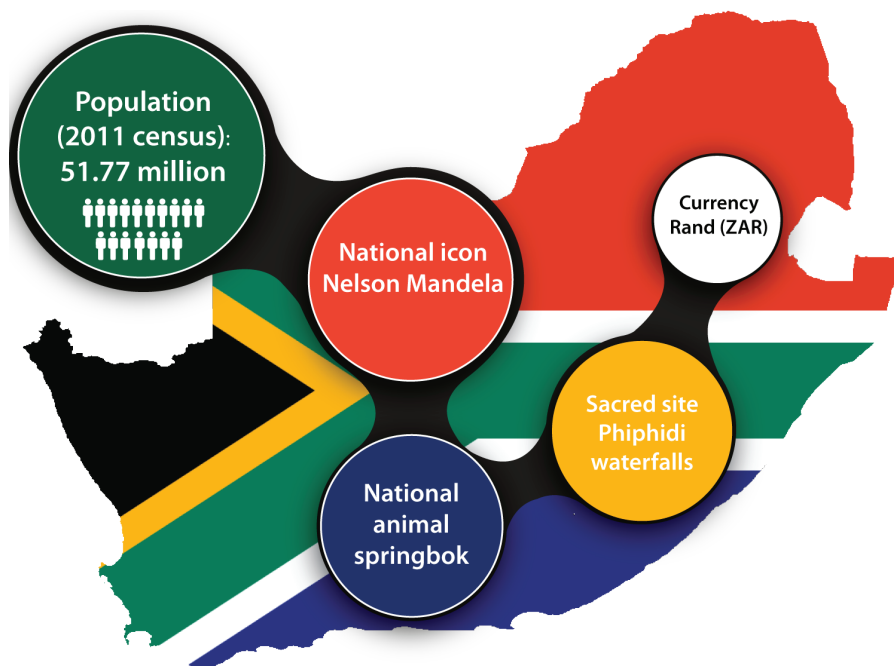
Form of state: A federal state, comprising a national government and nine provincial governments

Population (2011 census): 51.77 million

Currency: One rand (ZAR) = 100 cents

Internet domain: (.za)

Official languages: Afrikaans, English, isiNdebele, isiXhosa, isiZulu, Sesotho sa Leboa, Sesotho, Setswana, siSwati, Tshivenda, Xitsonga



Africa is under threat; neo-colonialism, industrialisation, mechanisation at the farm, genetic engineering and the attendant commodification of seeds... in the guise of development. However, with food sovereignty for the people in Africa tied to smallholder farmers who inform the bulk of food production, it is high time governments re-evaluated their strategy as far as the smallholder farmer is concerned.



AN INEXACT SCIENCE

Genetic engineering is completely different from natural breeding and entails different risks. The genetic engineering and associated tissue culture processes are imprecise and highly mutagenic, leading to unpredictable changes in the DNA, proteins, and biochemical composition of the resulting GM crop that can lead to unexpected toxic or allergenic effects and nutritional disturbances.

www.earthopensource.org

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 at 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 at African biodiversity or follow us on twitter @africanbiodiv

ABN News is published by the African Biodiversity Network. We acknowledge our Partners for contributing articles and stories towards the success of ABN News as a strong advocacy mouthpiece.

ABN PRINCIPLES



Visibility of ABN's Work on the Ground through Country Nodes with Emphasis on the ABN Principles

Sustainability for ABN as a platform advocating for cultural and ecological diversity for people in Africa lies in establishing country nodes wherever its Partners are. JOHN WILSON elucidates why doing so augurs well for 'going back to roots' by enhancing local, regional, continental and international linkages.

At the ABN Partners' meeting in June I was honoured with being made an ABN Elder, a 'ceremony' that mixed good fun with a serious streak.

I have been involved with ABN since 2007. It took a number of meetings and years to begin to understand what ABN is all about. I don't claim that I fully understand now but I have had the privilege to be part of many discussions about ABN and to see 'ABN work' on the ground in a number of different places.

Quoting from the ABN 2012 Evaluation, I think that "ABN offers a unique, very African, approach to sustainability and community resilience, rooted in traditional practices. The premise is that cultural and ecological diversity are intricately bound together and that only through restoring people's strong and deep sense of connectedness to Nature and all that lies within it will people in Africa find ways to be resilient and to sustain their land and their natural resources."

