BIOVISION

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Sustainable Agriculture

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A future for all, naturally

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Enough for everyone, but not for everything: increasing meat consumption in industrialised countries and in emerging markets has an effect on food security for the world's poorest. To create 1 calorie of meat, 2 to 7 calories of plant matter must be produced as fodder. Changes in how food is produced and how we live our lives are absolutely essential.
Photo: Peter Lüthi / Biovision

NUTRITION AND HEALTH FOR ALL

Agriculture and world nutrition

In 2050 the world's population will reach 9 billion people. In order to feed them sufficiently, a fundamental change of course in agro-politics and research has to take place. And we must change how we live our lives. By Dr. Hans Rudolf Herren

Cover picture:
Enough, and healthy too? This is also a question for Africa: Snack time for a boy from Segoma, Tanzania.
Photo: Peter Lüthi / Biovision

Right now, 6.9 billion people live on this planet. In 2050 that number will reach more than 9 billion. Large population growth is expected in sub-Saharan Africa, where the percentage of undernourished people among the whole population is already the highest. The World Food Organisation estimates that global food production must be increased by 70% by 2050 in order to feed Earth's population. A paradoxical situation: we produce enough food today to feed 9 billion people, but a large portion of total production is lost before and after the harvest and during processing (40%), or destroyed after purchase (30%). It is therefore not only a question of 'how much', rather 'who, what, where, and how' we produce and consume food.

Green revolution

In the second half of the twentieth century, the so-called 'green revolution' led to more than a doubling of worldwide food production. In 1990, Swiss farmers harvested twice as much cereals and potatoes per hectare as in 1950, and used 7 times more fertiliser to achieve this. Intensive farming with its high-yield varieties, artificial fertilisers, pesticides and machines was also exported to developing countries, where the increases in yield were equally impressive. But only those farmers who could afford intensive production profited in the short term. Many small farmers fell into the debt trap through dependency on expensive fertilisers and pesticides and were forced to give up their farms. Rural exodus and misery was the result.

Leached soil, contaminated water, resistant pests and reduced species diversity were the ecological results of the green revolution and inadequate agricultural policy. In the meantime, 1.9 billion hectares of arable land has become to a greater or lesser extent, heavily degraded and maximum harvest oriented production has reached biological limits.

The industrial, export-oriented agricultural policy of some countries in Asia, Africa and Latin America encouraged displacement and impoverishment of the small farmer. Money was needed, especially for debt service. There was enough cheap food for the demands of the population, since the industrial countries hawked their surpluses with worldwide export subsidies worth billions. The International Monetary Fund forced some indebted countries to open their borders to food imports. Production for the at-home population was neglected. Today, 105 of 148 developing countries are net importers of food, although there is much agricultural potential in these countries.

Limited farming areas and land grabbing

Around 5 billion hectares are currently available for food production; 1.5 billion hectares of arable land and permanent crops and 3.5 billion hectares of grassland, meadows and extensively used steppes. Every year, 100,000 square kilometres – more than twice the size of Switzerland – are eroded as a result of intensive, unsuitable use. A further 10 million are threatened by salinization, largely due to incorrect irrigation. The fight over the scarce resource 'land' is already underway. Rich oil states, emerging markets such as China and South Korea, but also increasingly finance funds from the North are buying or leasing land in developing countries. Huge areas of monocultures are being cultivated for human consumption, animal feed or agro-fuels for export – even in countries like Ethiopia, where parts of the population suffer from malnutrition.

A change of course is essential

We have no choice: It is only possible to secure enough long term, healthy nutrition for 9 billion people by 2050 if we cease to use methods of production that leach the soil, decimate forests and destroy ecosystems. For this reason it is important to change course: away from overexploitation of nature towards sustainable, multifunctional agriculture. It means producing the optimal yield, rather than the maximum. We need methods of food production that conserve soil and water and that encourage natural soil fertility and biodiversity. We need agriculture that improves the lot of the rural population and that alleviates poverty.

In the IAASTD report* of 2008, the World Agriculture Council recommends concepts and measures for redesigning farming so that people will be able to deal with the problems of the future – a growing world population, changing markets, threatened ecosystems and climate change. We know what we have to do. Now we must do it.

Dr. Hans Rudolf Herren is president of the Biovision Foundation and World Food Prize laureate. He is head of the Millennium Institute in Washington, D.C.

*IAASTD report of 2008: www.agassessment.org

CHANGE OF COURSE IN AGRICULTURE

The Biovision Foundation currently implements many projects in East Africa that have as their goal the promotion of ecological farming, application of organic cultivation methods and sufficient healthy nutrition for all.

