

SUSTAINABLE AGRICULTURE TANZANIA



TRAINING REPORT FOR ORGANIC AGRICULTURE BASIC, NATURAL MEDICINE AND AGRICULTURE AND ENTREPRENEURSHIP COURSES FOR YOUTHS AND FARMERS



PLACE: SAT FARMER TRAINING CENTRE, VIANZI, TANZANIA

**Sponsored by
"Verein RauscheLe Fest", A-9074 Keutschach, Austria, Europe**

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1. Introduction

Low yields associated with the continuous use of synthetic fertilizers, herbicides and pesticides or continuous cultivation without taking into consideration the application of fertilizer or manure to restore soil fertility. Poor soils resulted from farming without taking into account sustainable on farm soil and water management as well as burning activities. Increasing rate of diseases associated with synthetic chemicals used in agriculture to produce food. Increasing poverty among resource poor farmers who are more vulnerable to climate change. On the other hand increasing demand of organic products, due to increase in awareness among consumers about the Organic produce. All these factors mentioned above attributed to preparing Organic Agriculture Basic Course for the group of farmers invited to take part in the OA 029 course held on 26 – 30 November 2018.

Increasing number of youths who are jobless in many towns is a big issue in Tanzania. Unless deliberate efforts are taken to impart knowledge and appropriate skills that may enable youths to employ themselves, poverty and dependence among youths will keep persisting affecting individual to national economy. With this fact in mind SAT (through the funding of "Verein RauscheLe Fest, A-9074 Keutschach, Austria, Europe") invited 40 youths from Morogoro region to take part in the 5 days special course on Agriculture and Entrepreneurship from 03 – 07 December 2018. With agriculture and entrepreneurship skills obtained the youths would be able to choose and start the appropriate enterprises fitting their context and hence, create self-employment.

Natural medicines offers various opportunities among people ranging from self-employments through production of various products like cosmetics and soaps using various plants/ herbs to cost effective and efficient way of maintaining health in homes and communities. It is for this regards that the training on Natural Medicine was conducted on 05 – 09 November 2018. The training involved 4 participants from Africa Amin (Arusha).

The training to a total 67 youths and farmers funded by "Verein RauscheLe Fest, A-9074 Keutschach, Austria, Europe" was organized by Sustainable Agriculture Tanzania (SAT). A total of 67 participants took parts in 3 different courses that took place at SAT farmers training centre. The courses offered were Organic Agriculture Basic (23 farmers funded by "Verein RauscheLe Fest"), Natural Medicine (4 farmers funded by "Verein RauscheLe Fest") and special course on Agriculture and Entrepreneurship (40 youths funded by "Verein RauscheLe Fest"). We are very grateful for this funding that enabled farmers and youths come to the training at our Farmer Training Centre. Also, during the last day training farmers gave their sincere gratitude for this sponsorship that gave them opportunity to attend these fruitful trainings.

2. Special course on Agriculture and Entrepreneurship for Youths

The first day of training started with an agro ecology tour around SAT FTC to see various agro ecological technologies around the centre that aimed at giving inspiration to youths to undertake various agro enterprises as their income source. The tour followed by reflection gave the youths an opportunity to clearly understand the basic features of agro ecology i.e diversity of crops and other farm enterprises, recycling of nutrients and energy, resilience, efficient use of farm resources, co creation (integration of scientific knowledge with farmers

innovations) and synergy (how different farm components in the farm help to maximize farm benefits).

2.1. Introduction to Organic Farming

People in modern farming use high rates of synthetic agrochemicals in crop production. The ill-effects of the use of these agrochemicals are evident ranging from effects on soil health, workers, consumers and the environment in general. The ill effects of these agrochemicals are the main drives for organic farming. Under this session participants were able to learn the meaning, techniques, inputs, standards, principles and importance of organic farming.

2.2. Garden Establishment in Urban and Rural areas

This part covered various types of gardens that may be established in rural context where the water and land may be available- site selection criteria, preparation as well as managerial practices. On the other hand youths were trained on different forms of gardens that may be appropriate in urban context where utilizing the vertical space may enable youth to produce amid scarcity of land as a resource for crop production. Youths were trained on establishment of backyard gardens such as sack garden, tire garden, heap garden, basket garden, bottle garden and other forms of garden. The use of mentioned materials is one of the ways to utilize resources sustainably which is basically one of the basic features of Organic farming.

