Biovision

Newsletter August 2016

Agriculture in Kenya on trial

Which is better: organic or conventional?

biovision

A future for all, naturally

Organic versus conventional

Since 2007, a study in Kenya has been comparing organic and conventional agriculture. Working alongside scientists, small-scale farmers have been participating in field trials. Results show that the ecological system is the right way to go.

Peter Lüthi, Project Reporter at Biovision

James Kuria Mwangi, a farmer from the village of Karinga in Central Kenya is loving, caring and patient – exactly how a grandfather should be. He likes to gather his grandchildren around him and tell them stories from the book "Globi, the smart farmer" (see cover photo). James is taking part in a long-term System Comparison, a project supported by Biovision for 11 years. Biovision also helped with the writing of the Globi story in which the children's hero transforms a conventional farm into an organic one. Globi visits Kenya and there the clever Swiss parrot learns that organic methods of agriculture also work better in tropical countries – However, can our system of organic farming transfer unchanged to Africa?

Long-term scientific tests

To test this assertion, a long-term system comparison is being conducted in Kenya, India and Bolivia under the direction of FIBL, the Research Institute of Organic Agriculture. In Central Kenya, KALRO, the Kenya Agriculture and Livestock Research Organisation and icipe, the International Centre for Insect Research and Ecology are conducting field trials in Thika and Chuka. To ensure that the trials accurately reflect local farming conditions, some 60 small-scale farms are participating in the project.

The researchers compare inputs and outputs from organic and conventional methods of farming. A crucial factor is that each group – farmers and scientists – learns from the other so that together they can improve the techniques used on these small farms.

The use of rock phosphate for the production of organic compost has proved a particular problem. This natural, mineral fertiliser is in short supply worldwide. It has to be imported into Kenya and so is expensive. Grandfather James and other farmers are trialling various fertiliser mixes with different compositions. The aim is to maximise harvests whilst at the same time minimising the use of rock phosphate.

The scientists regularly collect soil samples and plants from the trial fields. The samples are carefully analysed in the lab to identify substances in the soil and the quantity of each substance. The scientists also measure the fertility and moisture content of soil. The plants, including their root systems are measured accurately. In addition to agro-ecological data, the scientists are also collecting economic data as the long-term system comparison is seeking to compare the sustainability of organic and conventional farming methods. This includes a comparison of inputs and outputs, e.g. comparing labour or investment costs with sales revenues and soil fertility.

The first results of the long-term trials are now available (see Pages 4–5). They give encouragement to James Kuria, a firm believer in organic farming. "I should like my grandchildren to inherit fertile soils so that they can eat better, healthier food," stresses the grandfather.

For more information see:
www.biovision.ch/syscom-en

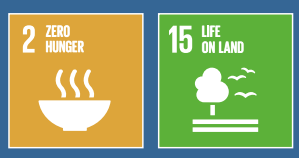
James Kuria Mwangi
Small-scale farmer and grandfather from the village of Karinga (Kenya)

"I want to produce good harvests and protect our health. That's why I have dispensed with dangerous chemicals."

Long-term System Comparison
(project started in 2005)

In a long-term scientific study in tropical countries, the Research Institute of Organic Agriculture (FIBL) is conducting a systematic comparison under comparable conditions of organic and conventional methods of farming.

- **Objectives of current project phase:**
  - Obtain scientific data on the contribution made by ecological agriculture to sustainable development
  - Develop locally adapted technologies
  - Achieve long-term, sustainable increases in agricultural yields
- **Project Budget 2016–2018:** CHF 247500
- **Account for donations:** PC 87-193093-4
- **Sustainable Development Goals:** Biovision is contributing to the change to sustainable development in line with the UN Agenda 2030. This project is making a tangible contribution to two of the 17 Sustainable Development Goals (SDGs):



James Kuria Mwangi is testing various fertiliser mixes with different compositions on his small farm (top). James is a grandfather and he wants his grandchildren to inherit healthy soils and so enjoy a good future. Soil and plant samples are analysed regularly in the laboratory (right).

Encouraging results

The results of the long-term study by FIBL, the Research Institute of Organic Agriculture are encouraging for both Biovision and its work. They provide further evidence that despite an increase in global population to 9 billion by 2050 we can still feed the world with ecological methods without having to transcend the borders of our planet.

The results provide a boost to the activities of Biovision, including its efforts to bring about a global change in agriculture and a holistic agro-ecological approach to sustainable food systems as well as its commitment to Goal 2 of the Sustainable Development Goals – Zero Hunger.

There is still much to do. We must now persuade governments worldwide to invest more into research into ecological farming and then to implement the findings.
We face major obstacles; the agro-industry has little interest in this approach as their business model is still based on an outdated, unsustainable mentality.