I believe that there are many people across Africa, despite the ongoing onslaught of the 'Western/industrial' way of life and values, who empathise with what ABN stands for. I would also love to see ABN sowing seeds for its own longer-term sustainability. We discussed this at a follow-up meeting in November and concluded that this ability to keep going into the future would/could hinge around establishing something along the lines of country nodes; and perhaps, especially in big countries, taking that further to a more local e.g. provincial or equivalent level.

ABN has been finding its way for more than a decade now. It is on the map. It has found and linked up a band of empathetic people across the continent. There are some differences in perspective but there is also a lot of common direction and identity, perhaps captured best in the first draft of the ABN Principles that Partners developed together in June 2015. The time seems ripe to work on establishing some kind of linking set up at country level. How this happens will need thinking through,

and perhaps a first generic approach could be developed, to be adapted to each different context. One might ask, why is this coming from me and not the Secretariat or Board? I think that this process needs to be driven from the country level if it is going to root itself well and needs individuals and groups to take this task on, of course with back-up support from the Secretariat.

There are now enough individuals across the continent who could start taking this on in their own countries. Perhaps it might only happen in a few countries at first, but that would be a start.

The longer-term vision of ABN is to be a 'Network of communities' across the continent. However, to get there will need constant catalysing of actions and lots of learning from experience. We need to root the potential for this catalysing at the country, and more local level; while at the same time keeping up the regional, continental and international linkages. Many people across countries in Africa are still connected to their home rural area even if they do not live there now. They have strong ties to these rural areas. This is where their ancestry lies. ABN has always talked about 'going back to roots'. These two notions seem to tie well.

Below are the ABN Principles

It starts with each of us

Strengthening individuals to share and deepen their personal conviction, determination, understanding of, and commitment to ABN's philosophy and practice as a basis of all ABN's work.

Our work with communities

Recognising the devastating impact of colonisation and industrialisation, we accompany communities we work with in a patient, non-prescriptive and potentising way that draws particularly on the knowledge of Elders towards deep level transformation.

Those on the edge

Emphasising recognition of those who are marginalised by today's

modern world and bringing to light their knowledge and beauty as well as helping them to know their rights.

Learning towards practice

Developing an expanding range of methodologies and practice that are based on experiential learning and African traditional knowledge systems and which validate traditional knowledge and build confidence.

Ethical documentation

Documenting rigorously, carefully, selectively and creatively the experiences of our work, whilst always seeking permission from those we work with, following community protocols and sharing information back to the sources.

Building alliances towards a stronger global movement

Reaching out to work collaboratively with those who we recognise as allies in the bigger struggle and movement towards healthy communities and ecosystems across Africa.

Bringing in new Partners

Continually seeking out and actively supporting new Partners, communities and individuals to bring into the ABN fold.

Networking amongst Partners

Partners and the Secretariat taking up the responsibility to share often and openly their experiences, knowledge and skills with each other, towards a strong sense of collective ownership for the Network.

ABN gatherings

All ABN events, at whatever level, should strive to reflect ABN's deeply felt respect towards and celebration of Nature and diverse African cultures.

Our institution

Having an effective and well-run organisation that is transparent and accountable while reflecting the Pan-African value of Ubuntu ■

Luttah Annette Aluora

Jeunes Volontaires pour l'Environnement

Searching for Agroecology and Questioning Commercial Agriculture or Mono Cropping in the Context of Smallholder Farming



Agro-ecological practices have been in existence for years where farmers are engaged with the context based agriculture guided by Law of Nature, diversified cultures and based on diversity of food systems.

“Globally, agriculture displaces natural ecosystems, uses too much fresh water, pollutes rivers and coastal seas, and releases greenhouse gases. Altogether, today’s agriculture impacts all planetary boundaries that we should stay within to avoid large-scale and abrupt environmental change. In this context an agro-ecological approach holds much promise.”

FASSIL GEBEYEHU quotes.

