

Sustainable Solutions to end Climate Chaos: How to make 2015 matter

Agro-ecological agriculture and
organic agriculture

Introduction

Africa, like the rest of the world was and still is being assaulted by Climate Change manifesting as:

- Unpredictable weather patterns
- Prolonged drought
- Erratic rainy seasons of short duration that present as violent thunderstorms
- Increasing atmospheric temperature

Climate Change anyone?



Consequences of Climate Change

- Floods
- Landslides
- Natural water courses drying up
- Up to 100% Crop failure
- Formerly arable lands rendered unsuitable for agricultural production
- Increased encroachment on forest and wetland ecosystems in search of fertile land
- Food, water and energy insecurity

The risks and vulnerabilities

- In a continent where almost 98% of the agriculture is rain-fed and dependent on natural conditions, climate change poses a huge threat on the livelihoods of millions of small-scale farmers in sub-Saharan Africa, especially women.

100% Maize crop failure



AGROECOLOGY DEFINED

- Some prefer to call it a science, other a practice but I call it a movement because it was a spontaneous farmer-led innovation, a reflex action that happened all over the world at ago in response to a felt need.



- This approach was adopted to address several risks such as:
 - 100 % crop failure
 - food shortages, famine, hunger, malnutrition, stunting and deaths
 - mass migrations
 - conflicts over the few remaining natural resources

Ecological agriculture creates synergies



Fish Pond



Apiary



Mushroom Growing

- Agro ecological practices creates synergies with crop and animal husbandry, beekeeping, fish farming, and fruit processing .
- Nothing goes to waste on agroecological farms.
- The farm keeps cows, goats, pigs and chickens whose droppings not only serves as a source of biogas or manure, but it may also be used to feed chicken. Yet chicken droppings when treated may be used to feed cattle.
- The slurry from the biogas is applied to soil to improve its structure, water retention capacity and fertility.

- Cow's urine is very good manure but it may also be turned into a natural pesticide.
- Cassava flour is used to improvise for cement when needed.
- Rainwater from the compound is harvested and stored in a huge underground tank cheaply made out of polythene for irrigating crops and for animals to drink.
- Every tree or plant growing on the farm contributes to the farm. There are such trees as fruit trees for food, *calliandra calothyrsus*, *grevillea robusta*, *ficus spp* trees and grasses such as elephant grass, and lab- lab which are good fodder for livestock, provide shade and are natural hedges.

AGROFORESTRY



- Trees such as neem are useful for repelling mosquitoes and other harmful insects. The trees and grasses are mostly planted along soil erosion control bunds and water conduction trenches. By continuously growing the trees, the farmer is never without wood for fuel.
- Even the sun is not put to waste on this farm. Solar energy is used to dry fruits to increase their shelf life and add value.
- In total one can have 17 different money generating projects and a 3 hectare farm earns a minimum of 50 million Shillings (\$31,000) per year.

Ecological agriculture Vs Chemically enhanced agriculture

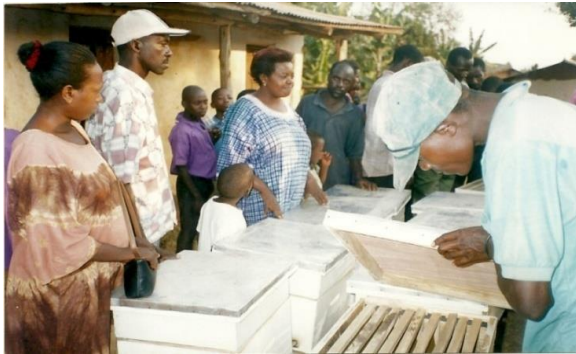
- Agro ecology is an adaptation measure to climate change.
- It is an answer to scarcity of agricultural land as it conserves biodiversity, enhances soil fertility, resulting in healthy ecosystems and high productivity.
- It is a defense against prolonged drought since it improves soil structure and water retention capacity.
- Ecological Agriculture safeguards the health of the producer and consumer
- Chemically enhanced Agriculture depends on fossil fuel energy sources, it is said to contribute between 14 and 30 percent of human-caused greenhouse gas emissions.
- Agricultural pesticides and herbicides kill off pollinators, soil aerators like earth worms drying up soil
- Agricultural Chemicals are almost always used in combination with GMO seeds both of which pose health hazards to producers and consumers

- cost effective because it uses on –farm manure
 - uses cheap, simple technologies that all can understand and access
 - respects all cultural and religious beliefs
 - Promotes gender equality, women emancipation and empowerment

 - keeps our food systems squarely under our control
- Agricultural pesticides and herbicides must be bought on the open market
 - Users of agricultural chemicals must undergo training
 - GMOS violate religious and cultural beliefs e.g when genes from pigs are used to enhance other organisms
 - International Corporations such as SYNGENTA, YARA and MONSANTO control and profit from every step of the smallholder farmer

- Ecological agriculture promotes planting several varieties on the same plot of land, an insurance against 100% crop failure in the event of an attack by pests
- Agricultural produce not contaminated by chemicals is attracting premium prices and can lead to tremendous transformation in the economies of African countries
- Chemically enhanced agriculture promotes monocropping exposing smallholder farmers to the possibility of 100% crop failure
- Chemically contaminated agricultural produce fetches low prices on the market

Insight into the presenters work with forest communities



SWAGEN Members receive beehives



SWAGEN Members receive bee-keeping training



SWAGEN members triumphantly display their first honey harvest

- Thanks for listening!