



Africa meets China: Perspectives for Cooperation in the Rice Value Chain

Study Tour of the Rice Working Group
to China in the Context of the
Green Innovation Centres for the
Agriculture and Food Sector

22 – 26 July 2019

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Background of the Study Tour

A trilateral cooperation between Germany, China and Africa in the framework of the rice value chain was one of the first project proposals developed under the Sino-German Center for Sustainable Development (CSD) after its establishment in May 2017 in Beijing. The main partners for this cooperation would be the Green Innovation Centres for the Food and Agriculture Sector (GIC) and the Chinese Agriculture Technology Demonstration Centers in Africa (ATDC).

Both Germany and China believe that there is significant potential for fruitful cooperation in the rice sector in Africa. Rice is a staple food in many African countries and constitutes a major part of the diet in many others. As the world population is increasing, the demand for rice is growing rapidly. 90 per cent of locally grown rice is produced on small fields of less than one hectare. Local production does not meet the continent's rice needs. China is the world's leading paddy rice producer, and has the highest rice consumption in the world. The ATDCs are the flagship China-Aid projects for technology development and transfer in the field of agriculture, and some of the ATDCs in Africa focus particularly on rice innovations. The German agricultural technical cooperation in Africa is based on a value chain approach. The goal is to improve rice productivity, effectiveness, access to the market, and policies. To achieve that, the Green Innovation Centres in Benin, Burkina Faso, Ghana, Mali and Nigeria are supporting innovations in the rice value chain.

Since the start of the cooperation, the CSD and the GIC Rice Working Group have been working closely together to identify the potentials of the named project proposal. On 10–13 December 2017, the Chinese Foreign Economic Cooperation Center under the Ministry of Agriculture and Rural Affairs invited GIC to its annual Conference on Chinese–African

Agricultural Cooperation in Hainan, China where representatives from the Rice Working Group and CSD were present. During 15–22 May 2018, GIC and its partner institutions in the Competitive African Rice Initiative (CARI) visited the ATDC in Tanzania, and GAWAL's Agriculture Industrial Park in Nigeria. In October 2018, CSD, CARI and Kilimo Trust carried out an appraisal mission to the ATDC in Tanzania to assess the feasibility for cooperation between CARI and ATDC on rice value chains. Three weeks later, Long Ping High-Tech Agriculture Co. Ltd, a leading Chinese company on hybrid rice, met with the Rice Working Group in Germany at the GIZ office. The exchanges showed that the German and Chinese approaches are not contradicting but complementing each other. The ATDCs have a particular strength in productivity increase through technologies (better seed and cultivation practices), while Germany is particularly strong in strengthening inclusive value chain development and capacity development with small scale farmers. Together, they can provide a platform to provide market access for increasingly profitable rice.

While political discussions and further assessment of the trilateral cooperation continue, both GIC and CSD believed that a study tour to some of the company headquarters of the ATDCs in China as well as other rice institutions could add to the understandings of Chinese rice technologies and practices for both Germany and African partner countries. The study tour would also promote governmental, academic and business exchange among all sides, create potential entry points for future cooperation, and moreover, assess the partner countries' interests in the cooperation.

In May 2019, the Rice Working Group and the CSD decided to facilitate the study tour. It was decided that the delegation would be composed of approximately five representatives from each of the five African countries in the working group: Benin, Burkina Faso, Ghana, Mali and Nigeria (Unfortunately, Nigeria didn't participate in the trip in the end because of visa issues). The representatives were selected from governments, farmer associations, universities, local companies and the different Green Innovation Centres. The delegation was coordinated by the steering group of GIC in Germany, and the trip was organized by CSD in Beijing. The travel period was chosen to see the harvesting of the late season rice and the planting of the early season rice in Southern China.



