THE RACE TO PROTECT FOOD NOW AND IN THE FUTURE

SOWING DIVERSITY EQUALS HARVESTING SECURITY (SD=HS)

Photo credit: Allan Mukiibi

CONTENTS

ACRONYMS

CEFORD	Community Empowerment for Rural Development
CIDI	Community Integrated Development Initiative
ESAFF Uganda	Eastern and Southern Small Scale Farmers Forum
FFS	Farmer Field School
IIRR	International Institute for Rural Reconstruction
NARO	National Agricultural Research Organization
NaSSARI	National Agricultural Semi-Arid Research Resources Institute
NSS	National Seed System
NUS	Neglected and Underutilised Species
PELUM Uganda	Participatory Ecological Land Use Management
SACCO	Saving and Credit Cooperatives
SD=HS	Sowing Diversity equals Harvesting Security

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SOWING DIVERSITY EQUALS HARVESTING SECURITY PROGRAM IN A RACE TO PROTECT FOOD NOW AND IN THE FUTURE

Agriculture is the backbone of Uganda's economy, employing over 70 per cent of the total population and contributing 31 per cent of the total export earnings.

However, the country's rich biodiversity is increasingly threatened by deforestation, loss of land to urbanisation causing rainfall to become increasingly unreliable and less predictable with longer dry periods.

All these major effects have tremendously had a huge impact on climate change which in turn has had a negative impact on the country's seed and food security.

Food insecurity is one of the world's biggest challenges according to several studies. These studies predict that by 2050, the world will have over 9.6 billion 'mouths' to feed, yet out of the 30,000 edible plant species, identified in human history, nowadays consumption is concentrated on only 30 crop species.

A 2020/21 detailed baseline study by ESAFF Uganda and PELUM Uganda indicates the inadequate availability of quality and preferred plant genetic materials in Uganda continues to constrain small-scale agriculture. This also threatens food and nutritional security, especially during drastic times of climate change.

Climate change has increased loss in a wide range of genetic resources for urgent and future use as well as limiting local adaptation because of insufficient locally available seeds.

In the face of hunger, women are more vulnerable as they take on the extra burden of trying to feed their families.

SD = HS therefore came in place to ensure the farming communities have increased access to a wide range of genetic resources so that they can have food and nutrion security now and in the future. Oxfam and partners are empowering farmers to sustainably access, develop, use,

and exchange these genetic resources. The vehicle for empowerment is the farmer field school approach which the program has adopted to make sure that the farmers participate or contribute to the development of these plant varieties that will be suitable to their agro-ecological conditions.

The Farmer Field Schools are in collaboration with the Zonal Agricultural and Research Development Institute (ZARDI's) under NARO, the Plant Genetic Resources Centre (PGRC) and the district local Government. Through the Farmer Field Schools, the farmers produce seeds to fill the gap of insufficient supply of quality seeds as well as improving the use of local food plants for community and household food and nutrition security.

The SD=HS project is implemented in six districts including Amuria, Omoro, Soroti, Apac, Adjumani and Nebbi. With the objectives such as domestication, breaking seed dormancy, seed multiplication, improving taste among others. The SD=HS program is being implemented with a vision of a global food system that is just and sustainable.

PILLARS AND REACH

The SD=HS Program focuses on four (4) pillars;

The first pillar focuses on farmers' crop improvement and adaptation working with resilient indigenous and farming communities so that they are able to access and sustainably use and maintain plant genetic resources for food and nutrition security, climate change adaptation and disaster management.

So far, in participatory plant breeding, over 73 farmer field schools have been established, and in these farmer field schools, there are 1,961 farmers, with 62 percent being women, and the youth composition stands at 27 percent.

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The second pillar focuses on improved production and improved market access to high-quality seeds of diverse crops and varieties.

The second pillar is a result of people learning in the first pillar with 13 of these groups doing seed production and marketing. The 13 groups have 36 percent of youth, and 56 percent are women. In total, those who are doing local seed production and marketing are 327 members.

The third pillar aims at improving nutrition and local food plants to strengthen coping strategies of communities by increasing the intake of nutritious food based on local biodiversity and improved management of local food plants, also known as Neglected and Under-utilised Species (NUS).

In the third pillar, there are 41 farmer field schools with 849 members, and the representation of women stands at 53 percent, and youth at 39 percent.

While **the fourth pillar** works on the enabling policy and institutional environment.

