REPORT ON LEARNING ON LEARNING TRIP ON SUSTAINABLE DEVELOPMENT BY WAJIR TEAM

JANUARY 2018
Foreword

Wajir is an arid and semi-arid county that receives an average rainfall 350ml. The county is food insecure and livestock as its main economic activities. The county is affected by recurring drought with loss of lives and livelihood. In every successive drought more and more pastoral dropout join the vicious cycle of poverty. The livestock dropouts join crop farming as alternative livelihood. The literacy level of this vulnerable population is about 80%. With the start of devolution the county strives to enhance knowledge and skills to increase productivity and household income.

Enhancing knowledge and skills on the importance of sustainable development both at household and community level remains a big challenge in today’s globalized and knowledge oriented world. In order to integrate agriculture and other livelihoods there is need to optimally utilize resources such as environment, technology and human resource.

In order to improve food security status there is need for increased production of diverse and safe foods and increased household food availability and access throughout the year to ensure adequate food consumption through right quantity and diversity.

We believe that the Sekem model of sustainable development will provide a new avenue for faster technological adaption and economic growth for Wajir county.

In order for county its stated goals of sustainable development all stakeholders need to join hands in order to provide effective extension services delivery for health and prosperous county.

It is our commitment as government to provide all the necessary support to improve lives and livelihoods of our people.

Yussuf Abdi Gedi

County executive committee member
Agriculture livestock, fisheries and livelihood
Wajir county
AKNOWLEDGEMENT

On behalf of Wajir county Government and on behalf of the people of Wajir we would like to extend our deepest gratitude and appreciation to the people who made the tour of Wajir team to SEKEM a success. Our special thanks goes to the following among others.

1. Helmy Abouleish and the larger Abouleish family for hosting the team
2. Adrian Groeneveld and SWW for raising funds to facilitate the team
3. Corien w.Hoek, De Graaff Bert and SEKEM Netherland for making the trip a success
4. Regina Hanel and Angela Hofmann for their tireless efforts in ensuring that the Wajir team was facilitated and making our stay in Eco village comfortable and program a success.
5. Hisham ElNagar for the proper coordination in Eco village
6. The entire SEKEM team from the drivers who took us from the airport and round Egypt, the chefs who made delicious meals and the receptionists who accorded us warm reception.
7. The staff of Heliopolis university for the nice induction
8. The security personnel who provided security during our tours.

We cannot thank all of the team individually but we extend our warmest gratitude to the entire Sekem family who assisted us in one way or the other.
1.0.0 INTRODUCTION

THEME: BUILDING RESILIENCE THROUGH LIVELIHOOD DIVERSIFICATION

The overall objective: to empower communities in livelihoods diversification and building resilience.

Aim: The project aims at addressing food insecurity and building resilience of the drought affected communities of Wajir County in Northern Kenya.

Team from Wajir county Kenya led by the County Executive Committee member for the Department of Agriculture, Livestock and Fisheries and livelihood visited Egypt from 14th January to 20th January 2018 to learn from Egypt which has almost the same environmental condition.

The Egypt is old civilization that derives its livelihood from river Nile. The larger part of the country lies in the desert where there are no rivers. The rainfall of Egypt is 40-70 mm of rainfall per year.

1.1.0 TEAM COMPOSITION

The team members were drawn from different departments to get exposure and learn new technologies that can be replicated in Wajir.

<table>
<thead>
<tr>
<th>S/NO.</th>
<th>NAMES</th>
<th>POSITION</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Yussuf Abdi Gedi</td>
<td>CEC Agriculture</td>
<td>Head of the delegation</td>
</tr>
<tr>
<td>2.</td>
<td>Khalif Abdi Ali</td>
<td>County Chief Officer irrigation</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Jelle Abdi Ibrahim</td>
<td>Technical Officer Agriculture</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Abdi Billow Elmi</td>
<td>Director Resource Mobilization</td>
<td>Resource</td>
</tr>
<tr>
<td>5.</td>
<td>Siyad Mohamed Abdi</td>
<td>Chairman Farmers Association</td>
<td>Farmers</td>
</tr>
<tr>
<td>6.</td>
<td>Sabdow Kassai Omar</td>
<td>Technical Agriculture Officer</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Hassan Bashir</td>
<td>Entrepreneur</td>
<td>Founder of Takaful Insurance and also established camel milk and meat processing plant in Wajir</td>
</tr>
<tr>
<td>8.</td>
<td>Dahaba Hussein Madey</td>
<td>Business Lady</td>
<td></td>
</tr>
</tbody>
</table>
1.2.0 Objectives

