

Organic in Action

SEKEM, Egypt: Composting for Sustainable Agriculture in Egypt



The promotion and maintenance of healthy and fertile soil has long been a global challenge. Miriam Bogatzki, of Soil & More explains how we can reverse the negative impacts of agriculture...

In times of dwindling resources, steady growth of the world's population, prolonged loss of fertile farmland and worsening climate change, it is essential to rethink the foundations of a viable and sustainable agriculture. Modern intensive agriculture of the industrial age is directly or indirectly responsible for many of the current global challenges. For example, it swallows about 70 percent of the world's available freshwater and contributes to greenhouse gas production mainly through the production and application of mineral fertilizers that it depends on. Thus, it significantly contributes to climate change.

Tobias Bandel, Managing Director at Soil & More

The increasing use of synthetic fertilizers and pesticides also results in a dramatic deterioration of soil fertility. Humanity, while still growing, continues to lose several thousand hectares of fertile land every day. The promotion and maintenance of healthy and fertile soil has long since become a global challenge.

But the care and development of sustainable agriculture is only one of the goals of the long-term cooperation of SEKEM and the company Soil & More International. Soil & More is an international company headquartered in the Netherlands, which focuses on the development and operation of composting facilities and emission reduction projects as well as services centring on the issue of promoting sustainability and best practice among farmers and suppliers.

Biomass – an untapped treasure in developing countries

The idea for Soil & More originally came from the desire to support farmers desiring to learn how to improve or restore the structure and fertility of their soils. As part of their work, the founders quickly learned that in many developing countries priceless biomass is not fed back into the agricultural cycle, but is in fact rotting or is burned resulting in a significant and negative impact on the environment. To solve this problem while providing growers with a sustainable alternative to expensive and environmentally harmful fertilizers, Soil & More began with the development of a process that converts the unused biomass in nutrient-rich compost and thus closes the recycling cycle.

SEKEM is supported by Soil & More not only in compost production but also in the reduction of emissions and in the preparation of their own CO₂ and water balances. Agricultural scientists and experts communicate their professional knowledge in soil science to local workers in compost production in specialised training courses and continually work for the optimization of the production process.

In 2007 and 2008 SEKEM and Soil & More began to operate two composting plants on an industrial scale, one near the original SEKEM farm grounds and one near Alexandria. On these two installations covering 30 acres of surface area the two companies produce about 85.000 tonnes of purely organically manufactured compost every year.

Much valuable biomass is wasted in many developing countries thus polluting the environment and contributing to global warming.

Sophisticated technology to save precious soil

As part of the composting process organic wastes such as straw, chicken and cattle manure, crop residues and water hyacinths are collected from the region and stacked in several layers forming a large heap of compost. For optimum composting conditions, the exact order in which the raw materials are stacked is particularly important.

During the process of controlled microbial composting CO₂ levels and core temperature are regularly measured. If necessary, the compost pile is turned and watered. In about 8 weeks, the biomass is transformed into a nutrient-rich compost ready to use, which supplies farms large and small all over Egypt with a substitute to chemical fertilizers and many pesticides.

Farmers benefit from an improved soil structure and a resulting lower water consumption, reduced dependence on mineral fertilizers, increased carbon sequestration capacity of the ground as well as a greater variety of microorganisms in the topsoil. Additionally, compost is also popular in conventional agriculture. As the soils in the desert around the original SEKEM farm are slightly alkaline, exhibit very low carbon levels and suffer from salinisation the long-term regular use of compost can counteract these characteristics and lead to a lasting change in the composition of the soil, the buildup of a sustained layer of humus, and thus a substantial increase in the proportion of organic substances in ground.



PHOTOS: Compost facility development site, Egypt (by Soil & More)

Land development and climate change

Besides its employment in demeter- based agriculture, the compost SEKEM produces is especially needed for the development of desert soils. In only the last 24 months a total of 3,000 new acres of desert land have been developed through irrigation and the regular use of compost.

