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The Main Benefits of the US\$125 million Bio-fertiliser Credit Fund for Kenya

100% organic farming is an inevitable shift as farmers throughout Africa seek to produce better quality produce, attain higher yields, and protect their soils against destructive chemicals.

Part 1: Post-Sale Training Activities

Note: The training will include ensuring that the benefits in Part 2 are achieved.

- 1. Workshops for the Trainers of Farmers:** Before the liquid, 100% organic bio-fertilisers, Bio-Plant and Pro-Plant, arrive in Kenya, we will conduct regional workshops around Kenya for agriculture extension workers so they can train farmers afterwards how to use the bio-fertilisers to grow 100% organic crops and to phase out chemical agriculture. (2 days)
- 2. Workshops for Crop Associations:** We will carry out workshops for crop associations so that farmer members can use the bio-fertilisers for the association's specific crop(s). (1 day)
- 3. Workshops for Women on Compost-Making:** This workshop will train women how to make very rich compost with Bio-Plant; not just for their garden / small farm, but also so that they can sell the compost in bags. This will increase their income while helping to ensure their family's food security. Food security cannot be achieved in Kenya until the soil's microbial life and fertility have been restored through the use of rich, 100% organic compost. Bio-Plant makes very rich, soil fertility-restoring compost. (Half a day)
- 4. Workshops for Youth:** The purpose is to encourage youth to take up agriculture as a profession. It will teach them how to restore the soil's fertility and how to grow certain crops. (1 day)

Part 2: The Main Benefits of the Bio-fertiliser Credit Fund for Kenya

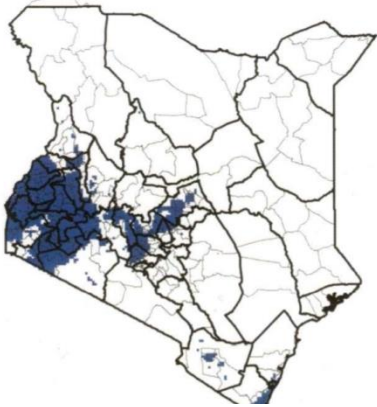
- 1 The Benefits for the Tea Industry**
 - Many tea plantations are facing reduced yield resulting from acidic soil caused by chemical farming. Using the bio-fertilisers in 100% organic will reverse the process by raising the pH of the soil to a natural, balanced state, and by restoring the soil's microbial life and fertility.
 - The goal of exporting tea to China is being hampered by the high fluoride content of soil. The long-term use of chemical phosphate fertilisers has added very considerable quantities of highly toxic fluorine to the soil. By replacing them with Bio-Plant and Pro-Plant, the fluoride content of the soil can be removed by bio-remediation through the action of certain micro-organisms in Bio-Plant.
 - With a new vision and the use of the bio-fertilisers, Kenya could become the largest producer of 100% organic tea in the world.

- 100% organic production of tea will enhance the flavour and quality of Kenyan tea, and increase its popularity and the demand for it. Tea exports will increase as a result.

2. The Benefits for Cereal Farmers

- Soil low in phosphate and highly acidic is one of the factors limiting maize production in some parts of Kenya, notably in the Uasin Gishu plateau; in the North Rift; and parts of the Central Rift Valley. By replacing chemical production with the bio-fertilisers in 100% organic farming, the acidity will be removed; plenty of phosphate will be provided through microbial action and by means of Pro-Plant; and the crop yields of cereals will be increased.

3. Transforming the Acidic Soils



Acidic soils occupy about 13% (7.5 million hectares) of Kenya's total land area. *(See the dark areas on the map.)* This results in lower crop yields and soils depleted in microbial life. The bio-fertilisers will restore the balance of the soil through microbial action. As the soils' fertility increases, crop yields will increase, and food security issues will be less significant.

4. The Benefits for the Coffee Industry

- Kenyan coffee is facing immense competition in the world market. The 100% organic production of coffee will improve the taste, aroma, body, and after-taste of coffee, which will help to deal with the competition.
- The global demand for organic coffee is rising, and the global market for it is expected to grow at about 13% from 2017-2022. By increasing 100% organic coffee production, Kenya will be able to increase its coffee exports.
- Using the bio-fertilisers will deal with some of the problems faced by the coffee industry, such as: soil exhaustion and a lack of soil nutrients; pests; and diseases.

5. The Benefits for Kenya's Other Main Crops

- Aside from the increased yields and lower production costs, which farmers will experience from changing to 100% organic farming with Bio-Plant and Pro-Plant, new markets can be created for the main cash crops, such as: 100% organic nuts (macadamia, cashew, shea); 100% organic fruits and fruit juices; 100% organic vegetables; and 100% organic flowers.

5.1 Fruit Juices

- The global market for cold pressed juices is anticipated to grow at over 10% from 2016-2021, on account of increasing the online presence of major cold pressed juice manufacturers and shifting the focus of manufacturers towards organic fruits and vegetables to extract cold pressed juices.
- Fruit grown with the bio-fertilisers is sweeter than chemical fruit because more natural sugar is produced, and the fruit is larger. Farmers will, therefore, find a ready market in Kenya and abroad for their organic produce.
- There is likely to be increased sales for local fruit juice producers, and entrepreneurial opportunities for (young) people to sell 100% organic fruit juice on the streets and online.