In 2010 the Biovision Foundation together with the Millennium Institute, instigated the project 'Change of Course in Agriculture', which will push the new direction so urgently needed in agriculture into public focus, demanding the attention of decision makers. One of the project's goals is to launch a widely-supported initiative to implement the findings of the IAASTD World Agricultural Report* at the 2012 Earth Summit in Rio.

Rio +20
UNCSD 2012

www.biovision.ch/change

Stretching to loosen up at the iTOF course in Ngiini village, Kenya. Having the workshop in their own village enables many mothers to take part. This is important as most of Kenya's small-scale farmers today are women.

Photo, top right: "The interest in my advice is enormous. I am convinced by the i-TOF advice service, as it enables the farmers to better use their resources. They learn to produce in a cost-effective, healthy way, and do not have to suffer with sub-standard nutrition." Victoria Mutinda, i-TOF Consultant, Kangundo, Kenya

Photo, below right: "I would like to learn much more. My previous knowledge was passed down from my parents, and that is not enough to improve productivity. Unfortunately, Victoria from iTOF cannot take so much time for our group."
Lucia Mbeti Nzioka, Ngiini Village, Kenya

Photos: Peter Lüthi / Biovision

Project i-TOF:

Advice that really makes a difference

In front of a small farmhouse in Ngiini village, Kenya, a good seventy women sit in the open air, listening carefully to Victoria Mutinda's guidance. The thirty-three year old agronomist and farmer was invited by the IKA NESA WOMEN'S GROUP, and she gives the captive audience an introduction to the methods used in organic farming. In front of her is a small laptop and carry case with the logo 'iTOF' – the name of Biovision's latest information project in Kenya. 'I' stands for information and inputs, and 'TOF' is the acronym of 'The Organic Farmer Magazine', Biovision's publication for farmers in East Africa.

It was the TOF editorial team that developed and initiated the iTOF concept. "Written advice is not always enough, because here most information exchange takes place orally and through practice", explains TOF Chief Editor Peter Baumgartner.

On site advice and training

Within the framework of a model project, 3 small iTOF advice centres were set up among farmers in the field, each led by a proven expert. While it was ensured that the recommended organic auxiliaries such as Diatomite are available at local agro-shops, farmers are primarily trained in the production of plants for use in pest control and to encourage the growth of maize, beans and vegetables.

The agricultural advisors each have a solar-powered computer, from which they can access the entire contents of the internet platform www.infonet-biovision.org. With this electronic library they have access at any time to every edition of the farmers' magazine and to answers to the most important questions in organic farming, as well as illustrative graphics and pictures.

Learning through practice

A core element of iTOF is the provision of practical courses on topics covered. It is up to the farmers' groups to apply to the iTOF centre in their region for a course, and to organise the day. The event takes place at a participant's farm, so that theory can be put into practice and questions can be answered on a one to one basis.

Since the start of the project in August 2009, 4860 people, two thirds of them women, have taken part in 212 iTOF courses. This makes a real difference in a country where farmers are mostly left alone to deal with their problems, although 80% of the population are directly or indirectly dependent on small-scale farming.

www.biovision.ch/projects

After attending a course, Mrs Bogalech, a sixty-nine year old small-scale farmer in Sebeta transformed her plot into a vegetable garden and has already inspired neighbours to follow suit: "The training was fantastic, not only because I learned new methods, but also because we farming folk received recognition. That is reassuring."
Photo: Flurina Wartmann / Biovision

Sebeta Biofarm, Ethiopia

Bio-Garden project on the home stretch

Since 2007, Biovision has been supporting the 'Sebeta Biofarm for the Visually Impaired and Marginalised Persons' project in Ethiopia. The goal of one of the first project phases was to train one hundred people with disability in organic farming, marketing of agricultural products, and health promotion. 82 vegetable beds were prepared and planted on the biofarm at the school for the blind. Since then the people have eaten organic food from their own garden, and the students have been able to earn a little money by selling the surplus products. Four cows supply the school with organic milk and provide dung for their biogas facility, which fuels the gas cooker in the kitchen.

In order to disseminate the concept of organic farming, another 1000 small-scale farmers from the area will be trained in phase II of the project. Many of them have already implemented knowledge they have gained. Flurina Wartmann, head of the project at Biovision, is pleased with progress: "The concept of the biofarm as a demonstration and training centre functions, and reaches farmers in the whole of the Sebeta District. The next goal is to transfer responsibility for the project to local partners and authorities. Thankfully, the Agricultural Office at the local level has taken on board components of organic farming in their training.