The Delegations



NAME	FUNCTION	ORGANISATION
Charafa Olanmi	Head of the Agricultural Mechanisation Division	Ministry of Agriculture
Akpo Joseph Koutchika	Coordinator	Advisory for the Organisation of Rice Farmers in Benin
Rufin Godjo	Agricultural Advisor	GIZ / GIC
Benoit Marcel M. Houard	Technical Assistant	GIZ / GIC

BURKINA FASO



NAME	FUNCTION	ORGANISATION
Daouda Sanogo	Technical Advisor	GIZ / GIC
Ismael Aziz Alexandre Sanguisso	Technical Advisor	GIZ /GIC
Valentin Stanislas Edgar Traore	Researcher	Institute for Environmental and Agricultural Research
Idrissa Savadogo	Technical Director	NAFASO
Somtinda Kafando	Technical Director	FAGRI SARL
Marc Gnomou	Department Manager	Ministry of Agriculture and Water Management
Abdoulaye Sawadogo	Vice president	Rice Committee of Burkina

GHANA

NAME	FUNCTION	ORGANISATION
Al Hassan Imoro	National Desk Officer for Rice	Ministry of Food and Agriculture
Joseph Ofori	Researcher	University of Ghana
John Atiase	Rice Farmer	Weta Irrigation Scheme
Joel Eyra Tsatsu	CEO	Wienco Ghana Ltd.
Elvis Mensah-Bonsu	Technical Advisor	GIZ / GIC

MALI

NAME	FUNCTION	ORGANISATION
Djiuguiba Kouyate	Advisor for Rice	GIZ / GIC
Amadou Cheick Traore	Head of the Department of Agricultural Education	National Directory for Agriculture
Alassane Sow	Secretary General	Sector Organisation of Rice
Keita Bamoye	Director of Support for Rural Areas	Office of Niger

GERMANY

NAME	FUNCTION	ORGANISATION
Ernst Otto Christian Zippel	Project Manager for Innovations in Agroeconomics	AfricaRice
Andrea Wilhelmi-Some	Project Manager	GIZ / GIC
Bastian Beege	Project Manager	GIZ / GIC



China is a country in East Asia bordering the East China Sea, Korea Bay, and the South China Sea. Neighboring countries include 14 sovereign states. The terrain is diverse in China with mostly mountains along with deserts in the West and plains in the East. Principal rivers flow West to East, including the Yangtze and Huang He rivers.

> **GDP per capita** (PPP): \$16,842 (2017)

> **Population total:** 1,386,395,000 (2017)

> **Climate:** Due to its vast land, stretching latitude, and diverse terrain, China has different types of climate in different regions. The Eastern region is influenced by monsoon (from North to South: temperate monsoon, subtropical monsoon, and tropical monsoon). Its Northwestern region has a continental climate while the Tibet area is arctic all the year round. Generally speaking, China has a hot and rainy summer, and a cold and dry winter.

> **Agriculture:** Most of China is unproductive agriculturally. Arable land is concentrated in a band of river valleys and along the southern and eastern coasts. Mechanized agriculture makes more sense for northeast China which is made up largely of flat plains. Farms run by individual farmers and villages make more sense in the more mountainous Southwest where a lot of slopes and hillsides have terraces built on them so crops, particularly rice, can be grown on them.

About 35 percent of China's labor force is in agriculture. There are 425 million agricultural workers (200 million farming households) in China. A little over a decade ago China was home to 700 million farmers. They made up about 60 percent of the population.

Beijing is the capital of the People's Republic of China. It is not only the nation's political centre, but also its cultural, scientific and educational heart as well as a key transportation hub. Beijing has served as a capital of the country for more than 800 years.

- > **Population:** 21.54 million
- > **Area:** 16,410.54 km²
- > **Climate:** Beijing has a monsoon-influenced continental climate with hot, humid summers and cold, dry winters.

Hunan is a provincial administrative region of the People's Republic of China. Located in central China, with a total area of 21.18 million km².

