

# Walking the talk in nutrition-sensitive agriculture

How can the concept of nutrition-sensitive agriculture be translated into concrete projects in the context of development cooperation? Four examples from the activities of GIZ.

Over the past years, aspects of nutrition have gained more importance in German development cooperation. This is also reflected in the Strategy Paper "Promoting Sustainable Agriculture" of Germany's Federal Ministry for Economic Cooperation and Development (BMZ), which calls for a stronger contribution of agricultural programmes to food and nutrition security. Therefore, the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) as implementing agency has focused its agricultural approaches more strongly on addressing aspects of food and nutrition security. To do so, GIZ had to develop an operational understanding of nutrition-sensitive agriculture which, while fitting in with the approaches pursued in the existing agricultural programmes (e.g. the value chain approach), also encompasses the required additional nutrition aspects.

According to the concept of nutrition-sensitive agriculture (see also article on pages 6–8), various pathways can lead to improved nutrition. The most suitable ones for the current GIZ agricultural portfolio seem to be:

1) to increase investments in value chains of nutritious food crops or livestock products (e.g. milk or pulses) in order to achieve higher availability and diversity of nutritious food at country level and

2) to translate food diversity into dietary diversity by nutrition-sensitive accompanying measures alongside agricultural programmes (e.g. nutrition education or consumer awareness) in order to achieve better nutrition.

Both pathways require a closer look at the food and nutrition security situation in the respective country or region that an agricultural programme engages in. While the first one has already been practised in many value chain programmes world-wide, the second one requires more adjustment and conceptual discussion – also with

our partners. Developing effective nutrition-sensitive activities and measuring the contribution of agricultural projects to food and nutrition security is not always easy, but GIZ is learning here and gaining experiences from the first good practices.

However, the ultimate goal of nutrition sensitive-agriculture remains a challenge: individual behaviour change in nutrition – which takes time and is therefore hard to achieve in ever shorter programme planning cycles. Yet GIZ has taken on the challenge, as the following four project examples illustrate.

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## Promoting biofortified sweet potatoes in Western Kenya

Kenya's west is one of its poorest regions. About 700,000 smallholder households in the project intervention area cultivate, on average, less than one hectare of often degraded land. A fifth of the population are malnourished.

Sweet potato is a versatile and nutritious crop that copes with difficult climatic conditions and can even be grown in poor soils. Cultivation patterns are largely aligned to the bimodal rainfall pattern. It is this adaptive potential and the fact that the sweet potato is traditionally cultivated by women that have made it an important pillar of household food security in Western Kenya.

During the past decade, the orange-fleshed sweet potato (OFSP) varieties have had the attention of international research organisations such as the Consultative Group on International Agricultural Research (CGIAR). OFSP varieties have been improved through selective breeding for their vitamin A content. Available varieties range in their content of  $\beta$ -carotene between 4–15 mg/100 g, compared to the widely used traditional varieties (0–1 mg for white-fleshed and 1–2 mg for yellow-fleshed sweet potato).

They show a much higher yield potential (4 t/ha) than conventional sweet potatoes (0.6–1 t/ha) and a higher resistance to weevils. The high vitamin A content makes the crop an important health factor for household nutrition, especially for children. Additionally, the nutritious benefit of the crop has attracted commercial interest: various community-based processing procedures allow OFSPs to be used by local self-help bakery groups at regional and national level. Flower millers fortify maize flour with them, and the food industry uses OFSP puree to enhance the nutritious value of various food products. OFSPs offer substantial income opportunities to local communities, especially to women, through value addition.

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The three-year project “**Food security through improved agricultural productivity in Western Kenya**” started in 2014. The aim is to promote sweet potato production, thereby stabilising food and nutrition security at household level and improving farmers’ income through different options for value addition. Here, GIZ and partners apply a value chain approach with activities like

- cooperation with agricultural research for the establishment of commercial OFSP seed vine propagation and dissemination systems for high quality planting material reaching up to 10,000 farmers;
- cooperation with local NGOs to conduct training courses on local value addition and processing, especially for rural women groups;
- support to the development of local processing technologies (flour, puree) for the development of different product ranges;
- cooperation with the private sector to develop the expansion of the fresh produce markets and processing capacities, e.g. for puree.

The project region is the counties of Siaya, Kakamega and Bungoma in West Kenya, totalling 7,737 km<sup>2</sup> with a population of 3,878 million people (2009 census). OFSP propagation is one of the value chains supported under the Green Innovation Programme.