Commentary

Enough is not enough

Human health is strongly dependent on a healthy nutrition. For me as a physician, this correlation is obvious and I believe it should be paid more attention. If we want to improve people's health it is not enough to focus only the amount of food consumed. Enough is not enough. The food has to be healthy. The healthier people are, the better they can cope with extreme environmental conditions and resist prevailing diseases. Healthy people live a better life and are more productive. Apart from the human tragedies that are caused by diseases, they are one of the crucial hindering factors for development on the African continent.

The production of healthy nutrition is dependent on fertile soils, clean water and unpolluted air. We need insects that pollinate crops and a large variety of animals controlling pest diseases or livestock pulling ploughs. The quality of our food depends on the health of the environment and vice versa. The way our food is produced influences the world climate and the natural resources.

Everything is connected to each other – everything is linked up. This needs to be considered, especially in the context of development cooperation. In this regard, BEA contributes to support the health promotion in Ethiopia by following a holistic approach.

Our scope of work goes together well with the vision and mission of Biovision, our long-standing partner organisation in Switzerland. By supporting capacity building, Biovision aims to improve the health of humans, animals, plants and the environment.

Selamavit Aseffa
Dr. Selamavit Aseffa is a physician and executing director of BioEconomy Africa in Addis Abeba, Biovision's Ethiopian partner organisation. She is married and has three children.
www.bioeconomyafrica.org

Photo: Verena Albertin / Biovision

A legacy for Biovision

Make a difference – leave your mark

It seldom occurs to people to consider their wills when they are in the prime of life, but there are good reasons to settle your estate unhurriedly and with a clear head:

- You can achieve timely clarity, thereby preventing misunderstandings and disputes.
- You can make independent decisions regarding your assets, and avoid them being passed automatically to the state.
- You save on inheritance and gift tax, as institutions like Biovision are tax-exempt.
- You have the assurance that your bequest will achieve a sustainable effect.

An increasing number of people are deciding to leave their estates (or parts of them) to non-profit organizations, thereby effecting change even when their life is over. This allows institutions such as the Biovision Foundation to offer help for self-help and achieve long-term goals.It makes sense to make a will even when your estate is not very large. Small bequests – when utilised correctly – have great impact.

A new guide from Biovision
Do you wish to shape the future as you would like to see it, and leave your mark after you have passed on? The Biovision Foundation has a new guidebook which is very helpful in the decision-making process and composition of a will. You can order it free from Biovision.

Chantal Sierro
Biovision colleague Chantal Sierro is happy to answer questions and receive orders for the free Will and Testament Guide. Upon request, Chantal can also act as trust counsel.

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www.infonet-biovision.org

infonet-biovision

On the internet platform www.infonet-biovision.org, locally relevant information on the 50 most important crop plants in East Africa and their most common diseases and pests is available free of charge. Here is an example about mangoes:

The female mango fruit fly (pictured: *Ceratitis casyro*) lays its eggs in the ripening fruit. The growing larvae eat the flesh of the fruit and destroy the mangoes.
Photos: Peter Lüthi / Biovision und *icipe*

Click on Infonet-Biovision

Organic mango pest control

The mango tree is susceptible to pests and diseases that can cause great crop losses.

All pests have natural predators such as ladybird larvae, wasps, spiders or parasitic fungi that can be encouraged by planting mixed cultures in various configurations and by promoting the growth of diverse, ground-covering plants and trees.

Organic strategy

The most common diseases are caused by fungi and bacteria, occurrence of which can be avoided by utilizing uncontaminated plant material. Intact soil, the use of healthy, uncontaminated shoots and seedlings and resistant varieties as well as the isolation of infected plant material are the most important prevention measures.

To avoid crop losses due to pests like fruit flies or consumption by birds, the fruit should be wrapped in paper when still on the tree.

Sesilia George (left) and Hadiga Madege are members of the Ocimum group NGUVU ZASI ASILIA (Nature – People – Power) in Segoma, Tanzania. Biovision supports the group in cultivating Kilimanjaro basil, beekeeping and environmental education within the framework of a project designed to protect biodiversity.

Cultivation of Kilimanjaro basil (*Ocimum kilimandscharicum*) is the most important source of income today for the people of Segoma, and it enables them to earn an income without destroying the forest.

Photos: Peter Lüthi / Biovision

From the life of Sesilia George and Hadiga Madege

"Happy and healthy children are what is most important"

In the shadow of the forest it is surprisingly cool. Hadiga Madege and Sesilia George, two women from Segoma, a village in Tanzania's Usambara Mountain region, escape the brutal heat and follow a winding path through thick foliage. This forest is one of the protected coastal forests and enjoys a rich variety of rare plant and animal species of great importance. Yet it is under great threat from slash and burn agriculture, logging for construction and firewood and from illegal gold mining.

