Enough is not enough
Well-nourished is more than just being
Ugali made from maize, matoke from green bananas and chapatti from wheat flour: These side dishes, all rich in starch, dominate the daily diet of Kenyans. Biovision is encouraging a more balanced diet and supporting a project promoting a variety of traditional leafy vegetables. 

Meng Tian, Biovision

The Vihiga District in Western Kenya lies close to the Equator. It is a hilly region and one of the most densely populated parts of Kenya. In an area where 87% of households work on the land and 45% of the population is under 15 years of age, Biovision and its partner Bioversity International are working with farming families on “Diversity from field to fork”, a project that covers the entire supply chain. Members of five farmer groups are learning how to produce high-quality seeds from traditional varieties of leafy vegetables and how to grow and market those vegetables. In addition, it trains Community Health Volunteers who then go into local villages and provide advice on what constitutes a balanced diet.

More vitamins means less illness
Most of the members of the farmer groups are women. Florence Oside from Masana explains that in the past she only cooked a few vegetables for her family; they did not grow vegetables and had to buy them from the market. Often she only bought sukuma wiki (African kale), a common vegetable throughout Kenya. As a result of the project, she now knows the importance of a varied diet and today picks a wide range of leafy vegetables from her own kitchen garden. “Best of all, my children like ugali and vegetables such as saga (spider plant) from the garden. This gives them more vitamins, they are sick less often and grow more quickly,” she says.

Higher incomes boost self-confidence
Growing vegetables enriches the daily diet and saves money. For Eunice Kimiya from Wanondi, the produce from her kitchen garden has even become a source of income (see Page 8). This makes the fifty-year-old very happy. “In the past I spent about 1000 Kenyan shillings every week on vegetables. Now I earn 400–500 Kenyan shillings every day”. Isaac Otieno, Research Assistant working for our partner Bioversity International confirms that giving farmers the skills to grow traditional leafy vegetables boosts their self-confidence. “They have a greater belief in their own ability,” he stresses; it’s a seed that will grow further in future. At present the farmers are only selling their produce to those who live in the immediate vicinity but all are keen to double their efforts. They want to professionalise their seed production and are planning to open Resources Centres by the end of the year. They can then offer training in the cultivation and marketing of a diverse range of vegetable varieties and disseminate information on healthy eating. In the next few years, the farmer groups plan to develop other ideas such as the creation of seed banks and improvements to product marketing.

For more information on the project see: www.biovision.ch/vegetables
The project is reviving traditional leafy vegetables. They are now much more common in the Vihiga District, providing children with natural vitamins and nutrients and helping them grow (top). The project is adding variety and diversity to the daily diet – even if visually the various vegetable varieties are difficult to distinguish (middle left). It is opening up opportunities to earn money from the sale of vegetable seeds (bottom left) and is boosting the health and self-confidence of farming families (right).
Food security

“Enough is not enough”. The title of Konstantin Wecker’s song hits the nail on the head and aptly describes the issue of global food security: In order to overcome global hunger, it is not enough just to provide everyone with enough calories from maize, rice or cereals. People need more than a full stomach for a good life and health. In addition to carbohydrates and proteins, they need vitamins and minerals. Food security will only exist when the world’s population has enough food and a balanced diet. This is crucial if we are to defeat global hunger.

If future generations are to have the opportunity to live their life well, in good health and with dignity we must stop living on our capital but live on the interest instead. We must stop the overexploitation of natural resources and we must do it now.

We at Biovision see ecological agriculture as the key to sustainable food security and this belief lies at the heart of our projects. In Switzerland we are providing consumers with the information they need to select products that are fairer and more sustainable. In East Africa, we are training smallholders in ecological farming methods. Nationally and internationally we are successfully exerting pressure on political decision makers.

Linking agriculture and nutrition

In recent history, agricultural systems worldwide have principally concentrated on producing a handful of staple grain crops, providing for full bellies and farmer income, but not making available the range of foods needed for health. All too often therefore, agriculture systems fail to provide the foods that would allow for diverse, nutritious, affordable, sustainable diets for all.

Marjolein Smit-Mwanamwenge

Food security is defined by the Food and Agriculture Organization (FAO) as “when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preference for an active and healthy life”. Healthy diets and good nutrition are inherent in the definition, but are often components that are minimised in favour of producing enough calories. Many countries in Sub Saharan Africa are facing a double burden of malnutrition; whilst a large number of children are chronically malnourished, the number of people who are overweight and affected by chronic diseases is growing. Zambia for instance has high levels of child undernutrition with 40 per cent of children suffering from chronic malnutrition, whilst on the other hand, 23 per cent of women are considered overweight or obese, also a result of poor diets, and levels of related chronic disease such as hypertension and diabetes are high. What connects the issues of hunger, malnutrition and chronic disease is the availability and accessibility of diverse foods all year round for healthy and sustainable diets.

