Together for a Strong Agriculture Sector

The Bilateral Cooperation Programme of the BMEL
Dear Readers,

Exchanging experiences and jointly promoting a sustainable agricultural sector – this is what characterises the bilateral projects of our Federal Ministry of Food and Agriculture. We want to show what has stood the test of time in Germany and Europe, thereby opening up opportunities and possibilities for our partner countries. We thus provide new impetus for a modern and resource-conserving agriculture.

Our projects stimulate technical dialogue and promote mutual understanding. This brochure shows our engagement in China, India, Morocco and Ukraine. I attach just as much importance to a climate-friendly and efficient agriculture as I do to fair trade for a safe and properly balanced diet. It is precisely here that our joint action is important.

You can find more information on our international projects in the fields of food and agriculture at www.bmel-kooperationsprogramm.de.

With best wishes

Julia Klöckner
Federal Minister of Food and Agriculture
Agriculture with a Future

How can we shape agriculture, animal husbandry and crop production so that they offer both us and our environment a healthy future?

The Bilateral Cooperation Programme (BKP) of the BMEL deals with these and similar questions at the global level. It strengthens the German-international exchange between political and economic actors from the agricultural sector. The partner countries are emerging nations that are important in terms of agro-food policy and are also the focus of the BMEL’s bilateral cooperation.

Formation and objective

What began in 1993 as a programme for familiarising countries in Central and Eastern Europe with market-economy structures has since developed into a successful, continually-growing global concept. All projects are developed and managed in close consultation with partner countries. Accordingly, the cooperation projects build on existing reform projects. What follows in each case is an often-intensive collaboration, one which expands the horizons of both partner countries at technical, economic and political levels.

Since the cooperation projects are implemented in or with the administrations and institutions of the partner countries, the outcomes can often be implemented directly into the countries’ national legislation.

At a technical level, the know-how resulting from the projects can be passed on to agricultural extension workers, as well as managers and staff in the partner country’s agricultural sector through training opportunities from national authorities, associations and educational institutions.

Future development

Experience shows that synergies can be created through diverse collaborations with a partner country. Diverse, in this case, means that multiple interlinked projects in a given country can be implemented in a resource-efficient and sustainable manner.

Examples of these in-depth cooperations can currently be found in the partner countries of China, Ukraine and Ethiopia, and they are also emerging in Kazakhstan.
future, in-depth cooperations of this sort should also be realised in other central focus countries. The following five projects give an insight into successful cooperations with various focal points.

**Budgetary resources per project country (%), for the year 2019**

The following graphic illustrates how the funds of the Bilateral Cooperation Programme were distributed internationally.

**Project formats**

**Dialogues**

At the core of the Bilateral Cooperation Programme are political and technical dialogues on topics in the agri-food sector, in which public authority representatives, scientists and political decision-makers from partner countries and Germany can exchange on legal and administrative framework conditions on an even footing. The contents of these dialogues represent the bilateral interests of both countries.

**Practical knowledge**

The transmission of practical expertise for the sustainable production of agricultural products takes place, among other means, through demonstration projects. The application examples are targeted at specialists in agricultural enterprises, as well as businesses from the agri-food sector. German companies also bring their expertise and specific contributions to the demonstration and training projects. This way, specialists in partner countries can learn about sustainable production practices and how to use modern technologies. Here, German companies benefit from their products becoming better known in the partner countries.

**Self-organisation**

The sustainable strengthening of self-organisation forces in the agriculture sector is supported through means such as association cooperation projects. Umbrella organisations of the agri-food sector are supported in better representing the interests of their members and offer tailor-made services that better meet the demand.

Other topics that are addressed in the projects of the Bilateral Cooperation Programme are, for example, support of young talents or professional exchange programmes.
Cooperation Projects Worldwide

In addition to the five cooperation projects described in detail, this map provides an overview of all the countries in which the BMEL supports further cooperation projects.

1. **India: The Budding “Seed Bowl”**
   - South Africa
   - Zambia
   - South Africa

2. **Morocco: A Successful Concept Catches on**
   - India
   - Brazil

3. **Ukraine: A Clear Path to Organic Production**
   - Russia
   - Mongolia

4. **China: A Cycle with Win-Win Potential**
   - China

5. **Climate Adaptation and Climate Protection**
   - Argentina

Scope of Activities

- Agricultural Finance
- Agricultural Insurance
- Land Market
- Wine Law
- Animal Welfare and Animal Husbandry
- Certification and Food Safety
- Development of Rural Areas
- Organic Farming
- Education and Training in the Agricultural Sector
- Climate Adaptation and Climate Protection
- Inter-Farm Cooperation and Cooperative Sector Development
- Seed Sector Development, Seed Law and Plant Variety Protection
- Animal Welfare and Animal Husbandry
- Certification and Food Safety
- Development of Rural Areas
- Organic Farming
- Education and Training in the Agricultural Sector
- Climate Adaptation and Climate Protection
- Inter-Farm Cooperation and Cooperative Sector Development
- Seed Sector Development, Seed Law and Plant Variety Protection
Climatic changes and a decline in the amount of farmland available per capita create a major challenge for India: providing agricultural produce for a growing population. This cooperation project focuses on strengthening the seed sector as the foundation for the self-provision and competitiveness of Indian farmers.