The absence of a commercial market outlet for OFSP tubers and products in past years has been a disincentive for the upscaling of seed supply systems. The vastly growing commercial interest of the food industry, mainly large-scale supermarket bakeries, has provided a massive impetus for broad-scaled production of OFSP tubers.

The immediate challenge is to upscale the vegetative seed vine multiplication capacities at all levels to sustain broad-based OFSP production. Depending on natural production conditions and planting techniques, seed plots can supply planting material for an area 8–15 times larger; for instance, wheat has a ratio of 60–80 times the size of the seed plot. With the expansion of seed vine propagation by the next rainy season, approx. 2.000 tuber producers will have access to improved planting material. This number is expected to more than double by the end of 2016.

With people having learnt that the OFSP is more nutritious and more resistant to disease than the traditional varieties and has

value addition potential for income-generation, it is now in high demand. In parallel, the project aims to expand the supply to the regional and national markets. The programme thus supports private and public extension services and raises awareness of the nutritious benefits as well as the commercial potential that OFSP varieties offer.

A health-conscious middle class in Kenya are demanding nutritious food – therefore, the programme will continue to support the improved OFSP value chain and invest in up-scaling of piloted technologies to utilise the full commercial and nutrition potential of the crop to raise the incomes of the rural population in Western Kenya.

*Dr. Andrea Bahm, Karina Brenneis, Heike Weber, Josef Grimm*



*Advertising campaign of Tuskie's supermarkets for sweet potato bread.*

*Photo: Ruth Niedermüller*

## Supporting female cotton growers in soybean processing in Benin

According to the Comprehensive Food Security and Vulnerability Analysis of the World Food Programme in 2013, eleven per cent of the households in Benin are facing severe or moderate food insecurity, and 34 per cent of the households are classified as marginally food secure. The average rate of food insecurity is higher in rural areas (15 %).

The overall objective of the **Competitive African Cotton Initiative (COMPACI)** that runs from 2009 to 2016 in eleven sub-Saharan countries is to improve sustainable cotton production and thus the living conditions of smallholder cotton farming households

while strengthening women’s empowerment, food security and nutrition. Within the COMPACI project area in Benin, Atacora and Donga are among the most food insecure departments. Despite the diversity of cultivated food products in these areas, these products are not properly used to cover the food and nutritional needs of the population. Against this background, COMPACI decided to support soybean production and processing in addition to its promoting the cotton value chain. This additional work stream provides an appropriate way to contribute to the project’s overall food security and nutrition objective, because over the past few years, soybean has returned to the eating habits of many people in

Benin. Soy cheese can validly replace meat and fish in many households as a source of protein.

COMPACI in Benin has a strong focus on women's groups. Already organised women's groups are supported in strengthening their organisational capacity and are supplied with the necessary equipment. The main nutrition activity of the programme has been to engage women in cotton producing households in trainings for improved techniques of processing soy cheese. This small-scale pilot built the capacity of female cotton producers on technical methods of soybean production and on agricultural entrepreneurship for better produce and marketing. Female processors were sensitised to create their own associations or cooperatives.



*Women's groups are trained in soy cheese production.*

*Photo: Team COMPACI/giz*

In the process of women empowerment and enhanced professionalism of the activities, today, COMPACI supports the establishment and operation of centres for the promotion of female entrepreneurship (*centres de promotion de l'entrepreneuriat féminin, CePEF*). These centres mobilise soybean and rice processing women and help them to work out their organisational structures. At the same time, business partnerships between these women groups and other stakeholders along the value chain are created. The initial impacts are that women groups get access to credit and to better markets. In the future, these centres could become places of peer-learning and coaching for other women who also want to make progress in their entrepreneurial agricultural activities.

More than 3,000 women were trained on technical topics of production, entrepreneurship, hygiene, and marketing of the produce, while 264 women received credit and nine women's groups now have their own well-functioning centres for promotion of female entrepreneurship (CePEF). In view of these positive impacts, COMPACI will continue these nutrition-sensitive activities and scale up the number of women reached.

*Rodrigue D.Y. Sogan, Colette Bounde*

## Providing family nutrition training in Ghana and Nigeria

The **Competitive African Rice Initiative – CARI** – is a value chain initiative aimed to increase the income of poor households in rice producing regions of Ghana, Nigeria, Burkina Faso and Tanzania. CARI improves farm productivity, provides technical and financial services and connects producers, processors and consumers by using a value chain approach. In addition to these activities, the initiative pursues various nutrition-sensitive interventions.

The typical diet consumed in rice-producing households is characterised by a high intake of cereals and a lack of essential micronutrients such as vitamin A and iron. Child undernutrition remains a challenge, and subnational data indicate vast regional disparities and identify regions with a very high burden of undernutrition.