Linking agriculture to nutrition

The nutritional status of an individual is determined by the quantity and quality of foods consumed and the ability of the body to use the nutrients. It is further influenced by the interaction of food, care and health status. Agriculture plays a pivotal role in improving diets and nutrition by increasing the availability of diverse and nutritious foods through home production and through increasing the availability of foods on markets. Agriculture can also provide a source of income for food and health related purchases and can influence nutrition through empowering women by increasing women’s ability to control income and make decisions on food.

In Zambia, like in some other African countries, agricultural production is focussed
on Linking agriculture and nutrition one staple cereal: maize, with more than 80 per cent of small holder households producing three or fewer crops. Studies have shown that growing diverse crops in your field is associated with more diverse diets. The availability of legumes, fish, eggs and milk in Zambia reduced from already low levels over the last three decades, whilst the availability of fats and oils and starchy foods increased. Therefore, the diet may not provide adequate nutrients needed for a healthy diet.

Diversity improves resilience

Mono-cropping, with little to no production diversity, weakens natural systems. It depletes soil fertility and encourages pests and diseases, creating a greater dependency on high-cost chemical fertilizers and pesticides and resulting in a lack of resilience in food systems. An example is the recent army worm attack in Zambia, which affected maize production, but left other crops unaffected. Crop diversification can improve resilience in a variety of ways: by engendering a greater ability to suppress pest outbreaks and dampen pathogen transmission; buffering crop production from the effects of greater climate variability and extreme events; and improving soil fertility through diversification with leguminous crops.

Agricultural biodiversity is also important for food and nutritional security, where it can potentially act as a safety net against hunger, a source of nutrients for improved dietary diversity and quality, and a basis for strengthening local food systems and environmental sustainability. One way for agricultural systems to promote both resilient production and positive nutrition outcomes is therefore through production diversity.

Markets and sustainable diets

Improving dietary diversity on the plate can only be achieved if diverse foods are available on the farm for those who grow their own food, and affordable and accessible for those who purchase their foods. Over time, the typical diet in Africa has gone from mainly home-produced to being to some extent purchased, even among the rural poor. There are various barriers for farmers in accessing markets to sell produce beyond maize, including the availability of diverse agricultural inputs from local agro-dealers, proximity to markets and issues around demand for diverse crops. Consumers also face challenges in accessing a range of healthy foods on markets including income, food prices, ability to make decisions on food choices and households’ access to food markets.

Dietary diversity is widely recognized as an important measure for the quality of a diet, with diverse diets increasing the likelihood of adequate intake of essential nutrients. Therefore, staple foods must be complemented with foods rich in nutrients such as vegetables, fruits, legumes, dairy and meat.

Indigenous vegetables offer a unique opportunity to improve diets as they are rich in nutrients but also adapted to local conditions. These vegetables play an important role in diversifying farming systems as indigenous vegetables are tolerant to harsh environments and mostly wild-harvested and not cultivated. Eating a diverse, nutritious diet depends on enabling policy and political environments that makes food available, accessible, affordable, and acceptable. Therefore, improving nutrition must be addressed within agriculture and food systems and be recognized as an avenue to improved diets and food security.

SHARE OF ENERGY SUPPLY FROM DIFFERENT FOOD GROUPS IN ZAMBIA (large calories per capita)

- Maize, 52%
- Remaining Cereals, 7%
- Starchy Roots, 13%
- Pulses, 1%
- Vegetables and Fruits, 2%
- Vegetal Oils, 13%
- Milk and Eggs, 1%
- Meat and Fish, 4%
- Sugar and Sweeteners, 5%
- Divers, 2%

Chart based on FAO data, 2013

The quantity, quality and diversity of foods in diets are largely affected by the availability and accessibility of food both on the market and from farmers’ own production.

In several African countries, agricultural production is focussed on one staple cereal – maize (photo on left). Biovision is encouraging the growing of traditional vegetable varieties, e.g. in its projects “Reviving traditional knowledge” (photo on right) and “Diversity from field to fork”.

Marjolein Smit-Mwanamwenge (MSc), Nutrition consultant based in Lusaka, Zambia
Projects

The fall armyworm originated in America. In January 2016, the moths and their larvae suddenly turned up in Nigeria having presumably stowed away on a ship bound for Africa. The caterpillars are now causing damage in almost every African country south of the Sahara. They are infesting a wide range of plants but in Africa, the greatest concern is the damage to maize, the staple food of more than 200 million people. For example in Zambia, yields have dropped on average by 40% and in Ghana by 45%.

Good fortune strikes again!

A small caterpillar is filling Africa with fear: The fall armyworm is spreading rapidly throughout the African continent and is devastating maize crops. The Push-Pull fields advocated by Biovision remain largely spared.

Peter Lüthi, Biovision

The fall armyworm originated in America. In January 2016, the moths and their larvae suddenly turned up in Nigeria having presumably stowed away on a ship bound for Africa. The caterpillars are now causing damage in almost every African country south of the Sahara. They are infesting a wide range of plants but in Africa, the greatest concern is the damage to maize, the staple food of more than 200 million people. For example in Zambia, yields have dropped on average by 40% and in Ghana by 45%.