5.2 *Nuts and Seeds*

- The global demand for nuts and seeds is increasing steadily as people become more health-conscious. Farmers will have a ready export market for their 100% organic nuts and seeds.

5.3 *Flowers*

- 100% organic flowers grown with the bio-fertilisers have a stronger scent; are larger than chemical flowers; and keep longer after picking, which means they can be shipped easily from the producer to the markets abroad. In addition, the scent of the flowers can be enjoyed without the worry of inhaling toxic chemical sprays.
- Another benefit is that Kenya will not experience problems again with the EU regarding chemical pesticide traces in the flowers.
- Also, flower workers will no longer have to experience health problems caused by spraying chemicals.

5.4 *Vegetables*

- There is a ready market in the EU for 100% organic vegetables. Vegetables grown with the bio-fertilisers are crispier and sweeter than chemical vegetables. Kenya will be able to increase its exports of vegetables as a result.
- In addition, the country will not experience problems again with the EU regarding chemical residues in the vegetables.

6. *The Benefits for the Essential Oils Industry*

- Kenya has a small industry producing essential oils. 100% organic essential oils make up a small part of this. The global, 100% organic essential oils market is expected to grow at a CAGR of more than 11% from 2017-2022 owing to increased demand for organic beauty and personal care products especially among millennials. This is attributable to the growing awareness of the health benefits associated with the use of essential oils as active ingredients in these products. Kenya could not only increase its exports by focusing on producing 100% organic essential oils, but also become known globally for the production of 100% organic essential oils and thereby increase the demand for its products.
- A developed 100% organic essential oils industry could lead to the growth of the spa industry and wellness tourism, which is growing rapidly.

7. *The Benefits for Kenya's Environment*

- It is now obvious that to produce enough food for Kenya's growing population by means of the heavy use of chemical fertilisers and sprays that destroy the environment, is simply not possible or environmentally sustainable. Eventually, the soil will become depleted in microbial life and nutrients throughout the country.
- The consequences will affect the population and the economy because crop yields will become lower and lower; crop quality will decrease; and exports will decrease as other countries go 100% organic and their produce increases in demand. Kenya will become poorer and poorer. The only winners will be the chemical inputs producers and dealers.
- In addition, bird life and beneficial insect life, such as the pollinators, will be affected seriously; the waterways and water table will become more and more polluted from the runoff of agro-chemicals; public health and wellbeing will deteriorate; and social unrest will grow. 100% organic agriculture prevent this scenario from happening.

8. *Food Security*

- About 75% of Kenyans derive all or part of their livelihood from agriculture, and it accounts for 18% of the gross domestic product (GDP). Food security with chemical agriculture is

impossible in view of its harmful effects. 100% organic agriculture can provide not only ensure food security for families in their gardens and fields, but also the whole country. Again and again the bio-fertilisers have shown in all kinds of soil conditions and climates that they outperform chemical agriculture in crop yield and crop quality while improving the soil's fertility so that crop yields and quality can be improved.

9. The Benefits for Public Health

- Phasing out chemical agriculture will reduce cancers and illness caused by the spraying of toxic and carcinogenic chemical sprays, which enter the food chain, and the lack of nutrients in crop produce. In contrast, 100% organic agriculture produces food, which is safe and which has far more nutrients. When Pro-Plant is sprayed on a crop, it absorbs 50+ nutrients.
- Waterways and underground water, which become drinking water, will not be polluted with the run-off of agro-chemicals.
- Also, the health of farm workers will not be endangered by having to spray toxic chemicals on crops. Chemical sprays are not needed in 100% organic farming with the bio-fertilisers.

10. The Benefits for Biodiversity

- 100% organic agriculture addresses Kenya's problem of biodiversity imbalance and loss. Chemical agriculture is a major cause of this. Biodiversity is the foundation of agriculture as we know it. That means having a balance of organisms and plants (flora and fauna) that are in harmony with nature; a balance of Carbon and Nitrogen; abundant pollination; etc. These processes are well-balanced, maintained, and preserved in organic agricultural production systems. This means that you end up preserving very important processes that support life,

11. The Benefits for Developing the Savannah

- Areas of the savannah can be turned into fertile arable land in a sustainable way by means of the bio-fertilisers. Indeed, we have made a proposal to the government of Ghana to turn the savannah region in North Ghana into arable land.

12. The Benefits for Reducing Kenya's Carbon Footprint

- By ratifying the Paris Agreement on climate change, Kenya is committed to cutting Carbon emissions by 30% by 2030. Organically-managed soil converts Carbon Dioxide (CO₂) in the air in the form of a greenhouse gas into a food-producing asset. It turns the soil into a sink for CO₂. Chemical agriculture causes the release of huge amounts of CO₂. Consequently, replacing chemical agriculture with 100% organic agriculture will help Kenya to achieve its goal in the Paris Agreement.