Despite that, I am optimistic about the future. I detect a growing realisation that the ecological approach can defeat hunger and also offer prospects for future generations. We can build on that.

Dr Hans Rudolf Herren
President of the Biovision Foundation

Biovision approach validated

The long-term study in Kenya by FiBL, the Research Institute of Organic Study has shown that organic farming methods can achieve comparable yields to conventional methods. It can also increase the incomes of farmers in the longer term.

David Fritz

The study in Thika and Chuka has been running since 2007 with local partners. It has clearly refuted the myth that organic agriculture needs more land to achieve the same yields. With lower production costs and higher selling prices, the profit from commercial organic farming exceeds that from conventional intensive agricultural systems from the fifth year onwards; after 6 years, the overall financial return is 53% higher (see graph).

The study also shows that organic methods of cultivation improve soil fertility. In addition, the absence of chemical inputs generally has a positive effect on natural eco-systems and human health. In parallel with its work in Kenya, FiBL is also conducting long-term research into cotton production in India and coffee in Bolivia. Here too, the results for organic methods have been encouraging.

The long-term systems comparison in tropical countries (SysCom) is designed to provide scientific evidence of the advantages and potential of organic methods and so allow the development of suitable programmes for the sustainable use of land.

Training and the dissemination of knowledge

The study in Kenya has a practical focus; the aim is not to compare industrial agriculture with highly specialised methods of organic farming. Rather it is comparing conventional farming systems with changes to crop rotation and other sustainable methods. This means that some of the results from the two methods are very similar. However, viewed in their entirety, the study clearly shows that the organic approach is a viable development model in tropical countries; in this context, it is important to expand further the dissemination of relevant knowledge and practical training.

The spread of practical knowledge on sustainable agriculture is crucial to the work of Biovision to help small-scale farmers in Africa improve their living conditions. Biovision is providing financial support for the long-term study in Kenya, as are the Swiss Agency for Development and Cooperation (SDC) the Liechtenstein Development Service (LED) and the COOP Fund for Sustainability in Switzerland.

In addition to the long-term study, which will continue until 2020, additional research is

The scientific long-term study is comparing organic and conventional systems of farming in Kenya. Over the next 6 years, it will collect, analyse and evaluate relevant input and output data.

being conducted on the farms themselves. Its aim is to develop locally adapted agricultural practices for sustainable systems of cultivation. In conjunction with local farmers, a series of field trials are being conducted on farms and research fields in order to trial innovative practices under real-life conditions and also incorporate farmers into the research process.

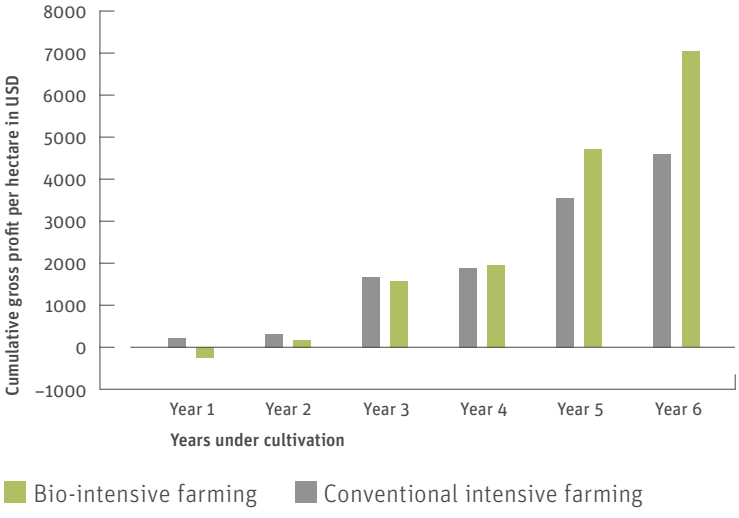
Support for the development of locally adapted, sustainable agricultural methods and the dissemination of this knowledge to farmers are at the heart of the Farmer Communication Programme (FCP) run by the Biovision Africa Trust (BvAT) in Nairobi and supported by the Biovision Foundation.

More research needed on external costs

David Amudavi, Director of BvAT in Nairobi considers that the research and the results to date from the long-term study are extremely useful in terms of encouraging sustainable food production in Africa. "This scientific evidence shows that our work offers a promising approach to efforts to improve food security," says Dr Amudavi in summing up the initial findings.

"The systems comparison does not throw light on every aspect of the food system and further research is both important and essential, e.g. into the nutritional value of foodstuffs and the effects on human health. Similarly, we urgently need more research into the external costs of conventional methods and the intensive use of chemicals – costs to the environment, climate change and human health," argued Dr Amudavi at the presentation of the SysCom results in June in Kenya.