- To empower policy makers, entrepreneurs, Agricultural experts, Resource mobilizers with development of sustainable agriculture.

- To develop suitable and a sustainable model of Agricultural production for Wajir county in partnership with SEKEM and private investors.

2.0.0 The SEKEM Initiative with its many areas of activities was founded to realize the vision of sustainable development. SEKEM aims to contribute to the comprehensive development of the individual, society and environment.

   Cooperation in economic, social and cultural endeavors is cultivated through dedication to the pursuit of science, art and religion.

2.1.1 SEKEM is an Egyptian initiative established 1977 by Dr. Ibrahim Abouleish, in the North east desert of Egypt. The name SEKEM is the transliteration of the hieroglyph, meaning “vitality”.

2.1.2 SEKEM OBJECTIVE

In its business enterprises, the SEKEM GROUP strives to accomplish the following objectives:

- Healing the Environment through the application of biodynamic agriculture methods

- Developing solutions, providing services, and manufacturing a variety of products that meet the consumers’ true needs and conform to the high standards

- Marketing and distributing products in partnership with farmers, vendors and consumers for social endeavours. the cooperative of Sekem employees form a community of people, from all over the social spectrum who:

   - Appreciate the dignity of each human being
   - Teach democracy and governance
   - Create the foundations of healthy living

In the cultural domain, the development of the individual is strengthened by the Sekem development foundation through:

- Education for children, youth and adult, provided in several centers for learning, to promote free and sound thinking and artistic expression

- Health care and therapy using holistic medicine, are available through the medical centre and community outreach programs
Research and development to provide solutions for pressing questions, dealing with various aspect of life are conducted and taught by the Heliopolis academy for applied arts and science

2.4.0 The Abouleish foundation is holding the family capital of SEKEM. The foundation council is the safeguard of SEKEMs vision to ensure the future sustainability of all SEKEM activities. The SEKEM holdings has established department s for finance to provide the required funds for long term investment as well as for IT to manage the network and the different enterprise resource planning applications.

The business development department coordinates the different development projects. The public relations and human resource departments are providing the companies with services.

The quality management department with responsibilities for the development and maintenance of the quality management systems, enables the SEKEM group to perform at the highest possible level, and to introduce the concept of continuous improvement, the learning organization and total quality management.

2.4.1 THE SEKEM initiative

- with its many areas of activity was founded to realize the vision of sustainable development. SEKEM aims to contribute to the comprehensive development of the individual, society and environment.

- Cooperation in economic, social and cultural endeavors is cultivated through dedication on the pursuit of science, art and religion.

- The size of the Sekem farm is 70 Ha of which 2/3 is under cultivation while 1/3 is afforestation and buildings. The farm is established in the middle of the desert and well planned with belts of green trees that are inhabited by various species of wild animals and trees droppings are used to improve soil fertility and compost making.

The source of water for the trees is the sewage water that is slightly treated using a biological system. All the waste water from the farms is collected into one place and pumped to the trees.

2.5.0 THE CORE ACTIVITY OF SEKEM- ORGANIC FARMING

Organic food is produced by farmers who emphasize the use of renewable resources and the conservation of soil and water to enhance environmental quality for future generations.
Organic food is produced without using pesticides, chemical fertilizers, or genetically modified organism.
Organic meat, poultry eggs, and dairy products come from animals that are not treated with antibiotics or growth hormones.
2.5.1 Why does organic cost more?
   a) Organic agriculture is not subsidized to the same extent as conventional agriculture.
   b) Organic practices such as hand weeding are often labor-intensive and therefore more expensive.
   c) Organic farming generally take advantage of economies of scale.