In Ghana and Nigeria, for example, only every tenth child aged 6–23 months receives an adequate diet by international standards. Since women are most likely to invest in family nutrition, CARI supports female household members in increasing their earnings from the parboiling and trading of rice through training in technical and business skills. CARI also helps rice-producing households diversify their agricultural production towards vitamin-rich and protein-rich crops. Thus the programme increases the availability of a diverse basket of food at household level. Finally, CARI includes a nutrition education component to stimulate behaviour change for improved nutrition.



*Training of trainers for nutrition education.*

*Photo: CARI Nigeria*

This "Family Nutrition Training" concept is based on a training module developed by the **Sustainable Smallholder Agri-Business Programme (SSAB)** of GIZ as part of the Farmer Business Schools (FBS) approach. It includes messages on the importance of a diversified diet, post-harvest food handling, and storage and adequate preparation of balanced and healthy meals. Counsel-

ling on breastfeeding and complementary feeding for infants and young children as well as basic Water, Sanitation and Hygiene (so-called WASH) aspects also form integral part of the training. The CARI programme works hard to ensure that this training is not a stand-alone activity but that it is integrated into interventions that enhance rice yields and crop diversification. In Ghana, CARI teams up with governmental agricultural extension services, the Women in Agriculture Development Unit (WIAD) of the Ministry of Food and Agriculture. WIAD, in turn, coordinates with private extension agents to reach the same households for maximum effectiveness of the agricultural and the nutrition intervention. In this context, CARI provides demand-oriented, high-quality, up-to-date training materials and contributes to capacity building through the training of WIAD staff.

By 2017, CARI and its partners will have targeted 8,000 male and female farmers in Ghana and 11,000 in Nigeria with family nutrition trainings. In addition, with the support of SSAB, the national Cocoa Board Ghana is integrating this nutrition training into the national cocoa extension curriculum, thus reaching out to an additional group of 35,000 smallholders in Ghana in 2016. And there is further good nutrition news. Via the Ghanaian Cocoa Board, this training has already been introduced by SSAB to other partners in the region such as Côte d'Ivoire and Cameroon.

*Stefan Kachelriess-Matthess, Tanja Cohrs, Anna Stancher*

## Diversification of agricultural production and household diet in Ethiopia

The Global Programme “**Food and Nutrition Security, Enhanced Resilience**” is funded by the One World – No Hunger Initiative of the German Federal Ministry for Economic Cooperation and Development (BMZ) (see also pages 23 to 25). Worldwide, the programme addresses the improvement of the nutritional status of women of child-bearing age and children below five years of age. The Programme is active in eleven countries, one of which is Ethiopia. The activities of this country project focus on the Tigray region in the North of Ethiopia, where the nutrition situation is particularly critical. Just four per cent of the infants aged between six months and two years receive a minimum acceptable diet in terms of frequency of meals and nutritional diversity. Therefore, diet-related growth retardations and stunting are widespread.



*Complementary feeding practices with mothers.*

*Photo: Susanne Neiro*

In Ethiopia, the global programme cooperates closely with ongoing projects of bilateral German development cooperation such as the “**Sustainable Land Management Programme**” (SLM). The SLM aims at counteracting the progressing land degradation through sustainable management of resources and increase of the agricultural production. Yet the improvement of the nutritional situation cannot be achieved by an increase in production or sustainable resource management alone. Therefore, the Global Programme “**Food and Nutrition Security, Enhanced Resilience**” works in a multi-sectoral approach to address the various different reasons for undernourishment and malnutrition. Here, the diversification of agricultural production with nutritious crops is an important aspect: crops containing vitamin A, iron and zinc among others are important to combat so-called hidden hunger, the wide-spread lack of essential micronutrients. Additionally, the cultivation of protein-rich legumes and vegetable varieties as well as vitamin-A rich sweet potato and oilseed varieties is promoted.

This diversification of the agricultural production is coupled with activities supporting the diversification of the household diet for all family members: behavioural changes in the rural households are necessary to improve the nutritional situation. Here, the programme promotes cooking demonstrations that show women how to preserve valuable nutrients while preparing more nutritious and more diverse meals. Moreover, mothers are taught how to prepare healthy and age-based complementary food for infants. The application of good hygiene practices is closely linked to these areas. All these activities also directly address men as decision-makers in rural households as well as religious leaders. The programme is implemented mainly by governmental agricultural extension staff as well as farmer and women’s groups, who are trained in teaching methods and coached by the programme staff. The first impact assessment is to take place by mid-2016.

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