Additionally, the compost produced by Soil & More and SEKEM also directly contributes to climate protection. For example, it helps to avoid the methane emissions that usually result from the conventional disposal of biomass. This contribution to reducing the greenhouse effect is compensated with tradable emission permits. Thus, each year in accordance with the climate policies issued by the United Nations, about 100,000 tons of greenhouse gases are avoided. This amount is certified by Germany's respected technical surveillance service TÜV-Nord which also credits the equivalent of this figure in the form of officially tradeable carbon emission certificates.

Quantifying sustainability

Besides the construction of composting facilities, the transfer of knowledge is a particular concern of SEKEM and Soil & More. The improvement of agricultural labour practices and the provision of best practice methods to small-holder farmers in developing countries and emerging markets is therefore also the aim of the two organisations' North-South partnership for development.

To make sustainability more measurable is another core goal of the cooperation between Soil & More and SEKEM that is directly targeting corporate clients. Together they are working to produce better sustainability indicators in the areas of water, energy, animal and plant environment etc. The development of indicators is crucial in allowing private sector companies to understand the impact, benefits, and the costs of their commitment.



PHOTOS (Clockwise from Top): Green “waste” - water hyacinths are collected and processed into compost (Soil & More); Farmer harvesting organic cotton; Carrying out quality checks in the field; Manufacturing process (SEKEM, Egypt)

Future Prospects

The example of the SEKEM Initiative is a particularly encouraging one when looking at the positive consequences regional action can have on the global level, and how economic activity can be directly linked to social progress. In the future, both partners plan to export the knowledge of Soil & More and SEKEM to beneficiaries outside of the initiative.

More about SEKEM

SEKEM was founded in 1977 by the Egyptian pharmacologist and social entrepreneur Dr Ibrahim Abouleish. The name SEKEM is the transliteration of a hieroglyph, meaning “vitality”. SEKEM’s goals are to “restore and maintain the vitality of the soil and food as well as the biodiversity of nature” through sustainable, organic agriculture and to support social and cultural development in Egypt.

Biodynamic cotton suppliers - All [SEKEM cotton suppliers](#) are Demeter (biodynamic) certified or in transition. Farmers for SEKEM were the first in the world to cultivate and harvest biodynamic cotton in 1991, both on an experimental and a commercial scale. Since 1994 the Egyptian government has been supporting farmers to cultivate organic cotton.

SEKEM textiles - Among the SEKEM companies is [NATURETEX](#) - producing high quality organic fabrics, home textiles, and baby wear. The design and development of the products is done in-house in its own studio, and produced and marketed under its own brand Cotton People Organic (CPO), NatureTex, Organic Baby, or under private labels such as “People Wear Organic” (PWO).

For more about SEKEM visit <http://www.sekem.com/>
Textile Exchange SEKEM case study can be downloaded [here](#)

More about Soil & More

Soil & More aim to make farming systems more sustainable in order to stop the loss of soil fertility. They promote the more sustainable use of the world's remaining resources.

Their vision is to:

- Be the leading supplier of a comprehensive range of complementary sustainability services to companies, farmer co-operations, governmental and non-governmental organizations worldwide;
- Measurably improve the sustainability performance of agricultural production systems and global supply-chains;
- Promote and support a sustainable development towards healthy soils, healthy products and healthy people.

The Soil & More Foundation, an independent not-for-profit organization, forms a center of excellence for the development of sustainable solutions to address the world’s biggest environmental and agricultural problems, such as soil degradation, food and water scarcity, loss of biodiversity and climate change.

Soil & More work globally. They specialise in / and provide consultancy on:

- Carbon and Water Footprinting
- Compost Projects and Carbon Credit Projects
- Soil Fertility

For more about Soil & More visit <http://www.soilandmore.com/>

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Designed by Evonne Tan

Textile Exchange inspires and equips people to accelerate sustainable practices in the textile value chain. We focus on minimizing the harmful impacts and maximizing the positive effects of the global textile industry. Our signature program focuses on organic cotton value chains; improving lives for farmers, stimulating markets, and supporting best practice.

Website: farmhub.textileexchange.org/

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