COMPARISON OF INCOMES FROM FARMING SYSTEMS IN CHUKA



David Fritz
Head of Communication at Biovision

We need more locally adapted farming methods based on agro-ecological principles. However, organic farming methods remain of marginal importance in terms of global agricultural research. The need for research is enormous and the finance will have to come primarily from governments as the agro-industry shows little interest in these methods. The development of sustainable farming systems as a way of ending hunger and improving global food security is a central tenet of both Agenda 2030 and the work of Biovision.

The representative of SDC in Nairobi, Lukas Rüttimann, also takes the view that the SysCom study is making an important contribution to the UN Sustainability Development Goals: "In particular, if we are to achieve SDG 2 – 'End hunger, achieve food security and improved nutrition and promote sustainable agriculture' – we need robust, scientific studies," says Rüttimann. "This system comparison is, therefore, extremely valuable in terms of the future development of sustainable farming systems in East Africa".

www.biovision.ch/longterm

From rainforest to coastal forest

From rainforest to coastal forest: In February seven members of the East Usambara producer and environmental protection group in Tanzania visited their colleagues in the Kakamega rainforest of Kenya. The visit was organised by "Protecting biodiversity", a project supported by Biovision since 2005. During a trip of several days, the Tanzanian visitors picked up tips on how to set up and develop a business. At the same time they exchanged information on Kilimanjaro basil (ocimum kilimandscharicum) a medicinal plant grown and processed by farmer groups in both Kenya and Tanzania.

Since their return to the coastal forest of the Usambara Mountains, the Tanzanians have been implementing what they learned in Kenya. They have already established a demonstration field for growing Kilimanjaro basil and a garden with flowering plants for pollinating insects. Three primary schools, who are involved in the programme, are conducting environmental protection campaigns in their local area. Recently, the project in the East Usambara Mountains was visited by a Kenyan producer and a Tanzanian government representative. The exchange between the two countries is starting to bear fruit. | ls

www.biovision.ch/biodiversity

Members of the Kenyan and Tanzanian farmer and environmental protection groups during practical training in Kakamega.

Push Pull on the rise

Biovision is launching a major project to expand the Push-Pull method throughout sub-Saharan Africa. In so doing, it will make an important contribution to food security, the fight against poverty and so help to achieve the UN Sustainable Development Goals.

Peter Lüthi, Project Reporter Biovision

In sub-Sahara Africa, the stemborer moth and striga weed cause major reductions in maize and sorghum harvests; the combined economic loss is in the order of 4.7 billion USD per year.

The environmentally friendly Push-Pull method developed by icipe, the International Centre of Insect Physiology and Ecology and promoted by Biovision in East Africa for the last 14 years can significantly reduce losses, increase yields and improve soil fertility.

Huge potential for Push Pull in Africa

In a new project, 77 000 farmers outside East Africa will be trained in the Push Pull method. They will then introduce the method on their own farms. According to those responsible, the key to the project's success is the targeted dissemination of knowledge and the growing interest shown in the method by a range of African stakeholders.

The core element of the project is a new Contact and Coordination Office that will specialise in extending the use of Push Pull throughout sub-Saharan Africa. In order to establish the method, it will develop new partnerships with government agricultural agencies, seed companies and NGOs. Over the next 12 months, it is planned to train agricultural advisers in either Zambia or Malawi as Push-Pull instructors and to use radio to make farmers more aware of this biological method.

The new Coordination Office will provide advice to interested parties with immediate effect and so allow Push-Pull initiatives to be launched in Africa.

Contact: **push-pull@biovision.ch**

More information:
www.biovision.ch/push-pull

The interactive map shows the potential for Push Pull (green) as well as other data: www.push-pull.appspot.com

Biovision Symposium 2016: Stories from the laboratory

Stefan Heuss – comedian and inventor – will be a special guest at the Symposium providing humorous interludes.

Biovision takes its role as a "pioneer of change" very seriously. Many of its projects apply new solutions to problems in areas such as health and agriculture. How are innovative methods and new approaches developed? Who develops them and spreads their use? What flashes of genius turn out to be damp squibs and which of tomorrow's solutions are being researched today?