Agriculture’s role in achieving food security and economic growth has generally been recognised by a number of scientific communities and development practitioners. However, there are differentiated views towards agricultural policy approaches. Some suggest that agriculture needs to be mechanised and high technologies should be applied so as to achieve economic growth (Johnston and Mellor, 1961, Peter Hazell and Diao, 2005). Others suggest an integrated strategy in which the local-specific and experiential knowledge-based agricultural system could be integrated with the scientific and research-based approaches to achieve food security and economic growth (Beshah, 2003,

Ruben, 2005, Byerlee et al., 2007). When it comes to the context of developing countries, such as Sub-Saharan Africa, where rural areas account for 70% of the population and 20 - 40% of GDP, the role of agriculture remains significant and serves as a food source as well as export-led economic growth (Byerlee et al., 2007, Godfray et al., 2010).

Triggered by the food crises in 2008, the current trend reveals that the role of agriculture in economic growth has been attracting the attention of development practitioners and donor communities, whereby the World Bank doubled its support by 2010 (Byerlee et al., 2007).

However, there is growing concern with respect to the way that agriculture is

developing in Africa and beyond. Ruben (2005) states that: “Agricultural research systems in Africa have produced technologies that are inappropriate to the factor endowments (such as land, labour and capital) of most LFA (Less Favoured Areas) smallholders. Often there has been too much emphasis on increasing land productivity and not enough on the need for sustainability, stability (reduction of annual fluctuations in output) and multiple outputs (crop diversification in order to reduce income risks)”. This shows that the future of agriculture for development is spearheading towards a market-oriented and high input agricultural system, whereas alternative agro-ecological practices, which are mainly integrated

with social, cultural and agro-ecological situations, seems underestimated by donor communities and the developed world. Agro-ecological practices have been in existence for years where farmers (particularly smallholder farmers) are engaged with the context based agriculture guided by Law of Nature, diversified cultures and based on diversity of food systems.

Peter Hazell and Diao (2005) explained that there is a significant influence to shift the direction of African development towards industrialisation. During the past decades, globalisation and free market economy with development ideas such as importation of substitute grains and food stuff emerged to shift the focus of African countries towards industrialisation; diversification of income for rural communities through the increased rural-urban mobility and migration; expansion of small farms to ensure viability towards global market etc.

It seems that many African governments are increasingly adapting technology-based and market-oriented agricultural systems to achieve industrialisation for their economic growth. However, agriculture in Africa is often characterised by smallholder farming which arguably is not suitable for growing surplus tradable cash crops, because smallholders are often engaged in diversified agriculture on relatively small farms in areas of dense populations. Individual landholding for most smallholder farmers, particularly in Africa, would not be more than a hectare or two, so that surplus production for market might not be realistic. For example, over 60% of Ethiopia's farmers' landholding is less than a hectare (ATA, 2010) and this goes as low as 0.25 ha (for an unmarried farmer) in some cases in Northern Ethiopia. Through continuous sharing of land amongst family members, the landholding of individual farmers is resulting in fragmentation of land. This implies that designing agricultural production for commercial purposes in smallholder agriculture has little value because the economics of rural



Smallholder agriculture has been playing a significant role in achieving food sovereignty as this sector accounts for a significant proportion of the world population who are mostly poor and mainly live in rural areas.

households works in such a way that farmers often participate in the market to sell some agricultural products and artefacts. Such a subsistence economy is also supported by off-farm activities, where farms could be involved in full- and part-time occupations such as processing and selling food, cottage industries like weaving, basketry, pottery and sidelines in trade, transport and construction. Hence, altering smallholder agriculture in search of profit could be disrupting fragile ecosystems.

In regions such as Sub-Saharan Africa, growing large-scale tradable crops (surplus production) would be difficult where smallholder agriculture prevails and farmlands are scattered across different agro-ecological zones (Peter Hazell and Diao, 2005). The nature of productivity in these kinds of environments is characterised by the context based agro-ecological practices

which fits with specific locations and micro climatic situations. Staple food production is the main sub-sector of this kind of agriculture which is critical for ensuring food security/food sovereignty and contributing towards economic growth. The significance of staple food production is found to be crucial as most African governments suffer a shortage of foreign exchange for importing substitute foodstuff and cereals (Byerlee et al., 2007, Derek et al., 2009). For example, China's and India's staple food production is more than a third of agricultural output and more than a half in Vietnam. For the last 40 - 50 years, agriculture contributes to the increment of agricultural production averaging 2.3% from 1965 - 1998 in Asia and particularly in Africa; This figure is much more increased by now and much of this growth has been in smallholder agriculture (Peacock, 2004).



