



Federal Ministry
for Economic Cooperation
and Development



ONE WORLD – No Hunger

Green innovation centres
for the agriculture and food sector



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for the agriculture and food sector



**“WE NEED MORE INNOVATION FOR RURAL AREAS.
COOPERATION AND PARTNERSHIPS ARE IMPORTANT
BUILDING BLOCKS FOR MODERNISING AGRICULTURE”**

Dr. Gerd Müller, Federal Minister
for Economic Cooperation and Development

DEAR READERS,

While the refrigerators and food markets of western industrialised countries are full, almost 800 million people in developing countries and emerging economies are going hungry. Hunger is one of the biggest preventable scandals of our time. The Earth has the potential to feed everyone.

Experts agree that the world has enough agricultural land – even in places where people are affected by hunger. What is lacking is the knowledge about how to grow crops and how to farm efficiently, as well as affordable seeds and the necessary machinery.

For people living in developing countries and emerging economies, we need a new approach to address the problems of soils that have become infertile, vanishing biodiversity, unsustainable water use and the destruction of entire harvests by pests.

We need more innovation for rural areas – innovation to create sufficient and nutritious food for people, to generate more jobs and better incomes for families. In this regard, the focus of progress and innovation needs to be placed on making agriculture not only more productive but also more sustainable. Agriculture which is climate-smart and conserves resources in the long term. The global population is, after all, continuing to grow and is projected to reach almost 10 billion people in 2050. All of these people will require food on a daily basis, regardless of whether they live in towns and cities or in rural areas. It is the latter where the future of mankind will therefore be decided.

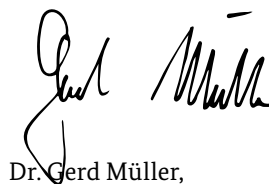
With its ONE WORLD – No Hunger initiative, the Federal Ministry for Economic Cooperation and Development therefore supports the setting up of 13 green innovation centres for the agriculture and food sector. Preparations are currently being made to create a 14th green innovation centre in Mozambique.

The green innovation centres in Africa seek and promote new ideas and new farming methods – together with research institutions, civil society and the business community, both locally and worldwide. I regard this broad-based cooperation as being extremely important.

The centres present and apply new seed varieties and more effective cultivation and storage methods, among other measures. They are also developing new marketing methods, self-organisation among farmers and trade – from farm to the table. However, innovations such as these can only be effective if they are applied by a large number of people and over a large area. The green innovation centres therefore also impart agricultural knowledge that farmers can then take back and apply on their own fields and in their own villages. They offer training, provide extension services and facilitate upskilling measures in specific areas.

Information and communication technologies help to make new knowledge more widespread. In rural areas, new structures, jobs and employment are created, providing young people in particular with the chance of a better life. This shows that strengthening people in developing countries and emerging economies will benefit us too – we are laying the foundations for healthy food and for agriculture which will not destroy the planet.

A world without hunger is possible!



Dr. Gerd Müller,
Federal Minister for Economic Cooperation and
Development



GOOD FEED FOR MORE MILK:

Elephant grass has the right balance of protein and crude fibre. When mixed with concentrated feed, this diet will help cows to produce more milk.

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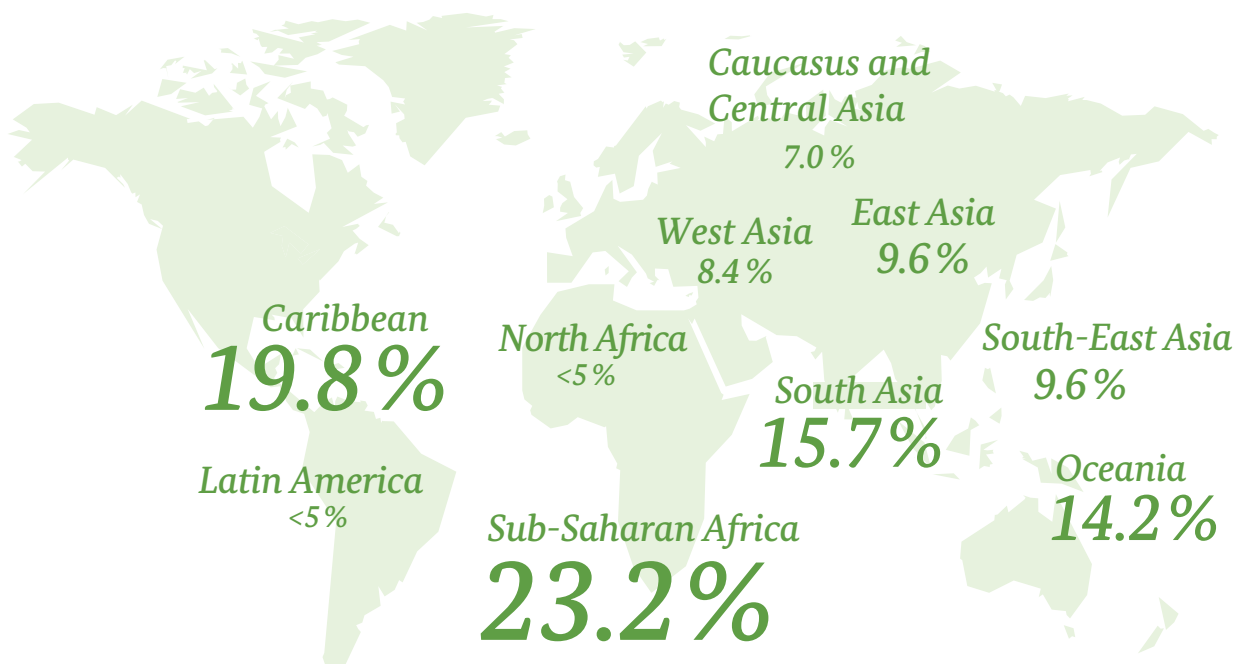
The starting point – hunger and malnutrition



WHAT WOULD HAPPEN IF YOU HAD TO GO TO BED EVERY NIGHT WITH A RUMBLING STOMACH? IF BREAD WERE SO EXPENSIVE THAT YOU ENDED UP HAVING TO PAY VIRTUALLY YOUR ENTIRE INCOME FOR IT? FOR 793 MILLION PEOPLE LIVING IN EMERGING ECONOMIES AND DEVELOPING COUNTRIES, HUNGER IS A REALITY OF EVERYDAY LIFE – AND THIS EVEN THOUGH THE RIGHT TO FOOD IS A HUMAN RIGHT.



PERCENTAGE OF PEOPLE AFFLICTED BY HUNGER, BY REGION



Source: Food and Agriculture Organization (FAO) 2015

IN FOCUS: INCREASING AGRICULTURAL PRODUCTIVITY

It seems paradoxical to state that the people who grow a large proportion of food around the world often do not have enough to eat themselves. Although hunger in developing countries has fallen by almost a third since 2000, the problem nevertheless continues to affect one in every eight people worldwide. More than half of these people are small farmers. Their meagre harvests are simply not enough for them to feed their own families and to guarantee a balanced diet.

The primary cause of hunger and malnutrition is poverty. Roughly three quarters of all poor, hungry and malnourished people live in rural areas. In order to rectify this situation, farmers need access to more knowledge regarding agricultural production methods. They require better agricultural inputs such as seeds and small loans. And they should be given the opportunity to either hire or buy agricultural equipment and to join together in forming strong farming cooperatives.

Added to the problem of low productivity in smallholder agriculture is the fact that the global population is estimated to reach almost ten billion people by 2050. The demand for food is therefore growing inexorably. Experts believe that by 2050, global food production will need to be increased by at least 60 per cent in order to feed everyone. The amount of land on which to grow food, however, is limited: measured on a per capita basis, arable and grazing land is becoming ever scarcer. The same is true of water. In view of these issues, how can this demand be satisfied?

OUR APPROACH: ACHIEVING FOOD SECURITY AND CREATING INCOME THROUGH INNOVATION

Generating a sustainable food supply for a large number of people requires agricultural innovation. Developing the added value of agriculture, from sowing seeds and processing to carrying out trade locally, is also important as this is a way of creating jobs and, as a result, more income.

The Federal Ministry for Economic Cooperation and Development (BMZ) has therefore set up 13 green innovation centres for the agriculture and food sector: in 12 African countries and in India. Preparations are currently being made to establish a 14th green innovation centre in Mozambique. At these centres, experts from the field of development cooperation, from companies, associations and the private sector work together with farmers to develop ideas and strategies for improving cultivation, reducing harvest losses and enhancing quality standards.