Oxfam and partners connected Farmer Field Schools to the District Local Authorities which has provided an opportunity to engage and work with other stakeholders.

At the local government level, we are working with local offices such as District Production Office, District Commercial Office and the District Agriculture office who are relying on these farmers to supply them with some of these crops.

Companies such as Crown Seed Company are engaging Farmer field schools to produce seeds for them.

These efforts have gone a long way in empowering farmers economically.
A total of 30 FFS representatives from Apac participated in a dialogue with the district leaders to institutionalize Farmer Field School approach

Voiced the need for a platform to discuss issues of Farmer Variety Registrations and passing of the policy on Genetic Resources for food and Agriculture (GRFA policy).

SD=HS IN NUMBERS

Agriculture is the backbone of Uganda's economy

EMPLOYING:
OVER 73%
of the total population

CONTRIBUTING:
31%
of the total export earnings

Studies predict that by 2050, the world will have
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Nowadays consumption is concentrated on
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PILLAR 1 **The first pillar** focuses on farmers' crop improvement and adaptation working with resilient indigenous and farming communities

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PILLAR 4 **The fourth pillar** works on the enabling policy and institutional environment.

HOW A FARMER FIELD SCHOOL IS NURTURING A GENERATION OF YOUNG FARMERS

Urebatriku Farmer Field School in Adjumani district begun during the Covid- 19 pandemic. At the time many youths were idle and out of school as the government had postponed the school year as one of the Covid - 19 preventive measure.

The Farmer Field School (FFS) came at just the right time as a life saver and opportunity for youth to expend their energy.

Henry Anyama, a facilitator with ESAFF Uganda remarks that several youths have gotten immersed in the different farmer field groups. Their involvement is considered indispensable because of their youth and energy.

"Youth are very innovative," Anyama says, "They are also very helpful when it comes to cultivating because they actively participate in doing all these activities; digging, harvesting, plucking fruits. You see, farmer field schools have a combination of members like the elderly and middle aged so they need youths to carry out these hard-core duties."

Youth in the district have benefited from the Farmer field schools because they have been able to learn a lot especially in regard to understanding and appreciating the benefits of neglected and underutilised species.

For instance, in Urebatriku a 30-member Farmer Field School group the youth members picked interest in hibiscus plant being grown by the group and are willing to establish their own.

Photo credit: Allan Mukiibi

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ANYAMA

Hibiscus is a group of flowering plants in the mallow family, Malvaceae. The plant is known to have significant nutrients that can help boost the immune system and can help prevent cell damage.

While the plants benefits were known and utilized in the past, certain varieties of the plant are endangered and underutilised due to habitat loss caused by human development, little knowledge among the youths about its benefits and competition from invasive plant species.

Urebatriku is reviving the plant along with other neglected and under-utilised plant species such as engoa (a type of simsim) and Lonjokobi another local food plant.

The farmer field school that was originally a SACCO in Adjumani district in Ofuwa Sub County set out to practice Pillar 3 on Neglected and Under-utilised Species.

They approached ESAFF Uganda and sought training on how to restore the plants with the overriding objectives of domesticating the varieties, and a possibility of seed multiplication because the plants are endangered and require seed for preservation.

The group also desired to re-cultivate plants that were economically viable because of their taste and attributes.

Amongst the three selected plants, the hibiscus specifically boomed because of its added value and many uses that are beyond usage for tea and soup, it can also be processed into wine.

According to the group chairperson, obtaining seeds was the biggest challenge that led to delay.

"We had to reach out to elderly relatives from afar who offered us directions on where to obtain the seed," he noted.

After seeds were obtained, the group planted them following agronomic practices under the neglected and under- utilised Species.

"We have enough seeds for the next season and with time hope to cultivate the plants on bigger land in order to earn income," the chairperson said.

Urebatriku, is also cultivating Lima, a bean variety that has been in existence for a while but now on the verge of extinction. The difference between Lima beans and other bean varieties is that it is high yielding. For example, one Lima bean once dropped under a huge tree, will germinate, climb, grows and give high produce.

Youth in Urebatriku hope to transfer the knowledge obtained to increase their productivity as well as earn incomes to pay their school fees and improve their economic well-being

Photo credit: Allan Mukiibi

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FARMER FIELD SCHOOLS

Oxfam developed the international program Sowing Diversity = Harvesting Security (SD=HS) in 2011 to help enhance food security for vulnerable farmers.