Evidence from Southeast Asian countries such as Indonesia, Malaysia and Thailand as well as Taiwan, Republic of Korea and China reveals that supporting smallholder agriculture resulted in growth in agricultural output.

These countries 'reduced agricultural taxation in the 1970s and started to support smallholders. They also established favourable macroeconomic policies, invested in rural infrastructure and social services, provided research and extension services, and supported viable smallholder credit systems' (Binswanger and Deininger, 1997). Most important point here is the fact that smallholder agriculture which is mostly characterised by agro-ecological practices has been playing a significant role in regards to achieving food security/sovereignty because this sector accounts for a significant proportion of the world population who are mostly poor and mainly living in rural areas.

Regarding enhancement of productivity on local crop varieties, there are many success stories in Africa in which farmers have managed to increase agricultural productivity through practicing agroecology. For example, a Zambian farmer had been successful after a local partner provided him with training in various methods of soil and water conservation, so that he managed to increase his agricultural production using natural fertiliser (compost), chicken and green manures, and preparing his fields with zai holes, a minimum tillage technique (Peacock, 2004).

There are also many cases in Ghana, Benin, Tanzania, Kenya, Uganda and Ethiopia where smallholder farmers succeeded in enhancing productivity of their farmers' crop varieties using agro-ecological practices such as use of natural fertiliser, crop rotation, multiple cropping, farmers' led plant breeding etc.

The results from 33 case studies conducted in Asia, Africa, South and

North America and Europe revealed that agro-ecologically inspired practices had positive economic benefits in more than 80% of the aforementioned cases (SIANI, 2015).

The policy brief from SIANI (2015) stated that "Globally, agriculture displaces natural ecosystems, uses too much fresh water, pollutes rivers and coastal seas, and releases greenhouse gases. Altogether, today's agriculture impacts all planetary boundaries that we should stay within to avoid large-scale and abrupt environmental change. In this context an agro-ecological approach holds much promise".

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Farmers' stories under the Community Livelihood Improvement Project

ABN's Partners are actively involved on the ground in rooting for ABN's thematic areas in regards to CSK, CEG and YCB practices. KARANGATHI NJOROGE reports.

Maendeleo Endelevu Action Program (MEAP) is an African Biodiversity Network (ABN) Partner based in Kenya and which subscribes to the ABN philosophy and principles. MEAP has in the past benefitted from various training, exposure and capacity building initiatives by ABN. MEAP applies ABN methodologies in its work that relates to three ABN thematic areas that include Community Ecological Governance (CEG) through promotion and engagement in Participatory Forest Management (PFM). PFM focuses on ensuring communities living adjacent to government gazetted forests are involved in joint forest management or co-managements of forests.

The process creates opportunity for communities to exercise their Community Ecological Governance, revive their Ecological Knowledge Systems and apply the same during implementation of the Participatory Forest Management Plans (PFMP).

MEAP also engages youth in agricultural activities and nature experiential learning in forest setting and in this context it applies methodologies under the Youth Culture and Biodiversity (YCB) thematic area. The activity facilitates inter-generational knowledge transfer as regards ecological governance and ecological agriculture by enhancing associated skills and practices among the youth.

MEAP has a wealth of experience in ecological agriculture including organic farming, sustainable agriculture among other ecological friendly farming practices. In terms of practice, MEAP engages in Sustainable Agriculture Land Management (SALM). SALM promotes better tillage and residue management, restoration and rehabilitation of degraded lands, integrated livestock management, sustainable energy, integrated pest management, nutrient management, soil and water conservation, agronomic practices, and agro-forestry among others. Also central to SALM is promotion of crop diversity that borrows from Community Seed and Knowledge (CSK) methodologies where seed is central in ensuring sustainable crop production. CSK, therefore is one of the key ABN thematic areas that MEAP engages in.

MEAP also engages in Lobbying, Advocacy and Networking (LAN): this effort is aimed at responding to infringing forces working against development initiatives by communities among them policies, legislations and trends. ABN builds MEAP capacity and provides a platform where different actors engage together to voice concerns.