2.3. Chicken Keeping

Chicken keeping - is one of the best enterprises that can be a good source of employment and income for youths. However, most of the youth are yet to discover its potential. This training on chicken keeping aimed at imparting knowledge, skills and attitudes to the youths on sustainable chicken management where the participants were trained on general management of chicken, feeds formulation depending on types and age of the chicken. Also, trainees were able to learn various chicken diseases and pests, vaccination of the common diseases and prevention and treatments of chicken diseases using botanicals and other

Vaccination



Feed formulation



2.4. Introduction to Entrepreneurship and Business opportunities

Lack of employments among youths has been a serious problem in many areas. Most of the young who endeavours to be employed get discouraged as they try had to find employment with no success. However, developing entrepreneurial skills can minimize the issue of lack of employment among youth as this may change the mind set and help youths see more business opportunities that may help them secure self-employment. This session aimed at helping youth to develop their entrepreneurial skills and get a viable business idea. Through the session youths were able to various business opportunities they may undertake as part of employments.

On the other hand different facilitators took youths through various skills that may offer them business opportunities in their arears. These includes: Jam making, drying of fruits and vegetables, preparation of peanut butter, bar and liquid soap making, batik making, yoghurt making, baobab making as well as making peanut butter.

Preparation of Fruits and Vegetables for Processing



Jam Making



Preparation of Peanut butter



Bar and Liquid soap making



Batik making

Yoghurt making



2.5. Packaging and Labelling

During the last day youths were trained on appropriate packaging and packaging materials for different products. From this session youths were able to understand the criteria for selecting appropriate packaging materials and carry out an exercise of designing a packaging materials. On the other hand youths learned on how design labels and the basic information that should be addressed on the label as well as how to place a label. The session ended up with a discussion on importance of packaging and labelling.

2.6. Business records keeping

In business its evident that failing to properly keep records in books is planning to fail, this come from the fact that record keeping is very important for proper management of any business. It was for this reason that youths were also among the other things trained on record keeping in business management. This session aimed at equipping youths with knowledge, skills and attitude of record keeping. The session covered the meaning, types of records, important records to be kept for the business, how to record as well as importance of keeping business records.

3. Organic Agriculture Basic

This 5 days training course aimed at imparting knowledge, skills and attitude to farmers on organic agriculture principles, features and benefits. Participants were also able to learn soil fertility management in organic cropping using compost,

3.1. Tour Around SAT -FTC

The course started with a tour around the SAT- Farmer Training Centre, whereas the trainees could learn various technologies related to sustainable water management, Soil fertility management, potable gardens, screen house farming, agroforestry systems, screen house and drip irrigation systems, permagardening, beneficial hedges, beekeeping, fish farming. The tour around the farm would be followed by a reflection to discuss on what may be applicable in their context and how are they planning to apply when they go back to their homes. It was real interesting to see that the tour around the SAT farm was real increased determination to most farmers on the use of Sustainable farming technologies in production.

3.2. Sustainable /Organic Farming

This session introduced participants to sustainable farming approaches pointing out differences between these approaches. This was followed by introduction to organic farming – meaning, rationale, its four principles and benefits.

N.B: Organic farming is the system of farming cares for the people, environment and all living things.

Sustainable Farming is a system of farming that aim at increasing production without undermining the ability to produce in the future of the particular resource use system (Land).

3.3. Kitchen Gardens

Kitchen gardens offers opportunity to sustainable use of available resources which is one of the key features of organic farming. The participants of this course were given opportunity to learn how to use kitchen wastes to produce food around homes using wastes from kitchens. Different backyard gardens were introduced to participants such as heap garden, circle cultivation (Using bottle irrigation methods), basket garden, bottle garden, tire garden and later on participate in preparation of sack garden. Facilitator insisted on the fact that kitchen gardens is the better way to improve nutrition for the family households and it's a better way of using resources efficiently such as water and kitchen wastes'



Practical session on preparation of Sack garden

3.4. Organic Fertilizers

Under this part participants were able to learn how to prepare and apply compost for crop production as a basal fertilizer. Also, participants learned how to prepare and use plants tea as well as manure tea as a top dressing manure for promoting vegetative growth as a source of Nitrogen. Making a green manure as a source of bio fertilizers from nitrogenous plants was a very important part of the training.

3.5. Soil type Determination

Under this part participants learned how to determine the soil types using simple methods i.e hand feel and bottle methods to understand the proportions of sand, silt and clay and then use a triangular chart to determine the soil type. Facilitator stressed on the importance of understanding the soil type in relation to crop selection and soil management.

3.6. Screen/Greenhouse Farming

This part covered the green/screen house installation, management and the type of crops/ varieties to be established in the green/screen house. Also, participants were able to learn the benefits and use of the screen house stressing on pest and diseases management as well as effect of temperature to plant growth and Yield.

On the other hands, participants were able to learn drip irrigation system – installation, use and benefits stressing on the water management.

3.7. Mulches and beneficial hedges

This part covered meaning of mulch, types of mulches, different kinds of mulching materials, how to establish / apply different mulching materials correctly. Participants were able to learn the advantages of mulches in relation to erosion control, microbial activity, weed suppression, soil temperature regulation, soil structure maintenance and supply of macro and micro nutrients for plants.