2.5.2 Benefits of organic food
   - Organic products reduce health risks because they don’t contain pesticides, chemicals or artificial additives that may cause serious diseases.
   - Organic products make your body more resistant to diseases as they contain high levels of nutritional benefits which help your body to fight infections.
   - Organic products provide the body with more energy because they do not contain toxins and chemicals that affect the body.
   - Prevents erosion hence maintain the components of the soil.
   - It protects the stockpile water from pollution, while chemicals used in traditional agricultural drafting with rainwater to stock.
   - Chemicals used in conventional farming method “non organic” leads to extinction of some plants and animals.

2.5.3 Movements of international organic products
Must come from organically certified farming areas and for a farmer to become a member of Egyptian biodynamic association you must pay 100 Egyptian pounds for every acre per year. The farmer must agree to move from conventional farming to biodynamic farming. The trial plots are set at the farmers fields by the organization to demonstrate difference between conventional and biodynamic farming in terms of productions per unit quality and prices

3.0 AGROFORESTRY TREES
   The following agroforest trees are grown in the SEKEM farm among others
   - Date palm-date productions
   - Guava- leaves are made tea bags
   - Eucalyptus
   - Prosopis Juliflora
   - Hini
   - Acacia
   - Melia
   - Mahogany

3.1 Neem seeds- processing to pesticides
5kgs of crashed seeds by mixing with:
   - 10litres of water
   - Keep it soaking for 12hours
   - Add 50ml of liquid soap or 10g of solid soap
   - Add water to spray 1 acre in the evening is the best time to spray for good results.

Sprayed for the control of:
   - Caterpillars
3.0.0. EGYPTIAN BIODYNAMIC ASSOCIATION

This is a Non-governmental Organization that is registered to provide extension services to farmers who are members of the association. Both large scale and small scale farmers are registered with the aim of transforming production from conventional agriculture to organic farming. There are registration fees of 100 Egyptian pound for every Ha for every year to move from conventional way of production to biodynamic way of production. The association members are given quality services by establishing scientific field trials in their farms to realize higher production, higher quality products and higher prices (20% price increase compared to conventional farmers)

The association is made up of farmers who are contracted by SEKEM to supply organically produced products.

**Extension advisory service linkages**

Research → Extension → Farmer

The role of extension services is mandate of the government tasked with the ministry of agriculture in Egypt. The association has 15 agronomists and 30 engineers support working with the farmers who are registered in the association. The extension officers are mobile and always with the farmers passing the latest research findings to realize the benefits of farming as a business. For a farmer to benefit from extension services they must have 20 acres and above hence the farmers must group themselves and form a cooperatives to qualify for registration to be a member in the Egyptian Biodynamic Association. There are 400 small scale farmers are grouped into 4 farms each with 5 Ha to become a member of the association to get required 20 Ha. 3000 ha are under biodynamic cultivation by companies and 2000ha are under small holdings

There are consultancies on biodynamic practices to advice, certify and ascertain the authensity of the product organically and issue certification certificate that it has certified internal standard.
The vegetables in the farm are irrigated using a sprinkler systems, most of the crops are grown using biodynamic systems. Some of the outlaying farms are watered using the Nile water but some are using borehole water.

### 3.1.0 The following Crops are grown:

1. **Dania**—medicinal-tea making, and for oil extraction

   NB: A Drip irrigation system has been used to water the plants. Polythene sheet papers is used to control the weeds and for moisture conservation. The polythene lasts for one harvest season i.e they may not be applicable to wajir because of high salinity.

   The seed source for the Dania is from farmers’ field and well scheduled in reference to branches, oil content, disease resistant, size, weight and preference.oil content used to be 0.2% but now upgraded to 2%. The oil cake and stalk is used to feed the animals in the farms. Pests and diseases control is biological (insects to feed on the other insects).