The green innovation centres are a centrepiece of the ONE WORLD – No Hunger initiative. The BMZ has created this initiative in order to eradicate hunger and malnutrition, support innovative and sustainable farming, protect natural resources and create jobs and the prospect of a better future in rural areas, especially for young people.

The ONE WORLD – No Hunger initiative



THE FIGHT TO ERADICATE HUNGER AND MALNUTRITION HAS MANY FACETS. THE ONE WORLD – NO HUNGER INITIATIVE HAS SIX KEY AREAS:

1. WORKING FOR FOOD SECURITY

Two billion people are currently suffering from hunger and malnutrition. Women, especially pregnant women and breast-feeding mothers, are affected the most, along with young children. Access to sufficient and nutritious food is vital to an individual's mental and physical development. One of the goals of the international community is to work together to make sure that by 2030, mothers and young children have enough to eat.

2. ENHANCING RESILIENCE

We want people to be prepared for crises and conflicts so that they still have sufficient food when these situations arise. Famine can be prevented if the correct foundations are put in place at an early enough stage. Information systems, preventive health care and a mix of agricultural measures can help people to cope with crises better.

3. FOSTERING INNOVATION

To feed the growing global population, agriculture in emerging economies and developing countries needs to become more productive. The green innovation centres are addressing these challenges. In so doing, we look at the entire value chain of food – from the farm to processing and all the way to the table.

4. CREATING PROSPECTS FOR THE FUTURE

Rural areas must not lose out from globalisation. Making better use of potential, disseminating examples of good practice, implementing innovations in which information and communication technologies are becoming ever more important, and creating jobs are all key factors in this regard. In this way, we provide a connection to the outside world, which in turn gives young people in particular the chance of a better life in rural areas.

5. PROTECTING NATURAL RESOURCES

For many people, natural resources – land, water, vegetation and biodiversity – are their source of livelihood. In many places, factors such as rainfall levels and temperature are being affected by climate change. If agriculture does not adapt to this situation, productivity may fall. As a result, knowledge and measures such as the terracing of slopes, the construction of dams and reservoirs, as well as the planting of hedges and trees are passed on and adapted in such a way that they can be applied quickly.

6. FOSTERING FAIR AND SECURE TENURE RIGHTS AND LAND USE RIGHTS

Most rural people's livelihoods depend directly on access to land which they can use to graze their livestock or plant their crops. Only where there are clear guidelines governing the rights attached to property and use will people invest time and money in their own fields or in new production methods, such as irrigation systems.



FAR MORE HORSEPOWER THAN A TEAM OF OXEN:

Although hiring big agricultural machinery like tractors incurs rental costs, this type of equipment nevertheless provides more efficiency and greater harvest yields.

OBJECTIVES OF THE SPECIAL INITIATIVE



TO ERADICATE HUNGER AND MALNUTRITION AMONG PEOPLE ALIVE TODAY



TO LAY THE FOUNDATIONS FOR ENABLING FUTURE GENERATIONS OF A GROWING WORLD POPULATION TO FEED THEMSELVES

IMPLEMENTING THE SPECIAL INITIATIVE

- ➔ Over a billion euros of extra funding were made available for the special initiative between 2014 and 2016.
- ➔ The special initiative builds on Germany's existing development cooperation activities in the area of rural development in our partner countries.
- ➔ A world without hunger will only be possible if all players within society – namely civil society, academia, churches, the private sector and

government agencies – pool their efforts. All of these players have considerable experience of and are heavily involved in combating hunger. We have created an alliance encompassing all of the social forces that actively support our special initiative.

- ➔ Since 2014, the BMZ's overall annual investment in rural development, agriculture and food security through its special initiative amounts to around 1.5 billion euros.

The idea of green innovation centres

Knowledge is the most important resource when it comes to agriculture. The Federal Ministry for Economic Cooperation and Development has set up a number of green innovation centres which disseminate knowledge and implement innovations on a wide scale. We are therefore creating opportunities for millions of smallholders, cooperatives, processing companies and traders in 14 different countries.

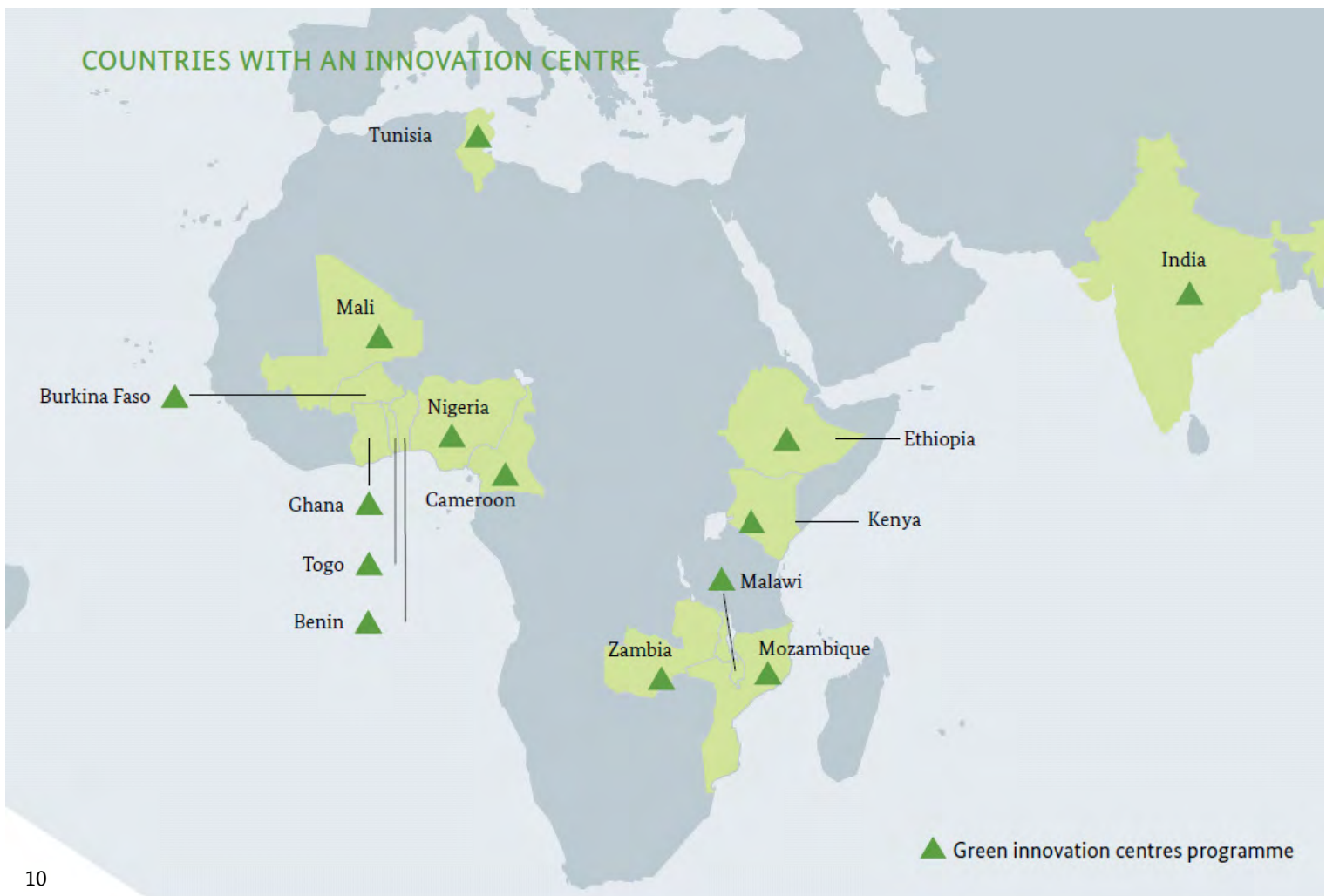
There are many facets to innovation. One such facet is new production techniques, such as the use of high-quality seeds or improved farming and harvesting methods. However, adapting the way in which food is stored can also

be an innovation, as are efficient forms of cooperation, proper transport and modern marketing.

Innovations such as these can only become established more broadly if all forces in society work together. It is for this reason that cooperation between government agencies, civil society, the academic community and the private sector is a feature of the green innovation centres. In this regard, the green innovation centres take account of the entire value chain, from the farm to the table. As part of the BMZ ONE WORLD – No Hunger initiative, the green innovation centres are helping to eradicate hunger and to improve the global food situation.