- > **Provincial capital:** Changsha
- > **Population:** 68.988 million
- > **Climate:** Hunan has a continental subtropical monsoon humid climate. The annual average temperature is generally 16–19 °C. The average temperature in the coldest month of winter (January) is above 4 °C. The average temperature in spring and autumn is mostly between 16 and 19 °C. The average summer temperature is mostly between 26 and 29 °C.
- > **Agriculture:** In 2018, the annual grain planting area is 4747.9 thousand hectares, and the grain output is 302.29 million tons.

Zhejiang is a provincial administrative region of the People's Republic of China. Located on the southeast coast of China, the largest river in the province, Qiantang River, it twists and turns, so the province named by Zhejiang (‘folded river’), with a total area of 105,500 km².

- > **Provincial capital:** Hangzhou
- > **Population:** 57.37 million
- > **Climate:** Zhejiang belongs to the subtropical monsoon climate, with four distinct seasons, sufficient of sunlight, abundant rainfall, humid air, synchronised rain and heat seasons, diverse climate resources, and numerous meteorological disasters.
- > **Agriculture:** Zhejiang Province is known as the “land of fish and rice”. In 2018, the annual grain output was 5.99 million tons.

Programme

Monday, 22 July 2019

- 9 – 9.30 AM Internal meeting for the whole delegation at the GIZ office in Beijing
- 9.30 – 12 AM Workshop on Chinese Agricultural Cooperation with Africa at the GIZ office in Beijing
- 4.05 – 6.35 PM Flight from Beijing to Changsha

Tuesday, 23 July 2019

- 9 – 11.30 AM Workshop and field visit at China National Hybrid and Rice R&D Center
- 12 – 1.30 PM Preview of the Chinese National Rice Museum
- 2.30 – 5.30 PM Workshop and field visit at Longping Hightech Guanshan R&D Base

Wednesday, 24 July 2019

- 9 – 11.30 AM Workshop and field visit at Xiang Liang Mechanical (Agricultural Machinery)
- 3.10 – 4.40 PM Flight from Changsha to Hangzhou

Thursday, 25 July 2019

- 9 – 12 AM Workshop and field visit at China National Rice Research Institute
- 1.40 – 3.30 PM Workshop and field visit at Fuyang Rural Cooperative and Farm (business models, planting)
- 3.45 – 5.30 PM Workshop and field trip at Fuyang Jiqing Farm (Agrotourism)

Friday, 26 July 2019

- 9.30 – 11.30 AM Workshop and field trip at Zhejiang Baolong Rice Ltd. (Rice processing)

Workshop Report: Chinese Agricultural Cooperation with Africa

Time: 22 July 2019
Venue: GIZ Office in Beijing

Chinese speakers:

- > Mr. Qin Lu, Division Chief, Investment Promotion Division, Foreign Economic Cooperation Center (FECC) of Chinese Ministry of Agriculture and Rural Affairs
- > Mr. Wei Kangning, Marketing Manager from the private consortium CGCOC Agriculture Development Co. Ltd
- > Mr. Xu Jinze, Deputy team leader, Chinese agriculture technology team to Burkina Faso

Chinese agricultural business in Africa

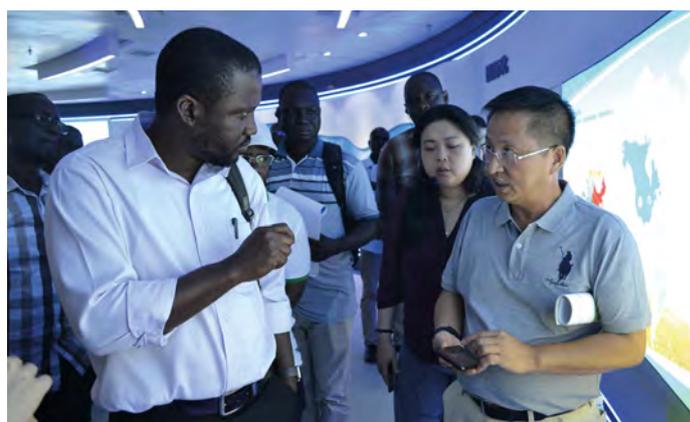
CGCOC Agriculture Development Co. Ltd is one of the largest private Chinese companies in the agricultural sector in Africa. It has developed a business network in west and central Africa and a headquarter in Nigeria. It supplies regular seed (corn and rice seeds), basic rice seed, and foundation seed for the Nigerian Government. It also runs the CGCOC Agriculture Hi-tech Industrial Park in Abuja, where a Chinese Agricultural Technology Demonstration Center will be established in 2020. One of its certified seed varieties in Nigeria is GAWAL R1.