In early March 2016 Ulrike Binder of Bread for the World Germany, accompanied by Karen Nekesa, ABN, visited farmers working with MEAP in Molo, Kenya. These are their stories.





Karen Nekesa accompanies Ulrike Binder of Bread for the World Germany on a field visit to smallholder farmers practising agroecology in Molo.

Eunice Wangari is a farmer in Giteru. She is an innovative farmer and practises what she learns. Eunice has introduced some indigenous food crops on her farm and started multiplication of indigenous food crop seeds. Some of the crops she has introduced include pigeon peas, sugar cane, and bananas. She also grows indigenous vegetables that include black night shade, pig weeds, and amaranth.

Previously, she used to plant each crop on its own but nowadays she integrates different crops together. She has observed that integrating food crops ensures diversity of food crops while pest infestation and disease prevalence has reduced drastically compared to the mono cropping system.

Eunice has integrated livestock into her farming, specifically dairy goats. She recommends goat milk as it is rich in nutrition and is in high demand within the community due to its nutritional value. She gets about two litres of milk in the morning and one and a half litres in the evening from each goat.

The goats also support her crop farming through provision of manure. She practises composting within her compound and takes the ready compost to her farm. Composting helps reduce the cost of outsourcing fertiliser and other inputs externally.

Eunice has innovatively introduced a live fence of castor oil plants that serve as woodlot within the homestead. Since the castor plants are fast growing, she initially sourced some seeds from another farmer and planted them along the boundary. The castor plants did very well and within one year they were big enough to produce firewood. It at this juncture that she realised she could be using the castor trees for firewood and devised a method of cutting off the branches so that they can wither and dry. Since the castor plants usually have mature seeds, they fall and germinate and introduce a succeeding live fence and hence her supply of wood fuel is sustained this way.



Samson has introduced growing of indigenous food crops in his farm e.g. sweet potatoes, sorghum, arrowroots and bananas. He also grows indigenous vegetables like pig weed, and black night shade. He has been sharing seeds with other farmers within Giteru community and its environs. Traditionally communities shared their seeds as a way of ensuring availability of food at the household level, diversity of food crops, sustaining knowledge on these foods, as well as seed security. Samson says that when sharing the seed, one has to first share the knowledge attached to the seed regarding planting, management of the crop, harvesting, storage and recipes. Also farmers who share seeds keep consulting and sharing further information and knowledge on the seeds, crops and farming practices of interest as well as new ventures that farmers undertake and thus encourage farmer to farmer knowledge exchange. Seed sharing is, therefore, a strategy of ensuring farmers keep in touch and network.

Samson practices agro-forestry on his farm i.e. growing of crops and trees. He realised that trees play an important role in the farm such as serving as windbreaks, and providing fruits and firewood. After introducing agro-forestry on his farm, he observed that trees were taking long to mature and hence farmers were tempted to cut them while they were young.

To avoid this, he decided to introduce castor plants along the boundary and due to their fast growth, they provide the much needed firewood and this allows him to wait until the trees mature to provide firewood and other products. Samson prepares oil for his bicycle from the castor seeds and has identified varieties that produce more oil. Elders in Giteru have also shared uses of castor oil thus encouraging members of the community to consider growing the crop.



With increased urbanisation, a need to promote peri-urban farming has evolved. Lydia Odiyo Okwengu is one of the farmers working with MEAP in promoting peri-urban farming with a view of improving the livelihood of the peri-urban farmers by ensuring household food, nutrition security and generation of income to enable her meet her other needs. Lydia has established a number of enterprises on her 50 by 100 feet plot. The enterprises include poultry, sheep and goat rearing, a dairy cow and a kitchen garden. The poultry enterprise is stocked with over 200 indigenous chicken- she sells the birds and maintains sizeable stock. She uses hens to hatch the eggs, supply the family with eggs for consumption and sells the extra in Molo town. Income generated from sale of eggs and chicken goes to address family financial needs, and fuel fees for the livestock officer who monitors and treats her livestock.

She has developed a stock management system where she is able to identify the best brooding chicken, set brooding boxes, systematically identify chicken with good characteristics and dispose those with poor characteristics, and eventually improve her stock with desirable characteristics that include laying ability, brooding, body weight and meat provision.