2. **Morden grains**— origin South America and used as grain to substitute rice

3. **Date palm tree**

   ![Plantation of date palm crop](image)

   - Egyptian tree
   - Life span 50yrs
   - First time reaches maturity in 3 years
   - Variety –Gharloul or zarloul
   - Spacing- 8m by 8m
   - Pest and diseases- palm beetle
   - Control- the beetle lays eggs inside the palm. Pesticide is injected into the tree stem hence kills the larva.
   - Propagation- plant the stem root
Fertilization and pollination - pollen grains spread on top female plants as flowers.

Manuring - at planting add compost + sand + soil (clay + loam)

Size of the hole (compost) 60cms * 60cms

**Identification of male and female**

Female: it can only be known during flowering

Male: can be identified with pollen grains

**NB:** stool from female tree are female

Stool from male tree are all male

Other uses:
- Timber
- Baskets
- Chairs
- Stools
- Residues used in compost making and mulching material

Sources for propagation material

- stool

Recommendation: It can be grown in Wajir environment.

Plant population is 65 trees/acre

Yield - 150kgs/tree/year

4. Wheat is grown for food and fodder but not applicable in wajir. Egypt produces 60% of its wheat need and only imports 40%. The staple food is bread.

5. Legumes _ trifollium is grown as livestock feed and provide crude protein for animal feed_
In fodder production it’s used to select suitable leguminous species for the specific areas to improve the nutritional components.

6. Guava - the leaves are grown for tea making at SEKEM in Egypt. This plant grows well in Wajir environment hence need to commercialize the crop using SEKEM approach.

7. Oranges – Variety - Valencia – Grown for juice and export but the variety may not suitable for Wajir unless the right variety is introduced and bred.

Wheat field under drip irrigation and orange crop fruiting var. valencia

4.0.0 WASTE MANAGEMENT

All wastes are taken to designated area. Trained farm personnel to do sorting by hand and materials are classified. These materials are recycled and reprocessed into items that are useful.

- Hard plastic
- Soft plastic
- Metals
- Papers
- Glasses
- Wood
- Kitchen wastes
5.0.0 ASSESSMENT OF SOIL PROPERTIES BY ORGANIC MATTER AND EFFECTIVE MICROORGANISMS INCORPORATION

During the last decades concerns have been raised about soil quality. The current concepts of soil quality include different aspects such as soil, plants and biological productivity, environmental quality, human and cultural health. Agricultural technologies and current practices e.g monocropping residue management, mineral fertilization, over use of pesticides, heavy agricultural machinery, inadequate management practices of soil and irrigation can significantly affect the soil quality by changing their physical, chemical and biological properties. Low input of organic matter into the soil in conventional production system causes imbalances in the ecosystem decreasing microbial activities and plant growth promotion, this limits plant nutrition and makes plants more susceptible to pests and diseases.

Research has focused on the development of environment quality indicators and soil management practices that restore and improve vegetations and productions minimizing negative environmental impacts contributing to sustainable agriculture. The use of manure, crop diversification and rotations, the application of biological control agent and the appropriate practices recommended to restore and improve the quality of soils

5.1.1 Simple technique of increasing effective microorganisms

- Material is sourced from Europe or any other place.
- They come in ½ litre liquid of the organic soil to multiple. You add the ½ litre microbial liquid into 60litres tank and connect it to power source at 30 degrees cl ensuring that the system is covered and no air is allowed from outside.

**NB:** Ensure ratio of Effective Microorganism: Molasses: Water is 1:5:90

The 60litres solution will be added to 1500lts then applied to the soil or the content put into 20 litres container ready for sale to the farmers.
5.1.2 COMPOST MANURE
Collection of materials Heaps of compost decomposing Grinding machine reducing plant materials into fine materials.

All plant residues, kitchen wastes and animal manures are mixed. The plant residues are threshed, crushed into finer pieces then mixed with animal manure in the ratio of 30:70%. The mixture is laid in a pile and sufficient amount of water added and left for the material to be acted upon by microbial activities.

Em is also added in order to increase biological activities. The temperature of the compost is monitored regularly and the pile is turned as required using a tractor mixer.