Also, participants were able to learn various plants (trees, shrubs and other herbaceous plants) that are medicinal in nature and are used to manage various pests and plant diseases as well as the plants that are used for making plant teas and other forms of organic fertilizers. The facilitator stressed on the importance of having these type of plants in the farm as important in farm resources to be used for fertility management, pest and diseases or harbouring the natural enemies especially during off season.

3.8. Rotational Cropping

Under this part participants were able to learn two types of crop rotations i. e rotation in time and rotation in space (mixed cropping). The participants were able to learn botanical families as the basis of mixed cropping and planning for crop rotations with regard to soil fertility management, pest and diseases management and the general synergies associated with crop diversification.

3.9. Nursery establishment

This session involved theory and practical covering the meaning, types, preparation, management and the importance of nurseries. Participants were also able to understand different crops that needs to start from the nurseries and those that does not need to start from the nurseries. Participants were also able to learn transplanting of seedlings from the nurseries.

3.10. Tree nurseries and Agroforestry

Under this part participants were able to learn how to establish tree nurseries, plucking out tree seedlings from open nursery, and transplanting of seedlings in the farms. Facilitator stressed on the importance of tree nurseries in the tree planting program.

Also, on the part of agroforestry participants were able to learn the meaning, systems and technologies of agroforestry, selection of appropriate tree for agroforestry as well as various techniques for planting trees for agroforestry. At the end facilitator winded up the session by stressing on the importance of agroforestry to farmers.

3.11. Organic products Standards and Certification

Participants were able to learn the meaning, importance, Justification and purpose of Organic standards. Deriving an example from East African Organic Products Standards facilitator took participants through various organic standards to be adhered in organic production. Facilitator pointed out on the fact that the standards are set to meet the particular market and the producer should know the organic product standards of the organic market he or she is targeting.

On the other hand, participants were able to learn the meaning of certification, the needs for certification, areas that inspectors look for before certification, procedures and various certification agencies highlighting on the fact that certifying agencies normally have a licence for particular market target, hence to have access to a particular market one has to be inspected and get certified by the agency with a licence to certify for the particular market.

3.12. Marketing and PGS

Organic products need to be treated differently based on the set of Organic standards. To win the market, one needs to be able to prove that the products are really organic. The facilitator guided the participants to understand the systems for quality assurance for Organic products that can be guaranteed to the consumers. Third party certification system and Participatory Guarantee System (PGS) were introduced. The discussion was deep on PGS where the modal applied by SAT was clearly scrutinized. The participants were able to recognise how the system works in which its applicability and relevance was assessed. The steps in the development and growth of PGS was also discussed.

3.13. Chicken Keeping

Chicken keeping – one of the very good enterprises to most farmers as they are quick source of income to the farmer as well as creating synergies in the farm enterprises. This part aimed

at building capacity of the farmers to improve their ways of keeping local chicken and making chicken enterprise more profitable to farmers. Participants were also able to learn chicken feed formulation depending on age.

On the other hand participants were able to learn various pests and diseases attacking chicken, their signs and symptoms, common vaccines and appropriate intervals as well as how to vaccinate chicken. Also, participants were introduced to pest and diseases prevention and treatments using various botanical extracts

3.14. Introduction to rabbit keeping

The rabbit keeping is gaining more popularity as long as more people are becoming aware of the benefits of using white meat as well as various uses of products from rabbits such as urine for pest and diseases management and liquid manure for soil fertility management. This session involving theory and practical covered the general management of rabbit, various pests and diseases affecting rabbits and their management.

4. Natural Medicine Course

This course is intended to enable participants create their own gardens of medicinal plants, Prepare their own natural medicines, treat themselves, their families and others within their area of competence, as well as treating their families and colleagues and others in their communities.

This training was also intended to enable participants appreciate the power of herbs and the fact that plants found abundantly in many areas in Tanzania are not only for food but also for medicine.

The course covered the basic introduction of cultivation, preparation, and usage of medicinal plants. Participants after undergoing the course would be able to know how to extract natural oils and prepare high quality soap. Generally, the training would help participants to stay health and prepare themselves to start their own cosmetics business.

In a nutshell this 5 days training covered the following topics:

- ✓ The influence of good nutrition and lifestyle on health
- ✓ The recognition, knowledge and cultivation of several medicinal plants in a medicinal garden
- ✓ Production of effective Natural medicine from these plants e. g teas, different medicinal oils and ointments and tinctures
- ✓ Production of different soaps, medicinal charcoal, black stones for snake bites
- ✓ Treatments of various complaints and diseases, including malaria, skin problems, diarrhoea, HIV / AIDS and wounds



Youths taking active participation during a practical session on Chicken diseases, Vaccination and Treatment



Class session introduction to Chicken keeping