UP TO THE END OF 2021, THE BMZ WILL BE INVESTING 206 MILLION EUROS IN THE GREEN INNOVATION CENTRES.



PARTNERS

CIVIL SOCIETY:
 Welthungerhilfe, Bayerische Landfrauen,
 Andreas-Hermes Akademie,
 Menschen für Menschen (among others)

RESEARCH:
 AfricaRice Center, IITA, ICARDA
 (among others)



PRIVATE SECTOR:
 Bayer, Grimme Lemken, UNIVEG
 (among others)

ASSOCIATIONS:
 German Adult Education Association,
 German Cooperative and Raiffeisen
 Confederation (among others)

OBJECTIVES:



- > To increase yields
- > To boost income
- > To create jobs
- > To improve food supply

TARGET GROUPS:



- Smallholders
- Small businesses
- Business start-ups
- Cooperatives
- Civil society organisations



Advancement through INNOVATION



VALUE CHAINS



Highlights:

WHAT WE HAVE ACHIEVED ALREADY

- During the first two years, the green innovation centres have already **trained more than 220,000 people**, on topics which have included improved farming methods and business administration issues.
- In Germany, training has been given to more than **700 experts**, including female managers, who are now passing on their newly acquired knowledge in their home countries.
- Cooperation agreements have been signed with **40 different partners**, and further agreements are in the pipeline.

WHAT WE WILL ACHIEVE IN FUTURE

- The green innovation centres will provide **training courses** for a total of **1,110,000 smallholdings**. The training will focus in particular on issues such as agricultural expertise and entrepreneurship.
- The measures will help to **increase levels of income** for **860,000 smallholders**.
- Nearly **14,000 new jobs** will be created.
- Our aim is to improve the living conditions for **7 million people** in total (smallholders, their families and employees) by 2021.



BURKINA FASO – LEARNING HOW TO IMPROVE RICE YIELDS

In cooperation with the Dreyer Foundation, 150 rice farmers have learned how they can use the simplest of methods to redirect water on to the fields and replant young seedlings. As a result, the yield is increased from around two to as much as 4.5 tonnes of rice per hectare.



INDIA – RESISTING THE BLIGHT

Together with partners, the green innovation centre is testing improved methods in an effort to prevent leaf blight infestation in potatoes under certain weather conditions. The aim is for more than 25,000 smallholders to increase their income by 2019.

ZAMBIA – PREPARING THE SOIL FOR SOY AND PEANUTS

Working together with a local non-governmental organisation and cooperative, **7,000 smallholders** were given training courses on how to preserve soil fertility when growing soy and peanuts, thereby safeguarding their harvest for the long term.

NIGERIA – MORNING WEATHER REPORT

The green innovation centre is testing an SMS system which is being used to provide rice, maize and potato farmers with a weather report for their region. **81 per cent of users** now plan when to sow their seeds, when to apply fertiliser and when to use pesticides based on the forecasts, and are generating higher yields as a result.

BENIN – FROM ARABLE FARMING TO RUNNING A SMALL BUSINESS

Farmer business schools have provided training on business administration topics to **18,000 people**. This has helped to increase farmers' income by as much as 25 per cent.

MALI – TRAINING FOR RICE FARMERS

More than **5,400 farms** have been trained on how to grow rice, resulting in an increase in their productivity by as much as 40 per cent.

TUNISIA – REWARDING GOOD IDEAS

30 innovative start-up projects by young university graduates have been selected in a competition for ideas held by the green innovation centre and the government agency for the promotion of agriculture. The chosen projects are now being given support, and are creating new jobs.

TOGO – HIGH-QUALITY CASHEW TREES IMPORTED

2,000 farmers have already received high-quality seedlings from Ghana. In just a few years' time, these trees will yield up to three times more nuts than in the past.

CAMEROON – COLLECTIVE STRENGTH

The green innovation centre is supporting four cocoa centres – each comprising **400 cocoa farmers** – with the help of modern solar drying equipment. This improves not only the taste and quality of cocoa beans, but also the price that they can fetch.

Partnerships with the green innovation centres



→ Numerous actors are working worldwide to ensure that mankind can be supplied with sufficient, and healthy, food both today and in the future: civil society organisations, small and medium-sized businesses, associations, researchers at universities and academic institutions, foundations as well as actors engaged in development cooperation.

→ The green innovation centres bring all of this **extensive knowledge and experience** together. It begins with the project planning, when all the partners put forward their ideas and suggestions, and it continues as they work together to put the undertaking into action. Everyone is working towards the same end, and this releases remarkable potential. After all, it is only if the findings from research and development, from companies and actual development projects are brought together that ideas can be successfully turned into reality.

→ So far, **40 partners** have joined forces within the green innovation centres – many of them from **Germany**. One example of an integrated development partnership with the private sector is the cooperation with the German companies **Grimme** and **Lemken**, which are making it easier for smallholders in India to access modern agricultural machinery. The companies demonstrate the benefits of using the equipment on so-called “innovation farms”. In

other countries too, German companies are also supporting the green innovation centres, and numerous other partnerships are being developed.

→ In addition, about **70 organisations, mainly in Bavaria**, are helping with education and training at farms and institutions. Over **700 experts** from the partner countries have so far taken part in continuing training and study tours in Germany, including many female managers. Then they pass on their newly acquired knowledge – on matters such as rearing dairy cattle, growing potatoes or farming organically – in their home countries.

→ Many **international partners** are also joining in the work: for example, the Dutch voluntary service SNV is helping smallholders in Zambia to improve the way they keep their dairy cattle. The pan-African research institute *AfricaRice* is supporting the innovation centres in Benin, Ghana and Burkina Faso by promoting the use of modern information and communication technologies in the interests of improving agriculture. In Ethiopia, a business incubator for start-ups in the food industry is being set up in cooperation with the Bill and Melinda Gates Foundation.

GERMAN AND INTERNATIONAL PARTNERS OF THE GREEN INNOVATION CENTRES

Private sector

German partners



International partners



Federations, associations, educational establishments

German partners



Civil society/Institutions

German partners



International partners



Research

German partners



International partners



Ethiopia – Fewer crop failures thanks to improved technology



Almost 80 per cent of people in Ethiopia are dependent on farming for their livelihood, while around 37 per cent of the population is extremely poor. Although the country has the natural conditions required to grow enough food for everybody, food supply in rural areas is inadequate. Seeds which are prone to disease, cultivation of the land using the most basic of tools and the harvesting of grain by

hand all mean that farmers ultimately are only able to reap a small fraction of their crop. The green innovation centres are changing this situation. Targeted investment is being made in improving the cultivation of wheat and faba beans. This is therefore helping to better harness the great potential of Ethiopian agriculture and to combat poverty and hunger effectively.



OUR OBJECTIVES UP TO 2021:

- **To increase income** at 70,000 smallholdings by 30 per cent
- **To increase employment** through the creation of 2,000 new jobs (20 per cent of which will be for young people and 35 per cent for women)
- **To provide training** for 70,000 smallholders (including 24,500 women and 14,000 young people)

SUPPORTED INNOVATIONS:

➔ **Modern technology used to generate higher yields:** Whenever a field is ploughed using oxen, weeds soon sprout up again very quickly as the soil is not turned. Modern mouldboard ploughs, on the other hand, do invert the soil and simply bury weeds in the process. As a result, crops such as wheat or faba beans can grow much better, even without the use of herbicides.

➔ **Seeing the results for themselves:** 520 pilot smallholdings are using traditional methods to farm half of their land. On the other half, they are employing a range of innovations, such as

high-quality seed or modern agricultural machinery. Smallholders are therefore able to see for themselves the extent to which yields are increased.

➔ **Professional advice:** Although agricultural extension officers in Ethiopia have acquired theoretical knowledge through their studies, they often lack practical experience. An additional, practice-oriented training course aims to rectify this and also has a positive impact on levels of motivation among the extension officers.

AN EXAMPLE OF COOPERATION: PILOT FARMS ARE PROMOTING EQUIPMENT HIRE IN REMOTE REGIONS

Tafari Mulugeta

“In the fields of the pilot farms, we have seen with our own eyes how much more wheat can be grown when we use modern machinery in our farming. But we don't have enough money to buy our own tractors, for example. Although there are plenty of companies that offer equipment for hire, even that is not cheap. But we have been persuaded of the advantages of mechanisation. It creates more income for our families.