CGCOC believes that Chinese-African agricultural business cooperation has broad prospects. On one hand, China's various agricultural development models, agricultural technology and industrialisation development experience are relevant for Africa, and both sides have great potential for cooperation in agricultural industrialisation. On the other hand, Chinese-African agriculture is highly complementary. Africa has advantages in agricultural resources, and China is the largest agricultural product demand market with a huge demand for African tropical economic crops, providing Africa with a broad market space.

A long-term and sustainable development strategy is especially important to Chinese agricultural businesses. Engaging in CSR and public services activities helps to create a better social environment for Chinese overseas businesses.

CGCOC gave the following suggestions to African agricultural companies:

1. African companies need to pay attention to foreign demands and interests.
2. Though China's agricultural development model and technology may have its advantages, they shouldn't be copied directly but rather modified in response to the African situation.
3. It is important to identify the key links of the industry chain to avoid risks of engaging the entire value chain.
4. Enterprises should provide technical trainings and services to smallholder farmers for them to overcome gaps in technical quality standards.



The African delegation had many things to discuss with their Chinese hosts.

Overview of Chinese agricultural technical cooperation with Africa

Chinese-African cooperation in agriculture dates back to 1959. Currently, the cooperation covers foreign assistance, research and technical exchanges, trade and investment, and engagement through multilateral cooperation. In 2017, the value of Chinese-African bilateral trade in agriculture reached 5.99 billion USD, among which 2.95 billion USD were Chinese imports from Africa, including mainly capital-intensive products like cotton seeds, oilseeds, tobacco, and aquatic products. Labour-intensive products including tea, sugar, and vegetables covered around 70 percent of Chinese export to Africa.

During the Forum on China-Africa Cooperation in Beijing in 2018, President Xi Jinping announced the FOCAC Action Plan (2019-2021), including plans to implement 50 agricultural assistance programs, to provide one billion RMB of emergency humanitarian food assistance to African countries affected by natural disasters, and to send 500 senior agriculture experts to Africa.

So far, China has established 20 Agricultural Technology Demonstration Centers in 19 African countries, provided a USD 80 million fund for South-South Cooperation through the Food and Agriculture Organisation of the United Nations, and established research partnerships with agricultural research institutions in ten African countries.

Chinese agricultural technical cooperation in Burkina Faso

In 2018, China sent 37 agricultural technical teams to Africa. After the re-establishment of diplomatic ties between China and Burkina Faso, the first team to Burkina Faso was dispatched from Hubei Province, China. The team included seven technical experts on rice, irrigation and machinery, and two Chinese-French interpreters. They work on six projects, including irrigation, rice, agricultural machinery, training, material aid, and exchange promotion in two locations, Ouagadougou, the capital city, and Bagre, Tenkodogo in the central eastern region.

The work on rice was a focus and carried out through cooperation with the Rice Center under Burkina Faso's Ministry of Agriculture and Hydro-Agricultural Development. Within the first year of the dispatch, the team implemented three rice technical projects, one at the Bagre site, and two at the Bama site. In one of the protospecies seed production project at the Bama site, the yield increased to 5.6 tons/ha from 3.3 tons/ha, through doubling the area of seedling bed, sowing in low density, adjusting the times of fertilisation and days before transplanting, and implementing scientific field management. Team members were awarded with special prizes by the Ministry of Agriculture and Hydro-Agricultural Development.



The African delegation and their Chinese hosts sat together...



...for many hours exchanging on experiences and knowledge.

Visit Report #1: China National Hybrid and Rice R&D Centre & Longping Hightech

The China National Hybrid and Rice R&D Centre...