Photo credit: Allan Mukiibi

Part of this SD=HS program included facilitating Farmer Field Schools (FFS). The field schools were initiated with an aim of working with farmers in developing countries to enhance their knowledge and skills to develop, manage, use and exchange seeds with resilient traits.

Through the Farmer Field Schools, participants identify a challenge such as a seed production constraint and come together to exchange practical ideas on how to solve the identified challenge.

They use the farmer field schools to get hands on skills with the field (garden) as a learning place. In the field schools, farmers experiment and validate proposed solutions.

The structure of each Farmer field school has a name most commonly dictated by the school's location or by what particular crop the farmers prefer to plant. These usually comprise of 25 – 30 members headed by a 9-member executive committee including men, women, elderly and youth.

The committee oversees the activities of the farmer field school with a chairperson who ensures members always attend meetings, and participate effectively.

Farmer field schools are divided into subgroups. The 30 members are divided into smaller groups of 5 members. This makes learning participatory and more effective.

Farmer field schools rely on Trainers of Trainees or facilitators for day to day operations. These are people who have been identified and recruited within the community that can at least read or write and are facilitated with manuals to guide the trainings.

AFFILIATION WITH COOPERATIVES

Farmer field schools are also affiliated with cooperatives whose roles include, but are not limited to supplying their members with inputs for agricultural production, including seeds, fertilizers, fuel, and machinery services. Marketing cooperatives are established by farmers to undertake transportation, packaging, distribution, and marketing of farm products.

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COOPERATION WITH RESEARCH INSTITUTES

Farmer field schools work hand in hand with research institutes to obtain first generation of seeds also known as foundation seed for development, multiplication, validation and distribution to the other farmers within the community. In addition, Research institutes visit farmer field schools and offer technical support. Farmer field schools equally provide information to the research institute on the preferred characteristics of a given variety and also provide feedback on the performance of seed varieties.

In Soroti for instance, Anna Sophia, a key facilitator, works with the National Agricultural Semi-Arid Research Resources Institute in Serere district. This is where they get the groundnut foundation seed with improved varieties. They also closely collaborate with Namulonge Vegetable Growers for vegetable foundation seeds.

"Farmers are able to harness the power of using the local foods, so everyone has to know that whatever we have around is food and medicine, and not only members of farmer field school are doing it, but also members of the community," Anna says.

Group savings is one of the motivational factors keeping farmers active in the farmer field. Most of the farmer field schools have innovated the idea of savings every week. The money is pooled together and used in borrowing soft loans to hire land for farming and meeting other needs.

FARMER FIELD SCHOOLS PLAY A VITAL ROLE IN SEED RESEARCH

Please introduce yourself

My name is Wilber Ssekandi. I am a research officer specifically working as an agronomist with the National Agricultural Research Organisation (NARO) under the National Crops Resources Institute.

What exactly do you do as an agronomist?

I work closely with breeders of the National Legumes Program (beans and soya beans, etc) which helps breeders develop legumes that are resilient and high yielding.

What's your take on the Farmer Field Schools program?

This project is relevant because I have seen cases where varieties are taken to different places and they are not adopted by farmers because they don't have specific traits.

I think Farmer Field Schools help avoid seed wastage and promote farmer input in research. In fact, we are now emphasizing using farmers as key stakeholders in the process of developing different crops because farmers know much better what they want.

What is your opinion about Farmer Field Schools working with small-scale farmers?

More than 80 percent of bean farmers are operating on small-scale. They are the backbone of the bean enterprise in Uganda, so basically; they are a unit that cannot be ignored in every effort to promote the bean enterprise.

How do breeders work with farmers? What exactly is your role on the ground?

We work with farmers, whether individually or through district farmer associations and non-governmental organisations. We promote and disseminate technologies and conduct trials.

What's your advice to the farmers?

Farmers need to obtain seed from a certified company or local seed businesses to get high yielding seeds of high quality. After planting, farmers can write to inspectors that we obtained foundation seed from a known source. Then inspectors can come and look at the seed. If the seed qualifies the inspector's test, then it goes into Quality Declaration Seed.

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REFUGEE FARMERS SOWING SEEDS OF CHANGE

Boroli refugee settlement is located in Adjumani district.

First opened on January 1st 2014, the settlement majorly hosts South Sudanese refugees. Since refugees have access to plots of land, most have taken up farming as an alternative source of livelihood.