Using good seed is another improvement. In the past, we just used to keep something back from the previous harvest and sow it again later. The plants often became diseased. Recently, the national institute for the breeding of seeds has been helping us a lot.”



PROJECT PARTNERS:

Lead executing agency: Ethiopian Ministry of Agriculture and Natural Resources, Agricultural Extension Directorate

Implementing and cooperation partners: Agricultural office of the administrative district of Arsi and subordinate offices in rural districts (Woredas), Bill & Melinda Gates Foundation (negotiations ongoing)

Research and science: Ethiopian Institute for Agricultural Research

Civil society: CNFA (Cultivating New Frontiers in Agriculture); DGRV (German Cooperative and Raiffeisen Confederation); Menschen für Menschen; Welthungerhilfe; Andreas-Hermes Akademie



Benin – From arable farming to running a small business



Although people living in rural areas grow and harvest cotton, maize and cassava, farmers' earnings remain low for the most part as products are no longer processed domestically. Furthermore, crop yields are steadily declining as a lot of arable land is impoverished. In this regard, rice and soy cultivation provides good, alternative income-earning opportunities and is supported by the green innovation

centre. The same is true of poultry, which plays a key role in Benin as far as food and nutrition security is concerned. With innovative approaches, such as the passing on of business skills in specially developed training courses for farmers, the green innovation centre is setting out new directions.



OUR OBJECTIVES UP TO 2021:

- **To increase income** at 50,000 smallholdings by 33 per cent
- **To increase employment** through the creation of 1,000 new jobs (20 per cent of which will be for young people and 35 per cent for women)
- **To provide training** for 70,000 smallholders (including 24,500 women and 14,000 young people)

SUPPORTED INNOVATIONS:

➔ **Coaching:** 60 trainers visit a total of 1,500 farms and processing plants on a regular basis and provide tuition on a range of topics, including business management and accounting. This allows the operations to expand and new jobs to be created.

➔ **Safeguarding against losses:** The Benin-based organisation AMAB has created an insurance system to protect against crop failures. This is used by both farmers and processing companies to protect themselves against losses. The innovation centre also supports the setting up

of regional schemes providing small-scale government loans.

➔ **Mobile team of instructors:** 100 agricultural instructors are going from village to village with their teaching materials, giving classes to 25 farmers at a time. At the end of the training sessions, the farmers are able to calculate the exact amount of fertiliser they require per hectare and how many people they will need to help with the next harvest, for example. Not only does this save costs but it increases income at the same time.

TOFU PRODUCTION GATHERS STEAM

By Oumou Seidou

“My business makes high-quality tofu from soybeans every day. There is a huge demand for it. More and more customers are coming along, and in the last six months I have kept expanding my business. Some time ago, I heard on the radio about a training course for soy processors. I attended the course. I spent a week learning the basic principles of successful business management. After that, I formally registered my business and opened a bank account.

I started to save part of my earnings, and after three months I was able to buy my second mill. Last year I was still only processing about 40 kilogrammes of soy a day. Now it's already 120 kilogrammes! The number of my employees has also increased, because with just two people we simply couldn't cope any longer.”



PROJECT PARTNERS:

Lead executing agency: Ministère de l'Agriculture, de l'Élevage et de la Pêche, MAEP (Ministry of Agriculture, Livestock and Fisheries of Benin)

Implementing and cooperation partners: National Federation of Agricultural Producers (FUPRO) and the National Association of Female Farmers (ANaF)

Research and science: AfricaRice Center

Civil society: Swiss Contact



Burkina Faso – Technology brings greater efficiency and optimum quality



A little over a third of all arable land in Burkina Faso is already so impoverished that it can no longer be farmed – and a further 2,500 square kilometres are lost every year. This can be attributed to frequent changes in the weather, alternating between drought and floods, and the continued cultivation of the same crops all of the time. A quarter of the population is undernourished. And although 85 per cent of the population is employed in agriculture, there

are virtually no occupations in this sector requiring formal training. With crop rotation between rice and vegetables as well as the production of sesame seeds for export, the green innovation centre is looking to improve people's food and nutrition as well as their income. Positive changes are being made possible thanks primarily to new technologies concerning seeds, harvesting and processing, coupled with better education and training.



OUR OBJECTIVES UP TO 2021:

- **To increase income** at 80,000 smallholdings by 30 per cent
- **To increase employment** through the creation of 1,000 new jobs (20 per cent of which will be for young people and 35 per cent for women)
- **To provide training** for 100,000 smallholders (including 35,500 women and 20,000 young people)

SUPPORTED INNOVATIONS:

➔ **New rice mills:** Rice is milled before it is eaten. In future, 9,000 farmers will be able to take their rice to two new rice mills. The mills are creating 68 new jobs.

➔ **Practical training:** One thousand trainees and future extension officers pass through the Centre Agricole Polyvalent de Matourkou agricultural college each year. On twelve fields that have been set aside for training purposes they learn how to kick-start their farming operations with the aid of modern machinery.

➔ **Cleaning ready for export:** In order to be suitable for export around the world, sesame seeds must fulfil the highest requirements in terms of both quality and purity. A new cleaning facility ensures that these demands are met.

PRACTICAL TRAINING IS CATCHING ON: IMPROVED LEARNING THROUGH PRACTICE IN THE FIELD

By Nayibnogo Ouédraogo

“I just call it the “CAP”: the biggest agricultural college in my country, the Centre Agricole Polyvalent de Matourkou. This is where I live and study and meet my friends. I finished my basic training in 2009 and then travelled the country as a government agricultural extension officer. Now I'd like to go back to the “CAP” to train as an agricultural technician. The training takes two years. After that, I might set up my own business. Or I might do some more training to become an agricultural engineer.

Today I am showing my fellow students sowing and fertilising techniques in the sesame field. Trainers with lots of practical experience teach us about growing rice, maize, sesame and vegetables.”



PROJECT PARTNERS:

Lead executing agency: Ministère de l'Agriculture et des Aménagements Hydrauliques, MAAH (Ministry of Agriculture and Hydraulic Planning of Burkina Faso)

Implementing and cooperation partners: Matourkou state agricultural college, the umbrella association for rice in Burkina Faso (CIR-B) and the umbrella association for sesame (INTERSEB)

Research and science: AfricaRice Center, National Institute of Environmental and Agricultural Research, Universities of Bobo-Dioulasso, Ouagadougou and Hohenheim

Civil society: Dreyer Foundation, Afrique Verte

Private sector: Alvan Blanche, NAFASO Sarl, Ferme Pédagogique de Kourinon (FPK), Saphyto S.A., FPM Sarl, PETKUS Technologie GmbH



Ghana – Preventing post-harvest losses



Maize and rice are two of the staple foods in the daily diet of the Ghanaian population. Although demand for these is high, farmers lose around 40 per cent of their crop each season. In many fields the plants become infected with diseases, while a considerable share of the harvest is also lost due to incorrect storage. As a result, farmers are forced to sell all of what they produce during the harvest season, when they

can only command a low price. The green innovation centre is focusing initially on two crops, namely rice and maize: good agricultural practices, modern drying methods, better storage and marketing in close collaboration with the private sector are all increasing the income of farming families and creating new jobs in rural communities.



OUR OBJECTIVES UP TO 2021:

- **To increase income** at 75,000 smallholdings by 28 per cent
- **To increase employment** through the creation of 1,000 new jobs (20 per cent of which will be for young people and 35 per cent for women)
- **To provide training** for 75,000 smallholders (including 26,250 women and 15,000 young people)

SUPPORTED INNOVATIONS:

➔ **Solar drying:** Incorrect drying of rice poses a genuine problem. Every year in Africa, large quantities of rice go off following the harvest because it is not dried correctly. The rice can become moist and go mouldy. Rice is traditionally dried on mats, plastic sheets or simply on the ground. Thanks to modern, solar-powered dryers, rice can now be dried in a cost-effective, rapid and, above all, uniform fashion. This means that it can be stored and processed under ideal conditions.

➔ **Demand for the correct technology:** The right variety, good pesticides and proper storage are the

important factors. Around 11,000 people have already been given training on these and other issues.

➔ **Competition as an incentive:** Within the framework of a joint innovation platform, plans are being made for a fund for smallholders and processing companies. Here, creative minds submit applications for funding to help with implementing their good ideas.