...is a research institution specialized on hybrid rice. Since its creation in 1984 it is cooperating with various companies, organizations and countries on an international level. Its main research focus lies in the areas of Rice Biotechnology, Genetics and Breeding, Agricultural Cultivation and Variety Resources. Since its establishment in 1984, the CNHRRDC is improving and researching hybrid technologies in rice crops.



The whole delegation at the Hybrid and Rice R&D Centre.

The Father Of Hybrid Rice

The Hybrid Rice Exhibition Center inside the CNHRRDC shows the development of hybrid rice:

In the 1950s, Yuan Longping accidentally found a rice plant that had one spike with five times bigger tassels in a farmer's field. He then developed a technique to reproduce this single mutated plant and preserve its unique genetics. That achievement marked the beginning of the second green revolution in China, leading to higher yields and more efficient farming in the whole of China. That is why today, Mr. Longping is celebrated as the „father of hybrid rice“.

At the R&D Base: The delegation was able to visit pilot rice fields - where different rice varieties and production methods are displayed - and the Development Center to learn about the development of the hybrid rice technology and its dissemination around the world.

The major outcomes were:

1. The Green Innovation Centers and the R&D Centers collaborate to support the transfer of hybrid technology to some African partner countries.
2. Introduction of the hybrid rice breeding system to African research institutions and local breeder companies. This would help enormously to become self-sufficient in rice production.
3. African countries could then stop importing rice from South East Asia.
4. All participating countries were very interested in the demonstrated hybrid rice technology and biotechnology at the R&D Base.



Examining the fields at the base.

Longping Hightech Guanshan R&D Base..

...is a modern high-tech seed company named after the researcher Yuan Longping. It has established a globally leading biotechnology platform and commercial breeding and testing system. The R&D base focuses on plant breeding, biotechnology and big data science to fully promote collaborative innovation across different R&D platforms.

Visit Report #2: National Rice Museum

National Rice Museum

The National Rice Museum in Changsha is the first large-scale rice museum in the world. Named after the rice expert Yuan Longping, it covers an area of 13,000 square meters and is divided into five zones shaped like rice grains. The museum provides information about the history and technology of rice and displays materials about Yuan Longping and the hybrid rice he developed.



Private tour of the museum

Sneak Preview in a museum

The delegation was given a preview to the National Rice Museum before its formal opening on 28th Sep 2019. Participants could learn about the history of rice production in China, about machineries and techniques for rice production from over 10,000 years ago until today.

Many techniques and tools that were used in China in the past can be seen in Africa today. This includes numerous standards in the agricultural sector, but especially in rice cultivation.

The exhibition ended up with Mr. Yuan Longping and his super hybrid rice as well as the production method "System of Rice Intensification" (SRI) that is used also all over the African continent as a well proven good agricultural practice.

The major outcomes were:

1. In the past, China has used the same production methods that are being used in African countries today.
2. Technologies in today's China are much more efficient and productive.
3. African countries have to go beyond using older technologies and advance in technologies and rice production methods like China did in the past.
4. But the Chinese agricultural practices do not sufficiently pay attention to sustainable agricultural practices. The combination of advanced technologies and environmental friendly agricultural practices remains a challenge for China as well as for Africa.



Wandering through history...



...of rice in China

Visit Report #3: Xiang Liang Mechanical

Xiang Liang Mechanical

Hunan Xiang Liang Machinery Manufacture Co. Ltd. was founded in 1956 and focuses on the development and manufacturing of food and oil machinery. The main portfolio includes rice mills, oil mills, food storage and conveying equipment as well as mobile grain loaders.



Tour through the machine pool

High-tech made in China

The company has an experience of 63 years in manufacturing agricultural machinery. In 2003 it moved to an industrial zone prepared by Chinese government. The presentation of different types of rice machines included rice bran processing and storage machines, mills and transporters.