The availability of new plant varieties with characteristics such as improved yield, resistance against crop pests and diseases, as well as the ability to adapt to changed climatic conditions, is essential for a sustainable increase in productivity in the Indian agriculture sector. First-class seed stock of authorised varieties contributes to ensuring the fundamental provision of foodstuff for the population and the supply of high-quality animal feed.

**From expert dialogue to practical applications**

Since 2013, an expert dialogue has brought together representatives from seed authorities, seed certification offices, agriculture universities and national and private seed companies, as well as their interest groups. The most important topics of the cooperation project include the

• production,
• certification,
• processing,
• storage and
• trade

of high-quality seed.

Concrete approaches for optimisation along the seed production chain will be trialled in selected federal states. In the first instance, the project has implemented practical measures in the region of Telangana, which has set itself the objective of becoming the “seed bowl” of
India. Measures were undertaken to make the project results accessible for as many people as possible. For example, information sheets for tried and tested cultivation methods were created for the 12 most important crop plants and distributed to seed producers in villages. In a further step, video sequences concerning best practices in the production of corn and paddy seed stock were created. These resources are also relevant for farmers in other regions. The practical application of measures leads to the development of competences and networks between the participating project partners. These are necessary to ensure sustainability.

**Alignment with international standards**

A regulated framework for plant variety protection and seed trade is pivotal for India’s international competitiveness. The implementation of the newest methods in plant breeding and the certification of varieties according to OECD standards are the key to the international market. As part of the project, a number of study tours to Germany and the Netherlands took place. The trips allowed specialists to exchange on such alignment measures, which strengthen international cooperation in the seed sector.

The current consolidation phase of the expert dialogue is building on the previous progress. The positive approaches of the cooperation to date should be continued and expanded upon, in order to increase the impact and outreach of the project.
Agricultural businesses in Morocco suffer from the consequences of climate change. An absence of winter rainfall can mean the end of their commercial existence. Harvest yields can drop drastically in drought periods – all the way to complete crop failure. The cooperation project “German-Moroccan Excellence Centre for Agriculture” (CECAMA) thus concerns itself, in part, with possibilities for risk minimisation and the resource-efficient growth of crop yields and productivity. In addition to crop cultivation, the following are core topics for the cooperation project:

- Sustainable animal husbandry and feeding
- Renewable energy
- Farm management
- Climate protection

Field trials in the cooperation are mostly implemented on land belonging to partner farms. Moroccan farmers thus have the opportunity to try out innovative approaches under specialist supervision. It is especially encouraging that the partner farms in the sector have thereby made a particularly strong contribution to the acceptance and dissemination of the new methods in their region: In professional exchanges with their peers they report on the new crop cultivation methods and their results.

A Successful Concept Catches on

The intermeshing of theoretical knowledge transfer and practical applications in the agriculture sector deliver remarkable results for the introduction of modern crop farming methods. It is now evident that the farmers who host the first successful field trials on their land pass on their knowledge and experience to other agriculturalists, and so function as multipliers at the regional level.
Risk minimisation in drought periods
When a new cultivation technique leads to an acceptable crop yield — despite persistent dryness — the news travels fast in professional circles. The independent farmer Larbi Ghazouli can confirm this. He made around 10 ha of his 85 ha farm in the north-west of Morocco available for demonstration purposes. The decision paid off: By the end of the first season, the test plot had yielded a grain harvest comparable to the total harvest of the remaining 75 ha of land. This result was primarily due to the use of direct sowing — a method which protected the farmer from high losses in the following season when a lack of rain saw grain harvests in the region collapse from the usual 7 t/ha to 0.3 t/ha. Ghazouli obtained a harvest of just under 3 t/ha, which was a satisfactory result considering the increased grain price.

Water-sparing cultivation with direct sowing
Unlike conventional grain sowing methods that involve ploughing the land first, direct sowing involves the seeds being planted directly in the unturned soil. Much less water evaporates with direct sowing in comparison to ploughing methods, where the upper layer of soil is turned and opened up completely. The direct sowing approach has been proven to be particularly advantageous in dry years. Larbi Ghazouli’s results piqued the interest of the farmers in his area. Following the success of the field trial on his plot, other farms from the surrounding area are also adopting this method. In the meantime, farms with a combined area of more than 3000 ha have adopted the direct sowing approach.

Improved production processes
Growing trials using conventional production processes have also led to improved productivity: The preparation of a finely-crumbled seedbed was able to improve the germination conditions for rapeseed crops, which also led to higher yields. The modern cultivation methods have led to the rapeseed cultivation area nearly tripling since 2015 — growing to a good 10,500 ha. With this, Morocco can substitute part of its rapeseed import through its own production. This number continues to grow.