CLEANER MAIZE REQUIRES SUN AND AIR

By Albert Amankwa

“Until recently, I used to dry my maize on the ground in front of my house. Every year, this would produce the same annoying result, as repeated rainfall would cause the maize to start going mouldy. Lizards and insects then set about eating my crop as well. It goes without saying that buyers are unwilling to pay a lot for this maize. But the new solar dryer has changed this completely. All I have to do now is shovel the grains into the long tube and then shut the dryer.

Two fans then blow warm air through the tube, inflate it and dry the contents. The sun is the only energy source needed to operate the dryer. And what I harvest now remains free of vermin and insects. The quality of my maize has improved greatly as a result and my customers are paying almost 50 per cent more than they did last season. And the best thing is that the mobile dryer comes directly to me at my home.”



PROJECT PARTNERS:

Lead executing agency: Ghanaian Ministry of Food and Agriculture (MoFA)

Implementing and cooperation partners: Ghana Grains Council (GGC), Ghana Rice Interprofessional Body (GRIB)

Research and science: National research institutes of the Council of Scientific and Industrial Research (CSIR), Competitive African Rice Initiative (CARI)

Civil society: The Hunger Project



India – Working together closely with agricultural companies



Potatoes are an important part of the Indian diet. However, even before they are harvested, many potato plants become infected with diseases such as leaf blight. Often it is the seed potatoes themselves that are infested, resulting in farmers losing large parts of their crop. Furthermore, most fields are farmed using oxen and are harvested by hand – a lot of potential is left untapped. The yields of potato growers too have for a long time been smaller than

what they could be. Healthy seeds, efficient water use and sustainable farming methods are all ways in which productivity can be increased. The green innovation centre advises farmers on suitable innovations and supports the setting up of farmers' organisations. In this regard, the project cooperates with private companies, research centres and civil society.



OUR OBJECTIVES UP TO 2021:

- **To increase income** at 75,000 smallholdings by 25 per cent
- **To increase employment** through the creation of 1,000 new jobs (20 per cent of which will be for young people and 35 per cent for women)
- **To provide training** for 90,000 smallholders (including 31,500 women and 18,000 young people)

SUPPORTED INNOVATIONS:

➔ **Tractors for hire:** Entrepreneurs are leasing agricultural equipment from international agricultural machinery manufacturers. For a small fee, the businesses then carry out tasks for which machinery is required, on behalf of farmers. As a result, new jobs are being created by the entrepreneurs, while at the same time, increasing crop yields are also boosting farmers' income.

➔ **Resistant potatoes:** Together with *Asia Blight*, an international network of experts, the green innovation centre is examining ways of preventing leaf blight infestation in potatoes. Tests are being

carried out using new, resistant varieties of potato in particular.

➔ **New technology for healthy tomatoes:** Farmers are using solar-operated and battery-powered traps to tackle the problem of the tomato leaf miner. The moths are drawn by the light of the traps where they are killed. By distributing water in a targeted fashion directly to the roots through a system of drip irrigation, water consumption is reduced and tomatoes have better conditions in which to grow.

THE POTATO TRADERS OF PARGOAN

By Balasahib Sawant

"I live in the Peth region, north of Pune, in the state of Maharashtra. I supply seed potatoes to the farmers in my region. However, finding good plants here is not so easy. I work together closely with the green innovation centre. We are just in the process of building a cold store, where we can keep the seed potatoes after the harvest until it's time to plant them. That way we won't lose plants any more while transporting them to the farmers, because this is done in February when it's cool.

People can also hire small tractors and machines from me. In Gujarat recently I saw a potato planting machine in action – and I bought it on the spot. My customers are still rather sceptical. The machine needs to prove itself first! But I'm confident that my investment will pay for itself as early as the coming year."



PROJECT PARTNERS:

Lead executing agency: Indian Ministry of Agriculture and Farmers Welfare

Implementing and cooperation partners:

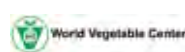
Departments of Agriculture (DoA), National Skill Foundation of India, Small Farmers' Agribusiness Consortium

Research and science:

AVRDC – The World Vegetable Center, Sher-e-Kashmir University of Agricultural Sciences and Technology

Civil society: German Cooperative and Raiffeisen Confederation (DGRV), Andhra Pradesh Mahila Abhivruddhi Society (APMAS), Welthungerhilfe

Private sector: Grimme, Lemken, Bayer



Cameroon – Better cooperation leads to more value creation



The price paid by traders and the food industry for cocoa from Cameroon is a low one. The majority of raw cocoa often has an unpleasant taste or is lacking in more subtle aromas. The income of poultry farmers and potato growers is also very low in many places. Many chickens die even before they have been able to lay eggs or have reached their slaughtering weight. Plant diseases such as leaf blight or mildew

reduce the potato harvest. By encouraging the cultivation of potatoes and cocoa and the breeding of chickens, the green innovation centre is helping to increase both yields and income. In this regard, one of its priority areas is the creation of new forms of cooperation between the private sector, research and civil society.



OUR OBJECTIVES UP TO 2021:

- **To increase income** at 70,000 smallholdings by 31 per cent
- **To increase employment** through the creation of 1,800 new jobs (20 per cent of which will be for young people and 35 per cent for women)
- **To provide training** for 120,000 smallholders (including 42,000 women and 24,000 young people)

SUPPORTED INNOVATIONS:

→ **Improved aroma thanks to solar drying:** In four cocoa cooperatives, each comprising 400 cocoa farmers, new solar dryers are being used to dry the precious beans. This preserves their aroma and higher prices can therefore be achieved. Support is also being provided by the Technical University of Munich, where students are developing a cocoa pod peeling machine for smallholders in Cameroon.

→ **Poultry in good hands:** 30 new veterinary stations in remote regions of the country will soon provide storage in their refrigerators for medicines to fight poultry diseases. Each station will then have

sufficient medicines, vaccines and feed supplements for 400 poultry farmers.

→ **New potato varieties:** Crop diseases hamper the growing of potatoes in Cameroon. Thanks to new varieties of seed potato, large quantities of high-quality potatoes can now be harvested, including for export to neighbouring countries.

A FIELD THAT DOUBLES UP AS A CLASSROOM

By Juliana Yonipuh

“I am a cocoa farmer in Buea, a small town in the west of Cameroon. Together with my husband, I have a farm measuring three hectares in size. In the last few years, we have increased our cocoa harvest by 40 per cent. That has been thanks to the farmer field school that I was lucky enough to attend. There, the field is our classroom. Instead of blackboards, there is an instructor who tells us how we can increase our yields, or how to recognise pests quicker and take action against them. Or how to plant seedlings at the right distance apart.

I’m also president of a women’s cooperative. Our members ferment and dry their cocoa pods in a solar dryer and sell their produce together. We take care to ensure that the beans are of good quality and we can buy fertilisers and pesticides at better prices together. If any one of us has a problem, they are never alone, because the members of the cooperative all help one another!”



PROJECT PARTNERS:

Lead executing agency: Ministère d’Economie, du Plan et d’Administration Territoriale, MINEPAT (Cameroon Ministry of Economy, Planning and Regional Development)

Implementing and cooperation partners:

Microfinance institutes, umbrella and sector associations, cooperatives

Private sector: GEPA

Research and science: International Institute of Tropical Agriculture (IITA), IRAD (Institute of Agricultural Research for Development), universities and research centres, Technical University of Munich

Civil society: SNV (Netherlands Development Organisation), Brot für die Welt



Kenya – Easy learning thanks to an app: good animal husbandry and more



More than half of Kenya's population is considered to be poor, while a fifth of Kenyans do not know from one day to the next whether they will have enough food to put on the table. Even though the climate in the west of the country in particular is favourable, many farmers produce only a small amount of surplus food which they can subsequently sell. For instance, most farmers have just one or two cows

that only produce a very small amount of milk – no more than two litres per day. In western Kenya, the green innovation centre is working to ensure that milk production is increased. New information and communications technology in particular is helping to disseminate knowledge and increase agricultural yields. Improved, local varieties of sweet potato are also becoming more widespread.



OUR OBJECTIVES UP TO 2021:

- **To increase income** at 50,000 smallholdings by 30 per cent
- **To increase employment** through the creation of 900 new jobs (20 per cent of which will be for young people and 35 per cent for women)
- **To provide training** for 50,000 smallholders (including 17,500 women and 10,000 young people)

SUPPORTED INNOVATIONS:



IT for the farmyard: 8,000 smallholders and 50 farmers' cooperatives are to use digital apps for mobiles and smartphones in future, together with SMS services, in order to learn about animal husbandry and other topics. Public awareness is also raised by means of radio and television programmes.