When the right air temperature of plus or minus 6 degrees Celsius is attained the mixture is ready for use.

The highest temperature allowable for the decomposition is 75 degrees, when it’s at that temperature the mixture should be turned and left for a day when it attains a temp of 65 degrees for 2 days.

When Compost is ready it smells like fresh soil and is odorless.

How to apply the manure depends on your need, you can spread or put in lines whichever applicable.

Use of manure alone the temp will be very high and destroys the microorganisms and using the plant alone will take too long to decompose.

When plants are feed very well they resist the attack of pests and diseases.
## 5.1.3 Chemical and physical analysis of Bio-dynamic Compost

<table>
<thead>
<tr>
<th>Constituent</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulk Density kg/m³</td>
<td>550—650</td>
</tr>
<tr>
<td>Moisture content%</td>
<td>20-25</td>
</tr>
<tr>
<td><strong>Electrical conductivity dS/m</strong></td>
<td><strong>4-6</strong></td>
</tr>
<tr>
<td>PH</td>
<td>7-8</td>
</tr>
<tr>
<td>Total Organic Carbon %</td>
<td>15-18</td>
</tr>
<tr>
<td>Total Organic Matter %</td>
<td>30-36</td>
</tr>
<tr>
<td>Total Nitrogen%</td>
<td>1.4-1.6</td>
</tr>
<tr>
<td>C/N Ratio</td>
<td>&lt;15:1</td>
</tr>
<tr>
<td>NH₄ N, mg/kg</td>
<td>300-400</td>
</tr>
<tr>
<td>NO₃ N, mg/kg</td>
<td>250-300</td>
</tr>
<tr>
<td>Total Phosphorus %</td>
<td>0.6-1.0</td>
</tr>
<tr>
<td>Av. phosphorus mg/kg (ppm)</td>
<td>300-450</td>
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<tr>
<td>Total Potassium %</td>
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<tr>
<td>av. Potassium mg/kg</td>
<td>400-600</td>
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<tr>
<td>CEC cmol/100g compost</td>
<td>70-80</td>
</tr>
<tr>
<td>Humus value</td>
<td>5</td>
</tr>
<tr>
<td>Fe ppm</td>
<td>&gt;250</td>
</tr>
<tr>
<td>Zn ppm</td>
<td>&gt;150</td>
</tr>
<tr>
<td>Mn ppm</td>
<td>&gt;100</td>
</tr>
<tr>
<td>Cu ppm</td>
<td>&gt;50</td>
</tr>
<tr>
<td>Germination test</td>
<td>&gt;85</td>
</tr>
<tr>
<td>Total bacterial count cfu/gd compost</td>
<td>18*</td>
</tr>
<tr>
<td>Active bacterial ug/gd compost</td>
<td>10-20</td>
</tr>
<tr>
<td>Total fungus count cfu/gd compost</td>
<td>10*</td>
</tr>
<tr>
<td>Active fungus ug/gd compost</td>
<td>10</td>
</tr>
<tr>
<td>Root feeding Nematodes</td>
<td>Nil</td>
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<tr>
<td>Weeds Germination</td>
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</tr>
<tr>
<td>Parasites</td>
<td>Nil</td>
</tr>
<tr>
<td>Pathogens</td>
<td>Nil</td>
</tr>
</tbody>
</table>
The team is taken through the process of compost making.

### 6.0.0 DAIRY COWS

### 6.1.2 BREEDS:

Breeds of animals that are kept includes: Friesian from Holland, Brown Swiss from Germany and black crosses. These animals have very in conducive environment during winter but during summer the temperatures are high which is manipulated to comfort the hybrids.

Different animals are kept in different pens:

1. **in-calf cows** – this animal are extra feeds and supplementary feeds for flushing to give to healthy calves and high milk production
2. **Lactating cow**- High nutritive feeds for milk yielding
3. **Heifers**- are fed with rough food and leftovers from the cows to develop their digestive system and to cope up with the fast growth
4. **Breeding bulls**/leftover from the cows to develop in their stomachs

Milking was done 3 times day, while feeding was done 3 times/day.