The two women from Segoma have reached a leaf-lined hollow. They sit down, and Hadiga, the elder of the two, begins to speak: "Our life isn't how I would wish it. As farmers, despite hard work we cannot make ends meet and we never have enough money." Her sister-in-law Sesilia nods in agreement and expands: "We have a hard existence. One of the reasons for this is my lack of education. I would have loved to have been a teacher, but my parents did not have enough money. After Year 7 I had to leave school. At that time I was seventeen. I married at twenty, and my first child came in that same year; now I have two children and I do not wish to have any more – we can't afford to have any more."

Family planning is also important for Mrs Madege, not least because of her own childhood: "There were ten of us. I was the best at school and I wanted to study, but my parents gave preference to my younger brother. So I had to bury my dream to be a nurse. I could always do a First Aid course later. That would be a great help to the village, but unfortunately it does not give me an income."

But there are also rays of light in the women's lives. Since 2009 they have been cultivating Kilimanjaro basil with their husbands and four other families, which they then dry out in a simple drying plant and sell to *icipe** for the manufacture of Naturub, a type of African 'Tiger Balm'. "This brings us in around 50,000 Tanzanian shillings a month (over 30 Swiss francs)", says Hadiga. And Sesilia replies that one of the families even earns 75 000 shillings. For Hadiga Madege, the sale of ocimum is her main source of income. "I can secure a secondary education for my children", she says. "That counts a great deal, since the most important thing in my life is having happy and healthy children!"

A component of the Medicinal Plants project supported by Biovision is the sensitisation of the population to protection of the forest and environment. To this end, a library with teaching material on ecological topics and sustainable agriculture has been set up in the village school.

** icipe: African Insect Science for Food and Health www.icipe.org*

On the 25th March 2010, 1400 people were inspired and moved by Sol Gabetta (Cello soloist) and Basel Chamber Orchestra under Paul McCreesh at the Benefit Concert.
Photo: Roland Schmid / Biovision

Photo, below right: Biovision at COP4 in 2009 in Genf: Charles Mbogo, head of malaria projects informs the delegation from Zambia on environmentally friendly malaria control.
Photo: Peter Lüthi / Biovision

Benefit Concert with Sol and the Basel Chamber Orchestra

105 000 francs for mothers and children in Africa!

A year ago, world-class cellist Sol Gabetta and the Basel Chamber Orchestra under Paul McCreesh played into the hearts of the audience with an inspiring sold-out concert at the Stadtcasino Basel. The benefit event for Biovision and the mothers and children of Africa, made possible by Bank Sarasin and Ricola, and charmingly moderated by Sandra Studer, was a complete success. After subtraction of costs, 105,000 francs went to the Biovision Foundation's malaria program in East Africa. This ensures the continuation of the projects in Kenya and Ethiopia into 2012.

Sincere thanks to Sol Gabetta! Biovision also extends heartfelt thanks to all other participants and to the many audience members who attended for their valued support!

Concert images:
www.biovision.ch/concert

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Mercy Kiyapyap and Paul Losute:

A wedding for Project Cabesi

The 2nd December 2010 was Mercy Kiyapyap and Paul Losute's big day. They celebrated a traditional Pokot wedding in the open air in Kerio Valley, surrounded by 400 guests. Mercy and Paul got to know each other in 2006 through Biovision's Project Cabesi, where they were both working as field coordinators. Rolf Gloor, head of Project Cabesi, was among the guests. "This wedding has really touched me", says the long-term colleague of Mercy and Paul. He is positive about the future of the project. "Both of them take their growing responsibility for Cabesi very seriously. Their alliance will have a positive effect on the sustainability of the project."

Stockholm Convention:

Reduction expected in DDT use

Good news on DDT: the UN group of experts that is drafting the recommendations for the next conference of Stockholm Convention member states (COP 5) in Genf, from 25th to 29th April, is recommending stricter guidelines in the use of DDT for malaria control. In their report they call for new measures to ensure the correct use of DDT. In this way, both the damaging effects of DDT and its misuse will be reduced. In addition, it became known at an event organised by Biovision in Genf, that India would likely soon cease production of DDT completely. At the moment, India is the only producer of DDT. The Biovision Foundation, which has been dedicated for many years to a total ban on DDT, has long been active on the political level and will campaign at the conference for the implementation of the expert recommendations and for the promotion of alternatives to DDT.