Good animal husbandry for more milk: Year-round zero-grazing, high-yield forage production, better breeding and compliance with hygiene standards are all measures of progress designed to increase milk levels for 8,000 dairy farmers over the next few years.



Supplying power and gas from an organic source: Electricity from basic biogas facilities cools storage areas for milk, vegetables and cereals. In training courses, service technicians and farmers learn how to operate and maintain these facilities.

“I'M CERTAIN THAT AT SOME STAGE I WILL HAVE 20 COWS!”

By Mathias Litali

“I am a passionate farmer. I have a plot of land on my farm in Shitaho in Kakamega County in western Kenya, on which I keep four cattle. The animals are now housed in a shed which is only partly covered and which backs directly on to our house. I use my field to grow forage.

I have learned a lot about feeding. Last year the training course lasted a week. Since then I have been chopping elephant grass and mixing the fresh and fibrous parts in the animals' trough. I also give my cattle concentrated feed and ground grain maize. The cows like that and they also produce more milk. Some of this we drink ourselves, but most of it we sell. I was also sent another good tip by SMS: dry and store grass for cattle! That way, even during periods of drought, I don't have to worry about my cows.”



PROJECT PARTNERS:

Lead executing agency: Kenyan Ministry of Agriculture, Livestock and Fisheries (MoALF)

Implementing and cooperation partners:

Bukura Agricultural College in Kakamega, Agricultural Training Centres (ATC), Dairy Training Institute (DTI) and local non-governmental organisations

Research and science: International Livestock Research Institute (ILRI), Kenya Agricultural and Livestock Research Organisation (KALRO), Agricultural Technology Development Centres (ATDC)

Civil society: Welthungerhilfe



Malawi – Climate adapted: making agriculture sustainable

Whenever any rain falls in Malawi, it is more and more often the case that it does so only sparingly. Drought often destroys a large part of the harvest. Furthermore, until now the government has supported the growth of maize and tobacco in particular. As a result, people have an unbalanced diet in many places. The green innovation centre therefore focuses on promoting the staple foodstuff cassava as well as oil seeds such as peanuts, sunflowers and soybeans.

Wherever smallholders cultivate their fields by hand or using oxen, the innovation centre supports the introduction of adapted farm machinery. Besides earning money for producers, it also adds more variety to the diet. The innovation centre also promotes the adaptation of agriculture to climate change, primarily by means of new irrigation techniques and good agricultural practices.



OUR OBJECTIVES UP TO 2021:

- **To increase income** at 40,000 smallholdings by 26 per cent
- **To increase employment** through the creation of 1,000 new jobs (20 per cent of which will be for young people and 35 per cent for women)
- **To provide training** for 40,000 smallholders (including 14,000 women and 8,000 young people)

SUPPORTED INNOVATIONS:

➔ **Efficient irrigation:** Water-saving distribution systems are being introduced in collaboration with the Natural Resources College, the partner of the green innovation centre, thereby benefiting farmers in Malawi.

➔ **Repair service just a call away:** Should farmers need a repair carrying out on any agricultural machinery that they have hired, they can call for the mobile maintenance vehicle to come out to them directly on their farm. The vehicle is kitted out with tools and can be used to carry out any repairs which

do not require the use of fixed workshop equipment.

➔ **The yellow root:** Yellow cassava is more resistant to pests and richer in vitamin A than the more common white variety. Smallholders are therefore cultivating new varieties. These can also be processed into starch and flour – key ingredients for the food processing industry.

USING EVERY DROP

By Mishek Kaenda

“Today is a special day for our village, Zingiziwa, in northern Malawi. We are testing the drip irrigation system. For a number of years now, Zingiziwa has had a well with a solar-powered pump; the well is shared by 52 farmers. Our collectively owned land measures seven hectares in size. It takes four hours to irrigate the field using watering cans. And sometimes the well does not carry anywhere near enough water. The new drip irrigation system will make things a lot easier: All I need to do is to switch the system on and then switch it off again after one or two hours. It provides the plants with water directly at their roots. That saves a lot of time and, above all, water! Thanks to the new technology, every drop gets directly to the roots.”



PROJECT PARTNERS:

Lead executing agency: Ministry of Industry and Trade of Malawi

Implementing and cooperation partners: Mwimba College; specialist agricultural college, Natural Resource College at the Lilongwe University of Agriculture & Natural Resources, Sunseed Oil, local NGOs, Exagris and other private partners

Research and science: TechnoServe India; International Institute of Tropical Agriculture (IITA)



Mali – Better storage, increased production



Three quarters of Mali's population depends on farming for a livelihood, while half of the population is illiterate. Most farmers cultivate their fields by hand and many have little opportunity of irrigating their crops effectively. As a result, they only harvest a fraction of what is actually possible. In addition, crops quickly go off and there is a lack of appropriate storage facilities. In order to feed the rapidly growing

population, agricultural production needs to be increased. The green innovation centre therefore focuses on promoting the cultivation of rice, potatoes and vegetables in rotation, and on the growing of mango for export. In so doing, it focuses in particular on the aspects of climate-adapted agriculture, good agricultural practices as well as the use of organic fertilisers and renewable energies.



OUR OBJECTIVES UP TO 2021:

- **To increase income** at 60,000 smallholdings by 33 per cent
- **To increase employment** through the creation of 1,000 new jobs (20 per cent of which will be for young people and 35 per cent for women)
- **To provide training** for 100,000 smallholders (including 35,000 women and 20,000 young people)

SUPPORTED INNOVATIONS:

- ➔ **Solar technology all season long:** A refrigeration unit ensures that mangoes and potatoes kept in storage can stay fresh for a long time. What makes the unit special is the motor used to run it, which can be operated as a hybrid using either diesel or solar technology. Farmers can sell their chilled produce at a later point in time and command a higher price.
- ➔ **Business administration for beginners:** Many farmers in Mali are unfamiliar with the fundamental aspects of how to run a business. As a result, they can end up falling into a debt spiral as the ratio between

costs and income is not a favourable one. In practical courses using clear examples, almost 1,400 experts – trained by the green innovation centre – explain how farmers can manage their businesses more successfully and in a viable manner.

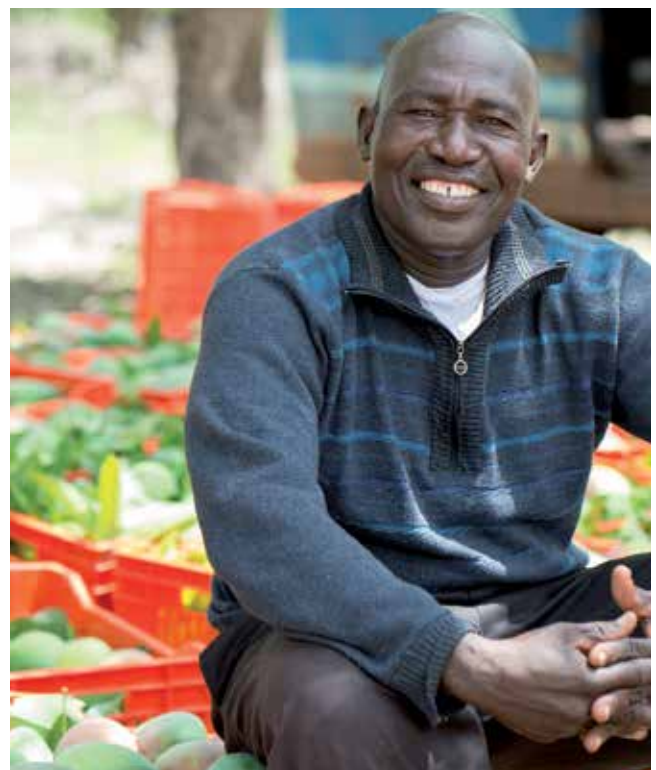
- ➔ **Expanding knowledge:** Working together with the German Adult Education Association, the green innovation centre organises literacy courses for more than 600 farmers. Besides reading and writing, farmers also learn valuable information about how to grow, tend, harvest and store rice, mangoes and potatoes.