She targets to increase the chicken stock to 1000 next year and 2000 by 2018 so as to have a continuous supply of chicken meat and eggs to her outlets. Lydia rears milk goats and sheep. Milk goats were introduced recently to supply her family with milk and possibly sell extra milk to the neighbours. She keeps the sheep as an income generating enterprise since sheep do well, multiply easily and demand for mutton has increased in the recent times. Recently, she sold eight sheep at KES 8,000 each thus earning KES 64,000 that was spent as school fees.

Likewise, Lydia keeps dairy cows. The cows also supply milk to her family while the surplus is sold. During peak periods one cow produces 18 litres of milk a day and in low periods about 10 litres a day. Each litre costs KES 40. The money generated from milk sales goes towards acquiring feeds, treatment and management of the livestock as well as supporting the household financial needs. She stocks feed for the animals that last for at least one year from hired land and also buys from other farmers. Lydia has also established and manages a kitchen garden with indigenous vegetables for her family's consumption.



Peter Kamanda is an outgoing farmer with hands-on skills in farming practices. After he was involved in several trainings, he introduced growing of indigenous food crops on his farm and a variety of indigenous vegetables as well. Some of the crops include sweet potatoes, pumpkins, cassava, and sorghum. The vegetables are pig weed, black night shade, kale and nderema (Africa spinach). He also grows amaranth for vegetable and seed.

Vegetables on his farm are both for household consumption and sale. He generates significant income from sale of vegetables especially pig weeds throughout the year. Kale is the other vegetable that he grows for the market. He makes between three and five thousand shillings every month from the sale of vegetables.

Mr. Kamanda benefitted from agro-ecology training by MEAP and practises the agro-ecological agriculture on his farm. His farm is well organised, putting into consideration the needs of each crop. The different cropping systems ensures that he maximises on land utility, tap synergies between and among the crops in terms of pest and disease control, moisture retention and uptake by crops and allows his farm to produce throughout the year even during dry spells. He practises agro-forestry on his farm that incorporates tree and crop growing.

The system taps the synergies between trees and crops like pest control, nutrient cycle and soil fertility management, moisture management, wind control among others. This practice has enhanced production on his farm even during dry spells as the farm appears green and continues to produce.

Kamanda is an experienced farmer and has innovatively introduced crops that are rare to find in the locality like coffee and pineapples and fruits that give him high yields. Other farmers learn from his innovation. He got the coffee and pineapple seeds from his relative who lives in Kisii, Kenya.

Due to his outgoing character and innovation, MEAP identified him as a contact farmer where MEAP organises training on his farm so that farmers are able to get hands-on experience.

Vein Nyanduko Moranga, apart from growing indigenous crops like millet, sweet potato, pumpkins and bananas, specialises in indigenous vegetables. Some of the vegetables she grows include pig weed, black night shade and nderema (African spinach). She also grows cape goose berries as fruits for the family. Vegetable vendors purchase vegetables for sale from her farm. She says that she is able to educate her children through sale of the vegetables as well as meet other household needs. She has devised a planting system that ensures that she has vegetables throughout the year. She has achieved this by apportioning the land into a number of pieces, with the vegetables planted at intervals of two weeks in their respective portions. This ensures that the vegetables mature in sequence and enable her have ready vegetables at any given period. The arrangement gives confidence to the vegetable vendors that they will get supplies throughout and fetch the vegetables on a weekly basis.

Vein has pioneered millet growing in the area. After she was sensitised on the importance of indigenous food crops during community dialogue meetings organised by MEAP, she decided to introduce millet growing on her farm. She currently harvests enough millet for the family that lasts them for a year. In order to rekindle her knowledge, she consulted elderly famers who shared vital information and knowledge on millet cultivation, harvesting, and recipes preparation. She has now become the expert in Giteru village and other farmers consult her for advice and guidance in regard to millet growing.