Simple mechanization tools for farm activities like the "cono weeder" can be explored for the African context. For instance Ghana is interested to learn and utilize the adaptable version of simple mechanization tools used in rice production in China.

The company offers regular training in installing, using and repairing of their machines. Xiang Liang Limited usually invites African partners and buyers of the machines to China to take part in a comprehensive training.

The major outcomes were:

1. Interest in organizing common trainings on the use and maintenance of the machines in the African partner countries and giving long-term coaching to users. The Green Innovation Centres together with existing ATDC's could jointly organize such measures.
2. Xiang Liang Mechanical Company is working on establishing local branches in some countries like Mali and Nigeria. Unfortunately, headquarters in China do not have enough control over the quality of advice given by those branch offices. Together with GIZ, an internal control system for quality maintenance and advice could be established.
3. Ghana is interested to learn and utilize the adaptable version of simple mechanization tools used in rice production in China.



Presentation of the product portfolio



Explanation in detail by the Chinese guide

Visit Report #4: China National Rice Research Institute – Fuyang / Zhejiang Province

China National Rice Research Institute (CNRRI)...
...is an integrative research institute of basic rice science in China with international reputation. CNRRI focuses on basic and applicable researches with priority on solving significant scientific and technical problems in rice production. Engaging in rice research at population, individual, tissue, cell, and molecular level, its mission is to contribute food security, nutrition improvement and environment protection.



One of the most cutting-edge rice production sites

Research for long-term food security

During the meeting with the delegation, Dr. Luo Ju from the Program Management & International Cooperation Department of CNRRI presented the research institute and the latest advancements in international cooperation. Afterwards, there was an in-depth discussion on China's experiences with rice science and technology that could be applied in Africa, and on cooperation mechanisms between the three parties in relation to the rice industry chain in Africa.

CNRRI includes a seed company and an experimental farm as well as research centers in 4 regions of China: It's mission is to coordinate rice research, to conduct trainings and exchange as well as to publish in academic journals.

The major outcomes were:

1. Mutual intentions to come up with formal Memorandums of Understanding (MoU) between partner countries of the Green Innovation Centers and the Research Institute
2. Burkina Faso is interested to work closely with the CNRRI on establishing a similar research institute focused on rice along the value chain (MoU between INERA and CNRRI)
3. Benin would like to have a collaboration with CNRRI similar to Cambodia
4. Introduction of the new hybrid rice technology to African partner countries (for example Nigeria, Ghana, Burkina Faso)



CNRRI promoted trilateral cooperation initiatives

Innovations developed at the institute

1. Molecular Breeding
2. Indica – Japonica Hybrid Rice Breeding
3. Three-line hybrid rice breeding
4. Super rice: 18t/ha
5. Super early season rice
6. Rice-duck-production system

Projects for the future: Hybrid rice technology; Functional genomics & agronomic treats; Development of new breeding technologies; Technology transfer

Visit Report #5: Fuyang Jiqing Farm - „Produire et sourire“

Fuyang Jiqing Farm

Yunshang Farm was established in October 2015 with an area of 85.33 hectares. In 2017, it was awarded „Provincial Modern Agricultural Science and Technology Demonstration Base“ which is an award issued by the Chinese Government to particularly innovative agricultural businesses. The business scope of the farm involves vegetable and fruit planting, poultry, freshwater fish breeding, agricultural technology development, and agricultural products, flowers as well as seedlings sales.



Production tools could be inspected

An innovative business model

On 85 hectares of land, with both plane and fertile soil, the young entrepreneur had the idea to produce natural and healthy food. The farm grows vegetables, corn as well as rice on its own land and buys from contracted cooperatives and individual farmers from the neighbourhood following specific quality and food safety standards.

In addition, the farm integrated ICT-technologies to manage and control the whole production process.

Yunshang Farm integrates 5 entities: production – processing/packaging – transportation – services – commercialization, and provides delivery to gate services for companies, and households. In 2018, the annual sale reached around 1,888,980 Euros.

The Government awarded the entrepreneurs because of their innovative business model and their plan to create opportunities for young academics in suburban areas to take on responsibilities in the agricultural sector.