Milk yield is 26-40 litres/day.

Sometimes they are twin calving, the female twin cannot make a good dairy cow so they are taken for slaughter but the male can make a good male for breeding.

- Both Artificial insemination and natural mating are done for the cows
- Small bulls are kept in a separate pen and prepared to replace the old bull as breeding stock (Bulls)
- Mature bulls weigh 800kg
- Mature cows weigh 600kg
- Mature old -1 kg live weight cost Egyptian pound [45 Egyptian pound/kg]
- Young-54 Egyptian pound /kg

6.1.3 SHEEP - BREED

Breed here is Fat tailed sheep kept for meat and the young are separated from the mother at the age of 3 months. Lamps are sold when they attain the live weight of 15-60 kg/body at age of 9 months 1kg/body cost 60 pounds and when slaughtered 1kg dress cost 100-120 pounds

The organically produced fodder crops are used for animal feeds like:

- Leguminous spp-cut fresh and fed to the animals
- Corn maize-this are milled and stored in the bankers
- Wheat husk-this are bailed and stored in hay sheds

Dairy cows and sheep. Hay bales and banker where feeds are stored
7.0.0 SEKEM EDUCATION

The SEKEM has nursery, primary, secondary and training section. The lower learning units start from baby class, pre-units and nursery classes. Primary section has class one to class eight. There is a section for special education children/pupil with special need trained.

- Secondary section
- Vocational training section-courses here includes

1. Electrical
2. Woodwork-carpentry
3. Mechanics
4. Tailoring
5. Agri-technology

The training curriculum was tailored towards the SEKEM vision, mission and need for sustainability. The repairing, maintenances, making of new items for the institution (Sekem) was very much supported by willing partners through collaborations. Based on Egyptian culture and traditions the arts making models, molding that can be understood was emphasized: Arts and music was very much emphasized to develop student’s creativity and expression, while promoting art and culture. Children with special needs-they were given special training from speech, walking, how to behave, how to relate with the society. They were also taught art works and other technologies.
We interacted with 2 persons with special needs who graduated and employed as teachers. Further they informed that some of them were not released to the outside market but retained for further training and assistances.

At the time of our visit there were 40 students in the section we witnessed and visited.

Pre-unit classes – kindergarten - this is the first registration of baby class. These were to be told to choose uniform colors (mixed). Red, blue, orange, green, yellow etc. Educationists have noted children choose their color according to their temperature (behavior). Same clothing for boys and girls.

- Playing materials for children are made locally
- They playing materials are toys, dolls, it depend with their choice.
- They play together, eat, clean, good behavior taught.
- Be creative, learn to think through their hands
- Vocational training
- Number of students-650
- Number of teachers-70
- Sections- special need, community school, vocational training, teachers training.
- Each class has a capacity of 25-30 students.
- Teachers serve all children equally both weak and clever students.

### 6.1.2 HELIOPOLIS UNIVERSITY

The team being briefed about the university

The university is located 50kms from Sekem guest house. It started as a small administration block (office). It was the holding for research fields, market centre for Sekem products. Trees were planted and water was availed. From 1990 an administration block was built and 5yrs later other buildings was added there after the university was started and built for a period of 10 years. The total students’ population currently is 1400.

There are 3 faculties:

- Engineering
- Pharmaceuticals
- Business and economics
There is a plan to increase/introduce other causes but based on the demands of the market and students (wish) interest.

Majority of the students were from Egypt.

There is a connection between local industries, global labour market and multinational cooperation’s number of internship and scholarship are available every year.

6.1.3 Community building capacities, culture, and poetry

This section is based on arts and is well emphasized as it promotes the following:
- Leadership skills
- Speech making,
- Creativity
- Improves relationship
- Enhances peace buildings and conflict resolutions
- Self confidence
- Presentation skills
- Personalities
- Team building

**Lessons learnt**

- The courses are in line with Sekem policy of sustainable development.
- There is a network of collaborations with international universities through which they offer students, faculties exchange programme, curriculum adopt and universities industry partnership.
- They permanently connect our students with the foreign countries in sharing knowledge, how to enhance learning experience in multicultural background.