Seed, and knowledge exchange has become common in Giteru village since the introduction of indigenous food crops. Vein has been one of the pioneers in this process of peer learning and cross cultural exchange. She shares her experiences in vegetable farming, millet and banana growing with other farmers from different ethnic communities. She happens to come from the Abagusii community of Kenya. Giteru has several ethnic communities including the Agikuyu, the Luhya, the Turkana and the Kamba. These communities have diverse knowledge and



Ulrike Binder of Bread for the World Germany prepares to take images of innovative agroecology practices during a site visit to Giteru village, Molo.

skills in farming and in particular, regarding indigenous food crops. In this regard, Vein and farmers from the other communities share their knowledge and experiences on indigenous food crop growing

and recipes. This has seen appreciation of each community living in harmony, dietary habits, growing and using the dietary practices from the various communities.

KARANGATHI NJORGE
Executive Director, MEAP

Biodiversity is Key to Food Security and Food Sovereignty

The case of Tuna women

A balanced ecosystem encompasses all living things being naturally interconnected in a socially mutual network to enhance their survival. In light of this, TUWODEP advocates for sound agroecology practices in its operational zones as narrated by **RAPHAEL ALI YENBAPONO**.

Biological diversity, otherwise known as biodiversity, is very essential for a meaningful life on earth. Every living organism has the right to move freely, reproduce, occupy space and carry out other life processes in their natural environments devoid of chaos, destruction and hindrance. These living organisms are naturally interconnected in a socially mutual network. They, therefore, inter depend on one another for survival. Any attempt to disconnect this mutual social network will cause an imbalance in the ecosystem. It is in this light that TUWODEP is promoting activities that will sustain biodiversity in its operational zones. TUWODEP sees the need and urgency of maintaining a balanced ecosystem and has thus joined the Upper West Coalition on Mining, Food, Water and Sacred Natural Sites for a broader network to address the menace.

Organic fertiliser in place of chemical fertiliser

With farmers' groups, mainly women, comprising of more than two thousand (2000) farmers, TUWODEP has supported its members with technical and financial support in the area of using organic fertilisers on their farms. Notably, TUWODEP, in partnership with Heifer International, is executing a project dubbed PASS ON THE GIFT (POG) Project by supporting members with ruminants to manage. Depending on the number of animals given to each member, the same number is passed on to another member after breeding while the rest belong to the initial member. The importance of this project is to encourage animal production but more importantly, to use the animals' droppings as fertiliser on their farmlands. Prior

to this, the farmers were taken through compost preparation and practising it. The organic fertiliser is relatively cheaper than the chemical fertilisers and has less side effects on both plants and animals.

Block ploughing in place of tractors

Farmers have also been taken through block ploughing. Block ploughing of farmlands cause minimal disturbance to the soil thereby less destruction to the abodes of soil living organisms.

Fight against bush fires and felling of trees

TUWODEP, in collaboration with traditional leaders and other stakeholders, is up in arms against indiscriminate bush burning and felling of trees. Community members have been admonished to avoid bush burning since it destroys a wide variety of plants and vulnerable animals. The problems associated with bush burning and tree felling are already evident in TUWODEP operational areas.

The vegetative cover has drastically reduced; medicinal plants for traditional healing are now difficult to come by. In an attempt to halt the activities of indiscriminate bush burning, TUWODEP is seeking financial support from individuals and organisations to establish a bee keeping zone (apiculture). This is aimed at directly involving the people to stop bush burning whilst improving their financial status. There is, however, hope for better vegetative cover since community members are making strenuous efforts to plant trees and stay away from indiscriminate bush burning and felling of trees.

Promoting indigenous seeds

Farming for the rural people in TUWODEP operational zones is neither an act, event nor business alone. Rather, it is a component of their culture and tradition. Indigenous seeds are, therefore, held in high esteem. The seeds are considered as a huge inheritance from their ancestors. These seeds are used for seasonal planting with an incredible yielding potential; and more importantly, are well adapted to their environment. TUWODEP, through its advisory services, encourages farmers to continue with their traditional crops since they are the best for consumption and also require low external inputs.

