ORGANIC AGRICULTURE CAN HEAL THE SOIL AND BOOST PRODUCTIVITY

Small-scale Farmers' Voices on the World Soil Day 2021

INTRODUCTION

Soil is one of the main resources of the biosphere and essential factor in the production of crops as well as sustainability for animals. Soil degradation is widely recognized as a severe problem, and its environmental consequences impact the livelihood of very many people in Uganda, mainly small-scale farmers. This is mostly because soil degradation causes soil quality decline, crop yield reduction, economic crisis, poverty, unemployment, and rural-urban migration. Currently, it's estimated that about 47 percent of the soils in Uganda are gradually moving towards highly degraded.

Soil salinization and solidification are major soil degradation processes threatening ecosystem and are recognized as being among the most important problems at a global level for agricultural production, food security and sustainability in arid and semi-arid regions. Despite the campaigning and spreading awareness about the importance of soil, barely any efforts happened to protect it instead the promoter of soil degradation like chemical companies are rewarded with policies that protect them. Soils have been seen as inferior resources, and negligence is shown by both the people and the governments of the world. Unlike other natural resources, the degradation of soil is something that does not come to notice easily by the inexperienced eye. It is a slow, silent process, which takes its sweet time, but the effects can be disastrous.

To be able to restore and protect our soils, agroecology becomes the ultimate solution because it restores ecosystem functioning by maintaining soil health through understanding and working with interactions among soil, plants, animals, humans and the environment within agricultural systems. Small-scale farmers have attested to the fact that agroecological approach restores soil life and improves the multiple soil-based biological processes. Many stakeholders, have alluded to the fact that agroecology is key to transforming food and agricultural systems. There is need to continue policy and practice campaigns to protect soil biodiversity which is under threat. Only healthy soils will be able to enable small-scale farmers to fulfil the task of growing healthy food which is required both now and in the future. Having healthy soils would ensure the achievement of Goal 15: Life on land and Goal 2: Zero hunger of the Sustainable Development Goals 2030.

WORLD SOIL DAY (WSD)

World Soil Day (WSD) is held annually on 5 December as a means to focus attention on the importance of healthy soil and to advocate for the sustainable management of soil resources. This day is an international day to celebrate soil and was recommended by the International Union of Soil Sciences (IUSS) in 2002. World Soil Day (WSD) creates an opportunity to raise awareness of the importance of maintaining healthy ecosystems and human well-being by addressing the growing challenges in soil management, fighting soil salinization, increasing soil awareness and encouraging small scale farmers to improve soil health.

This year small-scale farmers join the rest of the world in commemorating the World Soil Day 2021 under the theme: ***"Halt soil salinization, Boost soil productivity".*** As part of the commemoration, ESAFF Uganda held interviews with four small-scale farmer leaders on how organic agriculture can heal this soil and boost productivity.

INTERVIEWEES

Nakijoba Irene
Chairperson, ESAFF Mukono District
Board member, ESAFF Uganda

Masudio Margaret
Chairperson, ESAFF Adjumani District
Publicity Secretary, ESAFF Uganda

Hakim Baliraine
Vice Chairperson, ESAFF Mayuge District
Board Chairperson, ESAFF Uganda
Board Chairperson, ESAFF Regional

Christine Nabwami
Chairperson, ESAFF Mityana District
Board member, ESAFF Uganda

INTERVIEW

How are soils being destroyed and mismanaged?

Hakim Baliraine said that soil is a living thing and this means that anything done on it without minding about the consequences shall cause negative impact; hence all outcomes shall be seen on health of what is growing on it. He further explained that soil is a habitant for many macro and micro-organisms, therefore the way humans behave while interacting on the soil affects the soil's health in either way negatively or positively.

Masudio Margaret believes that oil exploration due to spillages and leaks from industries and poor disposal of domestic wastes and none reusable items and materials like plastic items, poly-ethane materials have highly depleted soils. She also says that open cast mining like sand mining in some parts of our community, accelerated soil erosion and use of heavy machines like tractors which turns the top soil upside down results to soil exhaustion. Irene Nakijoba also agrees that the continued use of tractors makes the soil drained hence becoming stiff and prevents free movement of the root system air, water, nutrients and micro-organisms which leads to retarded plant growth. Masudio Margaret further explains that over grazing of cattle in one particular area also destroys the soil cover. This leads to soil erosion. Deforestation and planting of tree species which doesn't add anything to soil but depletes it.

"I think our soils have been destroyed and mismanaged in very many ways such as poor agronomic practices like intensive use of agrochemicals and in-organic fertilizers, over grazing which leads to soil hardening leading to soil erosion." **Hakim Baliraine**

"I have also realised that continued burning of grass on the land before ploughing greatly destroys the soil and its components." **Irene Nakijoba**

Hakim Baliraine who hails from Busoga region observed the bush burning and local bricks making have been a major destruction of soils especially in Busoga region where many youths are involved in brick making for incomes as well as the intensive use of the same piece of land farming one crop, (mono culture). Christine Nabwami also agrees that capitalising on one crop type not intercropping in the gardens highly destroys the health of the soil through soil exhaustion.

"I think the use of chemicals has been one of main contributors to the loss of soil productivity. Deforestation has also led to loss of water catchments and soil erosion. Most of our youth in Mityana have cut down trees to do charcoal burning as well as firewood for brick burning."
Christine Nabwami.

Irene Nakijoba says that soils are destroyed through spraying the weeds, pests and diseases using chemicals. This gradually depletes the soil since the chemicals kill the soil micro-organisms responsible for soil aeration, water and nutrient movement.

How can organic practices boost soil productivity and health?