Answers to such questions will be available at this year's Biovision Symposium to be held at the Volkshaus in Zurich. Save the date now: **Saturday, 19 November 2016, 14.00–17.00 hours**

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Cover photo James Kuria Mwangi from the village of Karinga (Kenya) reads his grandchildren a story from "Globi the smart farmer". Photo: Peter Lüthi/Biovision

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Monsanto pilloried

Monsanto, the US multi-national and the world's largest manufacturer of genetically modified seeds and chemical pesticides (including glyphosate) is facing serious allegations: "Since the beginning of the 20th century, Monsanto has marketed a range of highly poisonous products causing illness or death to thousands of people and permanently damaging the environment". So reads the indictment for the "Monsanto Tribunal", a symbolic tribunal that from 14th to the 16th October in The Hague, the seat of the International Court of Justice will hold the US conglomerate to account.

Members of the organising committee include well-known figures such as Dr Vandana Shiva, the Indian human rights activist, Corinne Lepage, the former French Minister of the Environment, Professor Olivier De Schutter, the former UN special rapporteur for the right to food and Dr Hans Rudolf Herren, founder and President of the Biovision Foundation.

Hans Herren has high hopes for the impact of the symbolic trial; "At long last, Monsanto will be forced to make a public statement to the tribunal on the serious damage to humans, the environment and the economy. This should be a warning to all companies who ignore their responsibility to society and so endanger the future of mankind on Earth for short-term profits," he says. In addition to the trial, there will be series of symposia that will present and discuss future-proof solutions for sustainable food security. | pl

www.biovision.ch/monsanto-tribunal-en

New: our website on the 2030 Agenda for Sustainable Development

In Autumn 2015, the UN General Assembly in New York adopted Agenda 2030. With its 17 Sustainable Development Goals (SDGs) and 169 targets, it aims to secure the future of the planet. In the next 15 years, the signatories in developed, developing and transitional countries will be required to implement the goals on poverty, hunger, climate change, biodiversity and consumer behaviour. Biovision was and remains heavily involved in the process.

The website www.biovision.ch/agenda2030 contains current news and background information on the SDGs.

Keep up-to-date:
News of ecological developments
The Biovision website keeps you up-to-date with current news on ecological matters, national and international development cooperation and events as well as research and development into sustainable issues. Biovision staff report regularly on projects. Our homepage is updated constantly with interesting stories and so it is worth a regular visit! | ast

www.biovision.ch/en/news
www.biovision.ch/agenda2030-e

The Biovision projects are particularly targeting Goals 1, 2, 3, 12 and 15 of Agenda 2030.

Story from the life of Biovision member Norbert Stocker from Freienbach in Switzerland

I was an au-pair in Toronto looking after children

Peter Lüthi, Biovision

"Life has been good to me," says Norbert Stocker adding that "you need good fortune and the ability to influence life as much as possible". When he speaks of good fortune the 58-year old from Freienbach on Lake Zurich is referring to the guardian angel who keeps watch over him on snow shoe tours or on his regular sailing trips skippering an ocean-going boat. In particular, however, he is thinking of all the great people he has met during his life.

Norbert Stocker, the winner of the 2015 Radish Competition organised by Biovision is used to making his own destiny and travelling down unconventional paths. For example, after completing an apprenticeship as an electrician he spent a year in Canada. "When I was 21, I worked as an au-pair in Toronto looking after children," he says with a smile. There he met his first wife with whom he travelled through the US, Canada and Mexico. He then worked and at the same time completed a vocational course in business studies in Baden.

In his professional life, Norbert Stocker has always taken on challenges, e.g. managing process control systems in a company producing measurement and control equipment or in the sales department of a company making turbo-compressors and steam turbines. Stocker travelled a great deal, particularly in Eastern and South-Eastern Europe and also Russia. During innumerable business trips, he came to know many living in the former Yugoslavia, Poland, Hungary, Rumania, Bulgaria, Greece, Turkey and Israel.

Although he kept his residence in Switzerland, he lived the life of a nomad. This was both intense and stressful. Whilst working as an international project coordinator on Russian oil and gas projects, the market collapsed. The funding came to an end and the well-travelled professional was suddenly out of a job. That was the low point of his life. However, Norbert Stocker looked to the future and found a way out of his professional and personal crises.

So, how did an industrial networker find his way to Biovision? "I was impressed by Hans Rudolf Herren and the project work of Biovision," he admits. Stocker became aware of Herren and Biovision in 2013 when they were jointly awarded the Alternative Nobel Prize. I liked its approach, particularly on the question of global nutrition. "Food production come hell or high water and by whatever means – that can't be right," he says and adds that he objects to large corporations from the developed world forcing small farmers in developing countries to rely on genetic engineering and the associated chemicals. "This can easily suck farmers into a downward spiral that ends in disaster," he warns. In contrast, he is impressed with the way that Biovision disseminates information on ecological farming. "Maintaining and improving soil fertility and achieving sustainable increases in yields create an upward spiral," says Stocker with conviction. When it comes to his own diet, Norbert Stocker makes no concessions: he is vegan.