Some of the refugee community members formed Kadabara, a Farmer Field School (FFS) of 30 members. Through agriculture, the group attempts to improve nutrition and their livelihood.

The group was trained by ESAFF using the farmer field approach. After this, the group identified and grew a rice variety that is resistant to pests and diseases, tolerant to drought, early maturing and has a good taste and aroma when prepared.

Kadabara group obtained indigenous rice seeds from the community as well as other varieties from research institutes. In total, the group cultivated key rice varieties including China short, Wita g, Met 20, met 13, and Met 12.

The seeds were simultaneously planted to compare which one would do better in terms of meeting objectives set out. Members regularly inspected the seeds and diligently took records such that at the end of the season, the group chose Met 20 rice variety because the soils and the environment was conducive for its growth.

The group is now growing the rice on a wider scale from which they supplement their diet and sell the seeds for income.

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WOMEN LEADERS TAKE ON THE MANTLE IN FARMER FIELD SCHOOLS

Margaret

Masudio Margaret is a small-scale farmer from Adjumani district. However, beyond being a farmer, she wears many other hats.

She's also the chairperson of ESAFF in Adjumani and publicity secretary of ESAFF national board and also has a role on the Steering Committee of African Women's Collaborative for Health Food System. She also doubles as a Facilitator of Farmer Field Schools implementing pillar one.

On a typical day, in Pakele Town Council, Masudio has to oversee operations of 3 farmer field schools in Pakele Sub County and 5 farmer field schools in Ofuwa Sub County. Facilitators play a big role in farmer field schools doubling as trainers and mobilisers.

Harriet

Harriet, a farmer, based in Nebbi district, has been a farmer field facilitator since 2019. She facilitates 5 farmer field schools including, Kuuan yabuwang payera, Somo ber pajur parish, Somo ber payera parish, Micparwoth padolo parish, piyot kum padolo parish.

Her key duties include training farmer groups on the different agronomic practices.

According to Harriet, being a facilitator is a rewarding position. "It has given me exposure, I have reached several places and gained confidence from being a leader, and interacting with different people," she notes.

"Initially farmers were used to certain planting methods such as broadcasting which affected yield potential but FFS have introduced them to methods such as planting in lines which increases productivity," she says.

Other benefits Harriet has noticed in her community include increased sources of income and improved nutrition in families due to increased vegetable intake.

Photo credit: Allan Mukiibi

Photo credit: Allan Mukiibi

UGANDA'S FARMER FIELD SCHOOLS PROVE ESSENTIAL TO CONGOLESE FARMERS

Market days in Nebbi district are a cross border affair for Ugandan and Congolese traders.

Every week, business is booming and currencies exchange hands.

But for some Congolese traders like Vincent Amenya, life in Uganda is beyond just the art of business. Over time, he has cultivated reliable Ugandan networks where information and development ideas are exchanged.

During one of his business trips to the market in 2020, Amenya came across Kwan Yabu Wang Farmer Field School demonstration garden, which had been planted on the roadside.

Impressed with this model, Amenya made contact with the chairperson of the group to implement a similar model across the border in the Democratic Republic of Congo.

In less than a month, PELUM granted his request, which set pace for the next stage. Facilitators were dispatched in Congo to train 'Bongo's' group on setting up a farmer field school.

In a similar spirit with all other farmer field schools set up in Uganda, Can Ponjo Jo, another farmer field school group was set up in Jupazuba ile village in DR Congo.

In a reflection on the journey so far, Amenya says the first demonstration garden was affected by drought;

the group has been able to set up a second demo garden with high hopes of attaining the same results as their colleagues in Nebbi District.

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JANET ABWOT

HOW A KITCHEN GARDEN IMPROVED ABWOT'S NUTRITION

Janet Abwot's home in Agenyifeero village Apac district is surrounded by a range of fruit trees and vegetables in a well-maintained kitchen garden in the backyard.

A teacher by profession, Abwot starts her day with inspection of her kitchen garden and sun drying some of the harvested vegetables on a set of racks within her compound.

Abwot's home is one of the model homes that is using the local food plants to improve household food and nutrition security by reducing the period of food scarcity.

The aim has been to tap farmers' local potential to utilise improved management of local food plants, also known a neglected and underutilised species (NUS) to address their communual problems, including hunger and malnutrition; some of the local foods include Lonjokobi, Anvara, Akobokobo, Amola, Ocuga, simsim, Emalakany, Obato, Opele, Icok, Kulu, among many others.