Future plans

TUWODEP has the following plans for the future in its operational zones:

- Expand the scope of approach in the above listed cases
- Draft a position paper covering all indigenous crops
- Actively involve young people in executing community related development with particular attention to biodiversity
- Visit and encourage all community members to identify themselves with their unique traditional values i.e. traditional dishes, dressings, dance, etc.
- Actively engage with traditional leaders to protect all sacred sites

RAPHAEL ALI YENBAPONO
Programme Manager, TUWODEP

TUNA WOMEN DEVELOPMENT PROJECT

INFO GRAPH



Organic fertiliser in place of chemical fertiliser

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BIODIVERSITY

Conserving Life in Tuna

Promoting indigenous seeds

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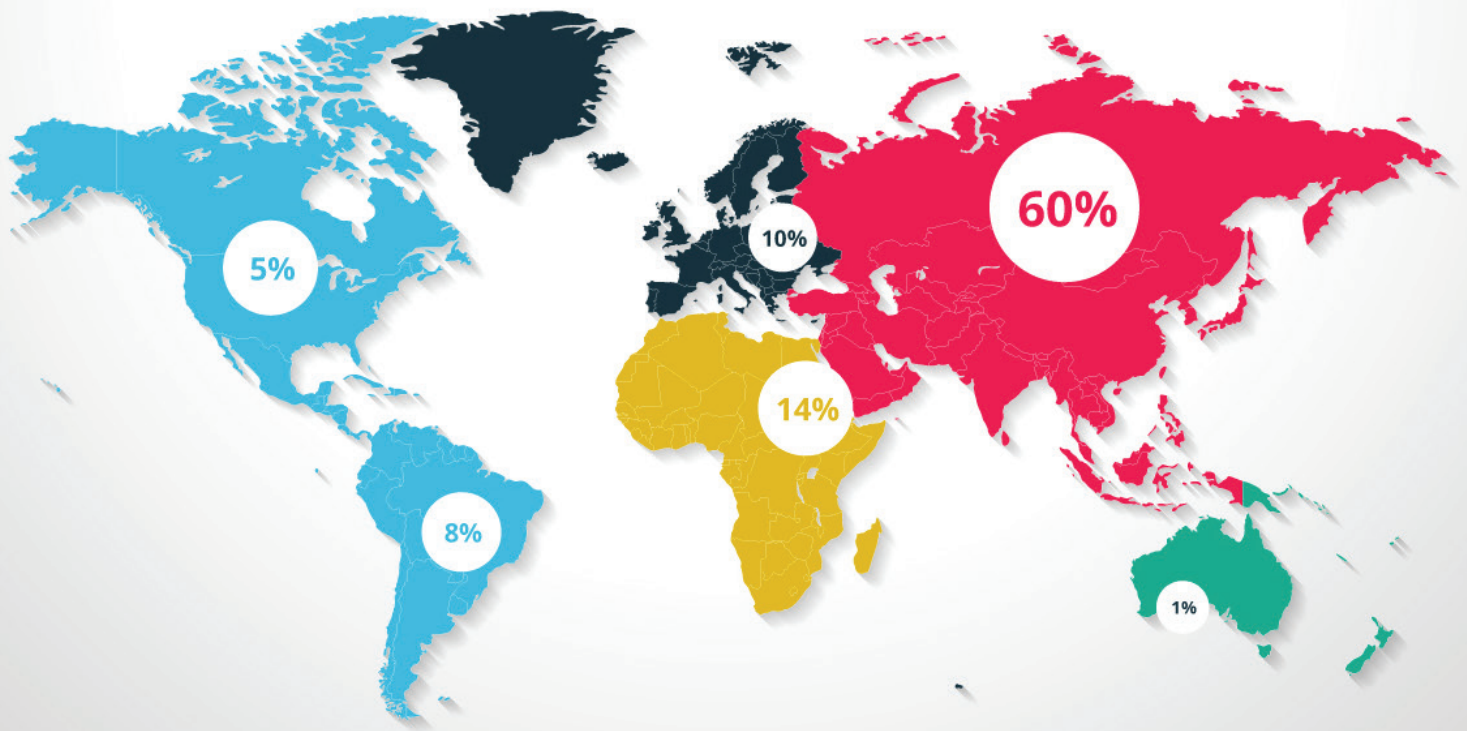
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WORLD POPULATION DAY

11TH JULY 2016



POPULATION PER CONTINENT

This year's theme is 'Investing in teenage girls.' Teenage girls around the world face enormous challenges. Many are considered by their communities or parents to be ready for marriage and motherhood. Many are forced out of school, damaging their future prospects.



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