Due to its success to date, the CECAMA is connecting with Moroccan national and private actors to be able to operate the practice-oriented training centre together in the future.
Organic farming in Ukraine aims to develop into a professionally-operating agricultural sector that produces high-quality organic products. Therefore, all participants of the cooperation project also focus on the improvement of the education and further training of specialists in agriculture and administration.

**Most important goals**

- The strengthening of the legislative framework and administration to effectively support and regulate organic farming
- Preparing the necessary specialist knowledge for agriculturalists and processors, as well as education and consulting institutions, and other actors so that high-quality organic products can be produced and marketed in line with the legislative provisions.

**Tangible progress**

An important aspect of all BMEL cooperation projects is the sharing of expertise in such a way that partners can implement the learnings in the future by themselves. The Ukraine cooperation example clearly shows that the readiness to accept recognised methods and procedures — and to broadly advance their implementation — is present. This is evident in collaboration with government agencies, as well as in collaborations with educational institutions and private organisations.
Online access to specialist knowledge

There is a high demand for specialist know-how in Ukraine. To meet this demand and simultaneously reach as many interested parties as possible, the COA created an online knowledge platform for organic farming. Initiated with the Ministry for Education and Science and the office responsible for professional education in the agricultural sector, the internet portal will develop into a central contact point for knowledge transfer in organic farming.

The COA drew on the experiences of similar platforms in other countries for the creation of this knowledge platform. In particular, it is intended to promote the distribution of specialist knowledge within universities, technical colleges, consulting services and other education providers.

Together for EU market entry

A local market for organic products is slowly developing in Ukraine, with demand growing mainly in the larger cities. However, many organic farms are particularly interested in marketing their products to international markets — especially EU countries. In order to establish Ukraine as a reliable supplier of organic products to international markets, a more reliable legislative framework is required. The harmonisation of Ukraine’s national legal provisions with EU legislation is beneficial in view of the trade relations with the EU that are also intensifying in other sectors.

The COA accompanies and advises the Ukrainian government on the therefore necessary adjustments at the legislation level, in implementation provisions and in institutional structures. Ukrainian organic goods — even in niche markets such as berries or nuts — are thus finding their way into German shop shelves.
22% of China’s greenhouse gas emissions stem from agriculture; in Germany, this figure was 7.3% in 2017. It is therefore positive that the Chinese President Xi Jinping has recognised climate protection as a requirement for all development goals.

**Interactions of the key focus areas**

In this context, the DCZ established a German-Chinese expert dialogue to develop recommendations for action in the form of specialist publications and policy briefs on measures aimed at reducing greenhouse gas emissions in the agricultural sector. It has quickly become clear that a separation of expert groups in the areas of crop and animal farming does not seem to be practicable since the closed-cycle economy – the consideration of plant and animal production as one entity – represents the essential basis for sustainable agriculture. Only with an integrated overview of the two areas and their interactions with the climate can a stable foundation for sustainable plant production and animal husbandry develop.

The simplest example for such a cycle is the use of animal waste as organic fertiliser: Ingredients from cow feed return to the soil via the processing of manure. During study trips and workshops, the climate experts from the DCZ identified important solutions for more...
climate-friendly farming from both countries, which are distributed in the form of presentations and publications, and discussed. The possible solutions include diverse aspects of cultivation and animal husbandry, from the importance of humus formation to the breeding of new and better-adapted varieties, possibilities for conservative soil management and more efficient nitrogen utilisation in animal husbandry.

**Climate protection in animal husbandry**

The animal breeding project places primary emphasis on the implementation of concrete measures in pilot operations. Animal husbandry causes emissions that can have negative effects on the climate and the environment. These include, first and foremost, the greenhouse gases methane and nitrous oxide, in addition to ammonia, nitrate and phosphate.

The following environmental and climate protection focuses arose from the geographic and operational basic requirements of the pilot operation locations:

- **Reduction of ammonia emissions**: A test is running in a Tianjin province dairy farm to see what influence various frequencies of dung removal have on ammonia emissions. The reduction of emissions also had the positive side-effect of reducing the smell in the cattle stalls.

- **Decrease in CO₂ and methane emissions**: The so-called “Cool Farm Tool” is being used at a sheep farm to measure the CO₂ footprint of the farm and target emission reductions. On top of this, methane emissions should be reduced through tests with feeding practices. In a country with around 170 million sheep, small changes already make significant differences.

- **Reduction of ammonia emissions**: The ammonia discharge resulting from the storage and distribution of dung is at the core of a pig farm pilot in Hebi Province. Farmers’ understanding of what nutrients leach into the groundwater due to dung spread on the fields is here an important factor. In the long-term, modern distribution systems should regulate emissions.

- **Avoiding eutrophication and reducing methane emissions**: In a yak farm on the Qinghai-Tibetan Plateau, the improvement of nutrient management will fulfil two purposes: Nitrogen and phosphorus are used more effectively to prevent excessive soil saturation. This leads to better regrowth of yak feed. In turn, this reduces the animal mortality rate – and thus the methane emissions per kilo of meat produced.
### Overview: Every BKP Project

As of January 2020

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* Extension planned