Photo credit: Allan Mukiibi

Photo credit: Allan Mukiibi

As a member of Alwala Mixed Farmers FFS, Abwot attributes the success of her kitchen garden to the lessons and experiences from the Farmer Field Schools.

She has picked a number of lessons such as creating a compost basket using kitchen remains to produce manure and preserving vegetables and other crops to consume even during the dry season.

"Thanks to the lessons learnt, my family is able to eat vegetables such as; boyo, dodo, malakwang, all through even during the dry season," she notes.

Abwot holds her kitchen garden so dear because she relies on it to improve her health. Having been diagnosed with Hepatitis B, which has no cure, Abwot was advised to improve her nutrition by consuming more local food than processed foods.

Beyond learning how to set up a kitchen garden that has improved her family's nutrition, Abwot believes the vegetables she feeds on daily are responsible for her improved health.

"Thanks to the lessons learnt, my family is able to eat vegetables such as; boyo, dodo, malakwang, all through even during the dry season," she notes.

Photo credit: Allan Mukiibi

ARE SEED BANKS THE LAST LINE OF DEFENSE IN FOOD SECURITY?

The Michparwoth Group that inspired a farmer field school initiative in the Democratic Republic of Congo is composed of 25 members situated in Nziri East Village, Nebbi district.

The group's uphill task is to take up the challenges affecting agriculture productivity in the community.

With the right mentorship from Community Empowerment For Rural Development, the group is nurturing a quick maturing bean variety which is expected to have more yield and be weather and disease resistant using the Participatory Plant Breeding pillar.

Initially the group started with implementing Pillar one; Participatory Variety Selection and Participatory Variety Breeding of the SD=HS program.

In Participatory Variety Selection, the group planted a variety of beans in the same field within the same conditions and eventually came up with one resilient bean variety that now suits the group's objectives.

So far, the group has now planted this particular bean variety on one acre and in the next few months looks forward to undertaking the second pillar under the farmer seed enterprise.

Photo credit: Allan Mukiibi

This is also coupled with other agronomic practices such as making organic pesticides out of organic resources to improve seed quality.

However, the need to reap from quality seed has led to the establishment of Community seed banks to provide an important safety net for the farmers. They also help small-scale farmers manage climate risk.

According to Jude Oweka, the Project Coordinator at Community Empowerment For Rural Development,

he says, so far, 3 community seed banks have been established among 16 farmer field school groups in Nebbi district.

Individual group members sacrificed and provided 3 house units that have been renovated and refurbished as seed banks.

They are meant to preserve local seed varieties procured and stored for access by community members, safe and easy to access seed banks in the local community and bring back to the communities the lost seed plants.

Oweka says a number of NUS planting materials were identified, procured and stored in the seed banks. Plans are under way to multiply these varieties for access by various Famer field school members and communities.

"Farmer field school members in the process of establishing the lost seed plants have learnt names and seed varieties that they didn't know before," Jude explains.

"Farmer field school members in the process of establishing the lost seed plants have learnt names and seed varieties that they didn't know before," Jude explains.

Other storage materials locally available and from the market procured and being used to store the seeds.

The outcome has been so far good with at least 15 percent of the farmer field school individual members establishing their own seed banks (granaries) at household level.

Farmer field school members in the process of establishing the lost seed plants have learnt names and seed varieties that they didn't know before.

Previously, accessing and establishing a good, strong and low cost structure nearby centers was never easy.

Despite the challenge of accessing structures within the centers, individual members willingly offered their houses though slightly away from centers, these have helped serve the purpose of seed bank establishment.

A modern and well established community seed bank has been hard to achieve due to limited resources.

Now, with an extra budget realized to construct a fairly modern seed bank, CEFORD recruited a new staff member, Mr. Benson Kumakech to coordinate the first and quick construction of the seed.

This has been effective as progress in terms of local materials mobilization, contracting a contractor and preparation of BOQ is progressing well so far.

But with the support realized from Oxfam, a modern seed bank is under construction and is expected to help boost access and availability of indigenous seeds as well as improving storage.

Photo credit: Allan Mukiibi

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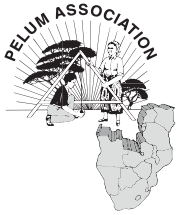

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