**8.0.0 PRODUCE FROM EGYPTIAN BIODYNAMIC ASSOCIATION**

**8.1.1 ATOS-PHYTO-PHARMACEUTICALS**

Research and development, including the concept and design of new medications, clinical trials, the preparation of training manuals, and the continuous improvement of all products are outsourced to Heliopolis academy for applied arts and science, where multidisciplinary team of researchers and scientists from all fields of medicine, pharmacy and agriculture collaborate closely to provide modern solution

Atos pharma markets and distributes its product nationally and internationally

Atos pharma manufacturers and markets an array of natural medicine and health products of superior quality for effective casual treatment combined with maximum tolerability. The products are developed for different indications in cancer therapy cardiovascular, dermatology, Castro-intestinal, gynecology, hepatobiliary, immunology, neuropsychiatry, respiratory, rheumatology and urology.

**To ensure the highest quality of all products from ATOS pharma, we adhere to:**

Stringent criteria which are applied during the selection of raw materials with the use of bio dynamically grown herbs, plants and natural ingredients only
The outstanding efficacy tolerability and therapeutic effects of the products which are maintained by strict adherence a comprehensive set of guidelines and rigorous quality controls as well as the implementation of Good Laboratory (GLP) and Good Manufacturing Practices (GMP).

The production process which comply with the National and International regulations that conform ISO9001 Standards.

8.1.2 HATOR- Organic fresh produce

Hator packs bio dynamically grown fresh produce for local and international markets to supply and maintain the highest nutritive value and adhere to the customers’ technical specifications of each product. At the time of visit 65 types of fresh and frozen produce are sold locally under ISIS brand in Nature best shops and supermarkets in Egypt. In international markets it distributes fresh fruits and vegetables through long-established partnerships in UK and Netherland. Quality and freshness and wholesomeness of the products are preserved by strict adherence to international quality standards through certification.

8.1.3 LOTUS-dried organic herbs and spices

Is a processing company for all kinds of organic herbs and spices from bio dynamically cultivated plants Herbs and spices are clean and classified through different processes according to the need of the customers and international processing guidelines, ISO 9001 HACCB, with the greatest care through their taste, aroma and natural medicinal effectiveness. LOTUS aims to cultivate natural, chemical free products and to safeguard environment for future generation. The products meet the European quality control standards and have been certified to comply with international guidelines.

Processed and packaging of produce for export eg sesame, spices
8.1.4 NATURE TEX
Organic cotton Textile

Naturetex is an organic cotton producer of high quality fabric, fashionable home textiles and colourful baby wears. The design and development of the products are done in house in the own studios, produced and marketed internationally under its own brand cotton people organic and Naturetex. Naturetex competes successfully in the global market for organically produced textiles through design, manufacturing and marketing due to the advantages of beautiful and high quality products from Egypt.

- Employees- 500 persons
- Doubles as training institution and production centre.
- Supply of raw materials is from the farmers (contracting).
- Production- 50000 minutes-fluctuations production depends on demand
- Everything made in the factory is in order basis from client both outside and inside the country (Egypt)
- Assistance from other countries and well wishers
- Fabric detectors machines, warehouse and packaging team.

The team is taken through the textile industry

8.1.5 MIZAN-Organic seedlings- mizan is a plant raising company aiming at providing Egyptians vegetable producers with healthy and profitable in and outdoor seedlings and grafted seedlings. Is a joint venture company between grow group Holland and Sekem group Egypt. The principle of grafting is to use a vigorous rootstock with high absorbing and transporting capacities, to provide the chosen plant variety with its needed water and nutrients. These combination of vigorous rootstock and a strong variety leads to an increase in production.

Grafted plants are more resistant against soil diseases like root rot, viruses, and fusarium and are better adoptable too extreme climates.