A pleasant surprise

In May 2017, David Okiya from Western Kenya reported to icipe*, the insect research institute that the maize fields using the biological Push-Pull method were largely spared the effects of fall armyworm. In contrast in his other fields, the damage was enormous. Similar reports came from Treza Auma, who lives some 350 kilometres away from David: “My conventional maize fields have been totally overrun by the armyworms whereas the Push-Pull fields of my mother-in-law, just 30 metres away, have escaped”.

The Push-Pull method was developed by icipe as a biological way of controlling the stemborer moth. Biovision has supported the spread of this successful method since 2001. Even at that time the results were surprising and it was clear that the legume “desmodium” used in the Push-Pull method was effective not only against the stemborer moth but also the even more damaging striga weed. In the meantime, the insect researchers at icipe have established that desmodium is also effective against the fall armyworm. On average, the incidence of the damaging caterpillars in Push-Pull-fields is 80% lower than in conventional fields. Push-Pull users are now benefiting from a second stroke of good fortune.

* icipe: International Centre of Insect Physiology and Ecology in Nairobi

www.biovision.ch/ccga
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Every year the same question: What to give someone at Christmas if they already have everything? The answer might be a present that helps people in Africa. Find out more about our gift certificate. It is available to print and complete yourself!

Biovision will spend your donation in the Siraro Region of Ethiopia where local people are suffering from drought, hunger and poverty. Biovision is providing support in the form of courses in beekeeping and the production and sale of honey.

You can help by giving a modern beehive: www.biovision.ch/gift

Beekeeping provides people in Siraro with an additional source of income and helps them escape reliance on emergency aid.

The Biovision Team has managed to distil fundamental lessons from 20 very different “beacon projects” helped in part by the tried-and-tested method of Post-it notes (from left: Fabio Leippert, Natalina Töndury and Maurus Bamert).

Beacons of hope

What do an elephant conservation programme in Zambia, a Cuban farmer movement and a sustainability plan for the Vanuatu archipelago have in common and what are the differences?

Fabio Leippert, Biovision

All three initiatives have demonstrated that you can move away from overexploitation towards a more ecological and fairer food system. They were just three of more than 130 projects analysed and compared by Biovision. From this evaluation, we then distilled fundamental lessons for the transformation of food systems. We also identified the commonest challenges on route to sustainability. Biovision was commissioned by the “Global Alliance for the Future of Food” to carry out this complex study. The Alliance had previously called for bids from organisations who were able to make a representative selection from an initial list of 130 known projects throughout the world and then to whittle that number down to 20. Called “beacon projects”, they had to be as diverse as possible, come from all over the world, cover the entire spectrum from field to policy and involve players ranging from the private sector to non-profit organisations.

Honour and burden for Biovision

Biovision was awarded the evaluation contract and in so doing inherited a hard nut to crack. It had to investigate the approaches, opportunities and difficulties faced by very different projects. The Biovision team assembled extensive data and working in cooperation with internationally recognised researchers, it developed the required tools and robust methodology that allowed an evaluation of the data. The results are now available. To sum up: If we are to change course, we must have integrated, agro-ecological methods of production. Such methods are particularly relevant in order to deal effectively with climate change – the beacon projects all cited climate change as their greatest challenge. It is also essential that consumers share some of the responsibility.

www.biovision.ch/boh-en
Eunice Kimiya welcomes us and immediately apologises for not tidying up. Her father-in-law died a few days ago and since then life has been turned upside down. The mother of four has close family staying with her and as host she is now busy organising the funeral.

The fifty-year old farmer has not slept much but that is nothing new. Her day routinely starts at five in the morning and ends at ten at night. However, for some time she has found it easier to get up in the morning thanks to new and fulfilling tasks: work in her kitchen garden and as a Community Health Volunteer. “Before we did not know why a varied diet was so important,” she explains. “We only knew that there were carbohydrates, proteins and vitamins”.

As part of the project “Diversity from field to fork”, Eunice has come to know and appreciate new varieties of traditional leafy vegetables. Like many other farming families in the area, her main crops had been maize, yams and bananas. Now the list is somewhat longer: spinach, cow peas, kale, amaranth, spider plant, black nightshade, pulses such as crotalaria, jute mallow, pumpkins, carrots, spring onions and many more.

Her pleasure comes not just from growing the vegetables but also from producing seeds from the vegetables. The seeds are then sold, creating a new and important source of income for her family. “Previously, I spent too much time and money at the market buying vegetables. I no longer have to do this as I can grow enough for my family. I am so proud of that,” says our superwoman with conviction.

“I can provide for my family; that makes me so proud”

As the wife of a teacher, she is very much aware of the value of the dissemination of knowledge. Her husband now includes nutrition into his lessons. Eunice is convinced that the project ought to continue. “We want to learn even more,” she says. With the planned creation of a local Resource Centre, her wish will soon be fulfilled.

Video interview with Eunice: www.biovision.ch/eunice-en