THRIVING BUSINESS

By Abdoulaye Berthe

“I’m satisfied with my harvest. Whereas in the past I only earned a very small amount from selling my mangoes, today I export them to Europe at a profit. But I know that for many mango farmers, this scenario is still a long way off. Although there are 10 million mango trees throughout Mali, only a small fraction of the fruit is exported.

The vital factor is the way in which the trees are tended. I plough the land before growing any new plants. The larger trees also need to be watered and fertilised on a regular basis. And I need to prune them correctly. In future, I could even double what I earn. Following training, the way in which I export the fruit is considerably better – and I can get three times the normal price per kilogramme.



PROJECT PARTNERS:

Lead executing agency: Ministère de Développement Rural, MDR (Ministry of Rural Development of Mali)

Implementing and cooperation partners: Direction National du Génie Rural, DNGR (National Directorate for Rural Infrastructure)

Research and science: Institut Polytechnique Rural de Formation et de Recherche Appliquée (IPR/IFRA), Centre for Rural Development at the Humboldt-Universität zu Berlin

Civil society: Welthungerhilfe, German Adult Education Association, Bremen Overseas Research and Development



Nigeria – Knowledge shows the way forward



Farmers in Nigeria produce mainly rice, maize, potatoes and cassava. However, their farms are small and the yield from the fields is low, so Africa's most populous country has to import food at a high price. In order to be able to provide food for Nigeria's 182 million inhabitants, smallholders need to be familiar with and apply modern farming methods and good agricultural practices. Only in this way are they able to increase the area of land under cultivation, boost

yields and earn good money from agriculture. The green innovation centre is focusing its attention on cassava, maize, rice and potatoes. A key priority area of the centre's work is an educational offensive for farmers as knowledge is the prerequisite for any progress. In towns and cities in particular, demand is also increasing for processed produce, thereby creating opportunities for new jobs in the agro-based industry.



OUR OBJECTIVES UP TO 2021:

- **To increase income** at 170,000 smallholdings by 20 per cent
- **To increase employment** through the creation of 1,000 new jobs (20 per cent of which will be for young people and 35 per cent for women)
- **To provide training** for 200,000 smallholders (including 70,000 women and 40,000 young people)

SUPPORTED INNOVATIONS:

→ **Training in the villages:** In seven states, 340 agricultural extension officers are teaching 200,000 rice, cassava, maize and potato farmers the basic aspects of how to run a business. Producers are therefore able to run their farms sustainably and viably.

→ **Spreading innovation:** Agricultural institutes are carrying out research on the use of seeds, farming methods, fertilisers and pesticides. The results of this research are collected and processed by the green innovation centre and its partners to ensure that farmers are taught about profitable and

environmentally-friendly methods in equal measure.

→ **Media mix for modern agriculture:** The green innovation centre is using the Internet, smartphone apps, videos as well as radio and television to pass on information regarding modern agricultural methods, processing and entrepreneurial-related issues. These approaches are adopted as a way of reaching a large number of farmers.

FINALLY MORE MAIZE!

By Iliya Furera

“I am married and the mother of four children. We have been living in Sabon Birni in the north of Nigeria for over 30 years. Together with my husband, I grow maize, black-eyed peas, soy, peanuts and a few vegetables, on ten hectares. We also have hens and a few ducks. On the farm, I look after my family of eleven – there are three generations living together here. At the same time I have to work in the fields, and I’m responsible for buying seeds and fertilisers. And of course I sell the produce at the market.

Maize is our main staple food. On the training course I learned about the best varieties and the right dosage of fertiliser and pesticide to produce a good yield. I could see the difference on the trial field: the plants there are much healthier than those in the fields around our village.”



PROJECT PARTNERS:

Lead executing agency: Nigerian Federal Ministry of Agriculture and Rural Development (FMARD)

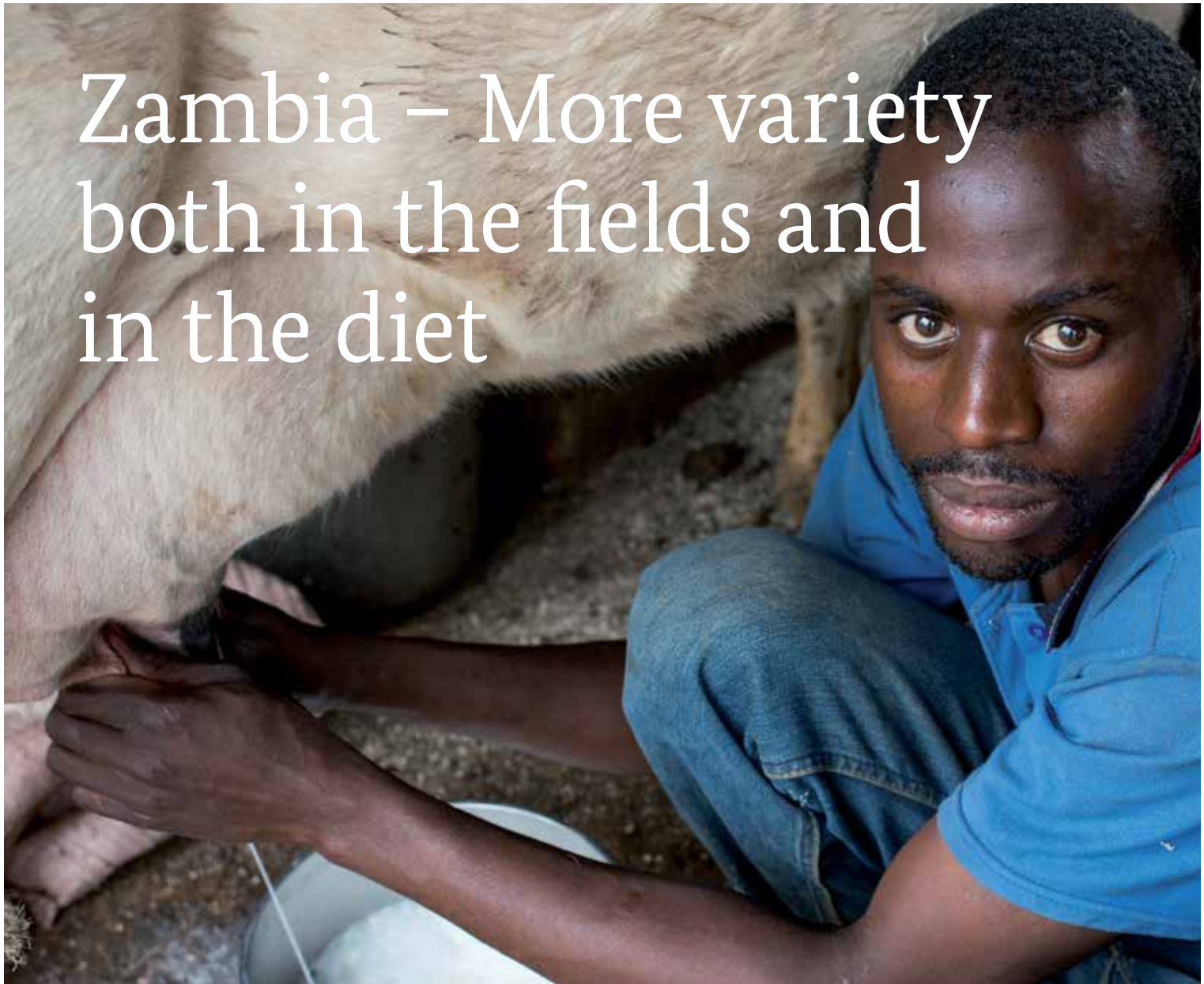
Implementing partners: Agricultural development programmes at state level, agricultural vocational colleges at national and individual state level, National Centre for Agricultural Mechanization

Research and science: Agricultural Research Council of Nigeria (ARCN), IITA, AfricaRice, NRCRI

Private sector: Bosch Group



Zambia – More variety both in the fields and in the diet



Maize and vegetables are the staple foods for the Zambian population, whereas other foodstuffs barely feature in the diet. 40 per cent of the population suffers from deficiencies because of an unbalanced diet which is lacking in vitamins, minerals and proteins. Because they only grow maize, the soils of many smallholders are also impoverished.

Cultivation methods which are both sustainable and preserve the soil are therefore key. By providing targeted support for soy, peanuts and milk, the aim of the green innovation centre is to fight malnutrition and single-crop farming and boost the income of farmers.