Grafting means lower cost perplant, due to higher production and lower cost per area, especially seed, through lower plant density. Grafting also means less input cost due to healthier, more resistant plant.

8.1.6 Libra-organic cultivation

The principle of SEKEM builds on long term trusting and fair relationships with partners, farmers and farm managers through regular training, seminars and meetings to bring
together Agricultural Engineers to share their experiences in close partnership. It coordinates the Agricultural logistics and cultivation of raw materials and export to international business partners. The company owns farms but cooperates extensively with the fast growing number of associated farms that have switched to biodynamic farming methods after rigorous training provided by the Egyptian Biodynamic Association. This network of independent farmers supplies LIBRA with cotton, grain and seeds from all over Egypt. To avoid unfair competition crop rotation, planning, and production are carried out with transparent economic management in close cooperation with all farmers, various distributors and retailers.

### 8.1.7 Isis organic foods

ISIS produces wholesome nutritious, tasty and healthy food from carefully selected raw materials, free from any artificial additives or preservatives. The food stuff processed and packed by ISIS include organic grown cereals, rice, vegetables, pasta, oils, beverages and herbal teas, coffee and juices.

In order to ensure the best quality and freshness of the product, ISIS adheres to a number of strict guidelines and implements several safeguards throughout the cultivation and production process.

Using the Hazard Analysis Critical Control Point systems the process are controlled and verified by procedures and controlled from the field to the end-consumers. The management has developed quality manual with operating procedures that are used in all company processes.

Vegetables grown as medicinal herbs

### 9.0.0 Lessons learnt

- Organic farming
- Compost making- Cheap compost making
- Planning of market before production
- Fodder production
Farm planning
Diversification of production
Contract farming
Fertility improvement
Crop rotation
Alternative livelihood
Infrastructural development
Sustainable development in agricultural development
Nutritional requirement of the plants to resist pests and diseases
Stakeholder involvement in planning community project for resource mobilization
Paradigm shift in building synergy between different actors
Change of mindset and explore inbuilt strength
Nature ecology and community building capacities
Improvement of polytechnics,
Integrating crops production, bee keeping and livestock farming using biodynamic cultivation thus improving soil fertility.

Quick win projects to be implemented

- Revive rehabilitation Centre
- Revive youth vocational training
- Compost site making
- Engage in date palm, guava, lemons
- Holistic development of:
  - Arts and creativity
  - Production
  - Processing
  - Marketing
  - Utilization.
- Large scale water harvesting
- Model demonstration farm

Activities that can be implemented

1. Adoption of Biodynamic farming systems
2. Commercial production of compost manure
3. Development of herbal medicinal plants
4. Establishment of Agro forestry programmes especially for fruit trees
5. Team of technocrats composed of selected departments and private investors to visit SEKEM for exposure and learning.
6. The county to develop a network of collaboration with SEKEM
SUMMARY

The team has realized that Wajir environment is more conducive climatically for livestock raring, crop production, bee keeping and agro forestry as compared to Egypt. Wajir receives 250- 350 mm of rainfall annually as compared to Egypt that receives 40-70 mm annually.

- Egyptians are more practically oriented in terms of use of natural resources than Wajirians.
- Natural resources are harnessed and utilized well.
- Egyptians are moving from conventional agriculture to organic, this is healthier than the type of farming practiced here.
- More emphasis is put on herbs for medicinal purposes this decongests health facilities.
- Egypt has invested heavily in research and training as regards agriculture.
- The Egyptian investors/entrepreneurs are more dedicated, innovative, patriotic and hardworking serving as role models for Wajir to emulate.
- Need to develop partnership with like-minded friends/partners from within and outside the county to develop agriculture/ livestock sectors and link the same to industrialization, education and human resource development.

Way forward

1. A group of investors/ entrepreneurs and law makers to visit Egypt
2. Develop an inter-sectoral county action plans.
3. Conduct sensitization workshops/meetings for various actors to disseminate the learnings from Egypt tour.
4. Establish a demonstration model farm at the county level
5. Reclaim the dumpsite and create compost from the waste.
6. Integrate key learnings in the county CIDP