Masudio Margaret highlights that organic farming practices encourage inter-cropping, agroforestry, and crop rotation by doing so it helps the soils not to be drained out the nutrients but balanced especially if we are using the pool and push approach. Further noted that organic practices mitigate toxicity in the soil which gives good growth conditions for the plant. Many of the organic practices are free from dangerous chemicals which could affect lives of both animals and insects hence conserving nature.

Hakim Baliraine attests to the fact that organic practices are environment friendly if carried out minding of the eco-system and biodiversity. So, they help to replenish the soil health and restore carbon to the soil which is very important in the science of soil. Irene Nakijoba agrees and emphasizes that organic practices are so rich in providing nutrients for the soil. She notes that using compost manure and farmyard compost makes the soil dark and restores its originality in nutrients such as phosphorus, zinc, carbon, nitrogen which boosts crop health leading to higher yields.

"In organic agriculture we encourage mixed farming which also involves livestock rearing and when the livestock eat the crops, they release their wastes and the wastes go back to soil, so the life cycle is none stop and this keeps the soil healthy through-out. We conserve water and when our soils have water, it is assured of supporting the life of many organisms on it."
Hakim Baliraine

Christine Nabwami says that organic farming practices make the soil rich in natural fertilizers and improve the soil texture avoiding depletion that usually makes it unproductive while the use of decaying plants and animals increases soil fertility and are rich in plant nutrients. Hakim Baliraine also notes that when the soil's fertility is boosted it helps its productivity and hence causing sustainable production. Irene Nakijoba also says that she has noted over time that organic practices increase biodiversity in the soil which makes it rich in all the required nutrients.

"Organic practices improve physiochemical properties such as soil Ph, calcium, magnesium, potassium and allow integration of different enterprises on one piece of land." **Christine Nabwami**

"Mulching helps the soil to be covered to avoid soil erosion, increase in organic matter in the soil, soil Ph and keeps the soil moisture. Making of biochar also has so many benefits such as restoring carbon in the soil for a very long time which is highly needed by plants."
Irene Nakijoba

What recommendations do you have for ensuring good and responsible soil management?

Christine Nabwami believes that organic agriculture is the only way to go if we are to restore and preserve our soils. She calls on the government through the Ministry of Energy & Mineral Development to provide and also popularise appropriate technologies which are eco-friendly like energy saving cooking stoves to reduce on tree cutting. Masudio Margaret strongly calls on the Government through the law enforcement entities to implement the different policies and laws that protect the soil cover and regulating deforestation and cutting down of trees for charcoal burning among the youth.

Masudio Margaret says that the Government through the Ministry of Agriculture, Animal Industry and Fisheries should popularize and implement the National Organic Agriculture Policy and promote use of organic fertilizer and organic pesticides which is eco-friendly.

"I would like to say that for good and sustainable soils, small scale farmers need to use organic soil improvement practice such as using compost manure, farm yard compost, mulching and use of organic liquid manure as well as green plant tea." **Christine Nabwami**

"Small-scale farmers need to integrate animals and poultry on their farms because the droppings from animals and poultry boost soil leading to good production and increased yields." **Christine Nabwami**

Hakim Baliraine believes that the land use and management policy should be enforced either through our district developing ordinances and by-laws or government to improvise the soil policy. He further emphasises that government should enforce the laws which stop companies from manufacturing poly-ethane materials in East Africa, and prosecute anyone who doesn't follow the proper disposal of wastes in companies and individuals.

Irene Nakijoba calls on fellow small-scale farmers to plant more nitrogen fixing trees and practice agro-forestry, mixed farming and crop rotation. She also encouraged school leaders to form Agroecology Clubs in schools so that we can start grooming the future farmers who shall keep and protect our soils.

Hakim Baliraine challenges government through the Ministry of Agriculture, Animal Industry and Fisheries to mainstream and domesticate the Ecological Organic Agriculture Initiative passed by AU heads of states in the main agriculture policies to act as a major guiding tool to ensure good responsible soil management.

"Government should construct state of the art factories in the different regions of Uganda which recycles garbage into organic manure and compost." **Hakim Baliraine.**

Masudio Margaret also calls on different stakeholders to invest resources in building the capacity of small-scale farmers on soil management since the small-scale farmers are always engaging with soil. This would play a big role in restoring and improving soil health. Irene Nakijoba says that the Government and other stakeholders should support small-scale farmers in their innovation of making compost manure, crop protectors, and other biological initiatives and subsidise on solar appliances which are used in agriculture so that irrigation systems, is affordable.

Irene Nakijoba believes that government through the Ministry of Agriculture, Animal Industry and Fisheries should provide free soil testing technologies for small-scale farmers.

CONCLUSION

Healthy soils are essential for healthy plant growth, human nutrition, and water filtration. Soil is key in agriculture especially for small-scale farmers. Healthy soil helps to regulate the Earth's climate and stores more carbon than all of the world's forests combined. Agroecology is restoring ecosystem functioning by maintaining soil health which is important for achieving food security. Small-scale farmers are the main ecosystem managers and are at the centre of agroecology. Small-scale farmers have tested and adapted agroecological agriculture practices that restore soil life and the associated ecosystem services.

Eastern and Southern Africa
Small Scale Farmers' Forum
ESAFF - UGANDA

FOR MORE INFORMATION AND INQUIRIES, CONTACT OR VISIT:

Physical Address:
Plot 266, Muvule Avenue
Buye – Ntinda, Kampala
P.O Box 34420 Kampala – UGANDA
Telephone: +256-414-699623

Social Media:
Facebook: ESAFF Uganda
Twitter: @ESAFFUG
Instagram: esaff_agroecology
YouTube Channel: ESAFF Uganda TV

Write to the National Coordinator:
Ms. Nancy M. Walimbwa
Email: coordinator@esaffuganda.org

Website:
www.esaffuganda.org