OUR OBJECTIVES UP TO 2021:

- **To increase income** at 70,000 smallholdings by 25 per cent
- **To increase employment** through the creation of 350 new jobs (20 per cent of which will be for young people and 35 per cent for women)
- **To provide training** for 100,000 smallholders (including 35,000 women and 20,000 young people)

SUPPORTED INNOVATIONS:

➔ **Incentives for environmentally friendly production:** The non-profit company COMACO buys peanut harvests from smallholders, roasts the peanuts or processes them into peanut butter and then supplies them to shops. The more environmentally friendly the production process, the more money the farmers receive for their harvest.

➔ **Yoghurt as a healthy alternative:** Dairy farming cooperatives process part of the milk they receive into yoghurt. The own-brand yoghurt is already

available in various different flavours – it generates income and enriches the daily diet.

➔ **A small tree with a large impact:** Over the next few years, the aim is for 27,000 smallholders to plant gliricidia trees on their fields. The tree supplies the soil with nitrogen and its leaves are used as fertilisers and animal feed. Impoverished soils are therefore made fertile once again and peanuts and soy plants are provided with shade from the blazing sun.

IT'S WILD – FROM THE FIELD TO PROCESSING PLANTS AND THEN ON TO ZAMBIA'S SUPERMARKETS

By Margret Musukuma

“COMACO, which stands for Community Markets for Conservation, is an agricultural cooperative. Our factory is located in the industrial estate of Chipata and I work here as a grader. Around 20,000 smallholders sell their harvests to us which we then process. Many farmers have managed to increase their income almost threefold compared to what they were earning previously.

COMACO finally sells the finished produce under its own brand name, “It’s wild”, to two of the country’s main supermarket chains. Besides rice, honey and soy products, there is strong demand for peanut butter in particular.

Since finding this job three years ago, we are now able to afford vegetables, salad and eggs in addition to our traditional maize porridge, known as nshima. And sometimes we can even get a piece of meat.”



PROJECT PARTNERS:

Lead executing agency: Zambian Ministry of Agriculture and Livestock (MAL)

Implementing and cooperation partners: COMACO

Civil society: SNV (Netherlands Development Organisation)



Togo – Seizing opportunities, rewarding innovations



Half of Togo's population is poor, especially in rural areas. Although there is considerable demand for cashew, peanuts and soy products – not only locally but also on the export market – the crop harvested by farmers is often not enough to meet this demand. In many instances, it is not even enough for the farmers to provide an adequate income for their own families. There is a lack of technical possibilities and expertise

required to process the primary products further and bring them to the market. The green innovation centre therefore supports smallholders and businesses involved in cashew, peanut and soy production. In addition to establishing good agricultural practices and providing improved planting material, the support also helps to make access to small loans easier.



OUR OBJECTIVES UP TO 2021:

- **To increase income** at 40,000 smallholdings by 33 per cent
- **To increase employment** through the creation of 1,500 new jobs (20 per cent of which will be for young people and 35 per cent for women)
- **To provide training** for 80,000 smallholders (including 28,000 women and 16,000 young people)

SUPPORTED INNOVATIONS:

➔ **Cashew production gathers steam:** Various nurseries are being provided with improved seed so as to be able to grow their own high-quality seedlings. 2,000 smallholders have also received grafted cashew seedlings from Ghana, with the new trees yielding up to three times as much fruit.

➔ **Processing takes place in the field:** Using a soybean threshing and cleaning machine, farmers are able to process their harvest directly in the field. This saves the farmers a lot of time and effort as they are no

longer required to carry out the arduous tasks of threshing and winnowing the harvested crops by hand.

➔ **Fruitful negotiations:** Producers of peanut and soybean seed and two Togolese farmers' associations have reached agreements fixing the quantity of seed to be purchased by smallholders. This leads to more favourable prices.

SOY PROCESSING MADE EASIER

By Tomdema Kalouféi

“Just look: six people operating the soybean threshing and cleaning machine. The soy plants are stuffed in the funnel at the top – and the clean beans come out of the bottom. I’m the president of a cooperative of 32 farmers and we grow organic soy. It’s a back-breaking job: at harvest time we are out in the fields by 7 o’clock in the morning. Just last season, we had to thresh the harvest by hand and spend hours winnowing it, in the heat. It’s different now. And, on top of that, with the machine we produce in one day up to five times as much as we did before with our bare hands! It also has the advantage that the harvested soy plants no longer have to lie around in the field for days before we process them, where quite often they used to get destroyed by the next rainfall.

Soon the new threshing-cleaning machine will be used in the other villages as well – so everyone feels the benefit!”



PROJECT PARTNERS:

Lead executing agency: Ministère de l’Agriculture, de l’Élevage et de l’hydraulique, MAEH (Togolese Ministry of Agriculture, Livestock and Fisheries)/Ministère du commerce, de l’Industrie, de la promotion du secteur privé et du tourisme, MCIPSPT (Ministry of Commerce, Industry, Promotion of the Private Sector and Tourism)

Implementing and cooperation partners: Technical Assistance and Support Institute (ICAT), agricultural training at state and civil society level (INFA), Togolese Chamber of Commerce and Industry (CCIT)

Research and science: Togolese Agricultural Research Institute (ITRA), universities in Parakou and Abomey-Calavi

Tunisia – New business models with strong agreements



The unemployment rate in Tunisia stands at 30 per cent and is particularly high among young people living in rural areas. For a number of years now, the Tunisian government has been trying to create suitable framework conditions for a private sector that can compete on the international stage. However, economic development is hampered by the fragile security situation in the region. Farmers' earnings are

only low and many young people do not want to work on their families' smallholdings for the long term. On the other hand, good opportunities can be found in the meat and dairy industries, as well as in the farming of certain types of fruit and vegetables. The green innovation centre focuses in particular on the milk and potato value chains and strengthens these by introducing new business models.



OUR OBJECTIVES UP TO 2021:

- **To increase income** at 12,500 smallholdings by 19 per cent
- **To increase employment** through the creation of 200 new jobs (20 per cent of which will be for young people and 35 per cent for women)
- **To provide training** for 15,000 smallholders (including 5,250 women and 3,000 young people)

SUPPORTED INNOVATIONS:

➔ **Fresh potatoes in autumn:** Farmers on Tunisia's high plateaus close to the border with Algeria start their new planting period as early as June. By doing this, potatoes will for the first time be available in autumn once other stocks are empty.

➔ **New feed sources:** Cactus shredding machines are processing feed for sheep and cows. Cactuses store such a lot of liquid that animals have an "integrated water" supply even during periods when there is little rainfall.

➔ **Sharing industry knowledge:** A cooperation agreement with the privately run Tunisian dairy giant Délice is benefiting small dairy farms. The dairy shows them various techniques which they can use to increase their milk production and develop their entrepreneurial skills. New milk testing equipment also helps the farmers as far as quality assurance is concerned.

HARVESTING POTATOES SUCCESSFULLY IN OCTOBER

By Hajji Mohsen

"I live in El Ksour, the remote region in the highlands of Tunisia. The farming families that live here are poor, and the yields from their fields are meagre. My family grows potatoes, tomatoes, pepper, alfalfa and cereal crops on 2.5 hectares of land. Up to now, the profit made from the sale of potatoes was rather small but this year we have introduced another cultivation period using new, high-quality seed potatoes. When we then sell the potatoes in October, there are no other potatoes left in the entire market. The prices we obtain are considerably higher, in some cases twice as much as what can be expected during the peak season. This has improved our lives greatly."



PROJECT PARTNERS:

Lead executing agency: Ministère de l'Agriculture, des ressources hydrauliques et de la pêche (Tunisian Ministry of Agriculture, Water Resources and Fishing)

Implementing and cooperation partners:

Agence de Promotion des Investissements Agricoles, APIA (government agency for the promotion of agricultural investment); private Tunisian companies within the value chains; International Center for Agricultural Research in Dry Areas (ICARDA); Office d'Élevage et des Pâturages, OEP (government agency for livestock and pasture production)

Private sector: PEAT, Délice dairy

Research and science: Institution de Recherche et de l'Enseignement Supérieur Agricoles, IRESA (Tunisian National Institute of Agricultural Research and Higher Education); Institut National de Recherche Agronomique de Tunisie, INRAT (National Agricultural Research Institute of Tunisia); technical centres (e.g. Centre Technique de la Pomme de Terre et d'Artichaut, CTPTA (potato and artichoke technical centre)

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