The major outcomes were:

1. Very interesting business model for various African partners who are also involved in contract farming as processors.
2. The company is not pre-financing or providing the inputs for the contracted farmers, but rather gives out the specifications and requirements for the production and quality standard of the product to be commercialized by the company later.
3. The farmers rather get an attractive interest rate by the bank (2% interest rate for all farmers) facilitated by the government for their credits and buy the inputs on their own.



The local team demonstrated their fields...



...and discussed their methods with the delegation.

Visit Report #6: Jiqing Agricultural-Tourism-Farm: young entrepreneurship

Zhejiang Baolong Rice Ltd.

Jiqing Farm is located in suburban Hangzhou, covering an area of 33 hectares. The farm combines leisure agriculture with tourism, and provides a place for catering and convention, fishing and barbecue, parent-child amusement park, and ecological agriculture, with a capacity of catering 500 people at the same time. The farm has received more than 180,000 visitors since 2015.



The young entrepreneur showed her shop

Agriculture as a tourist attraction

The local government offers incentives (start-up financing and a capacity development programme on business operating and marketing) for students in the cities to go back to rural areas, settle there and create their agricultural business.

The young entrepreneur Ms. Ni Shuna benefited from this program and transformed her parents' farm into a holiday student's camp and ecological farm for horticulture products including potatoes, strawberries and tree crops like pear. Simultaneously, she organizes holiday camps for students from cities (Hangzhou and Shanghai). In these camps, students will learn in different workshops about painting, production of herbal essentials and others.

The major outcomes were:

1. The idea of such a government incentives programme was well absorbed by the African delegations.
2. Combination of agriculture with education and leisure is a good business model to replicate also in the African partner countries.
3. By the way - the African delegation learned also how a hand-over of a farm responsibility from one generation to the next (also between men and women) can be profitable to the whole family.



The delegation engaged in discussions...



...about the innovative business model.

Results and Recommendations of the Study Tour with regards to Future (Trilateral) Cooperation

The workshop on the first day of the visit gave an insight into the current situation and challenges of the ATDC's in Nigeria, Ghana, Mali and Burkina Faso. The partners also explained how Chinese cooperation with Africa has been organized so far and what plans exist for the future:

Each partner country is looked after by a different Chinese province. The provincial government is responsible for the deployment of technical personnel and negotiations between governments. Agricultural companies from the respective provinces are commissioned to set up and operate agricultural technology and training centres. Agricultural cooperation with Africa is coordinated by the FECC, which together with the Chinese Ministry of Agriculture hosted a China-Africa Forum on Agriculture for the first time in 2006 and then intervened in 19 African countries in the areas of seeds, mechanisation, plant production and animal husbandry.

Sino-African agricultural cooperation includes foreign aid, joint research, technical training in China, trade and investment and cooperation through multilateral mechanisms. The FECC's aim in cooperation with Africa is the transfer of technology and knowledge to make African countries independent and self-sufficient in basic food production. The Chinese government is interested in importing high-quality agricultural products (so-called cash crops), such as soya, sesame or cocoa, from Africa. African countries are also supported in increasing the productivity of staple foods so that they have the necessary financial and land resources for the cultivation of cash crops.

Recently, the Chinese government established a development cooperation agency where GAWAL and other operators of the ATDC's have now also applied for state funding in order to finance necessary measures countering existing challenges in the fields of technology adoption, cultivation methods and training of local producers. The interest of the ATDC operators, the training institutions and the FECC for a cooperation with the GIZ lies in particular in the field of knowledge transfer, preparation of training contents and methods as well as in the concept of the value chain approach.

So far, the following activities have been implemented in Nigeria and Burkina Faso:

- > GAWAL has already established several agro-industrial parks in West Africa and established local seed production via smallholder farmers in Nigeria.
- > In cooperation with Longping High-Tech Agriculture Co., a hybrid rice variety was developed for West Africa - GAWAL R1 - and officially registered by the Nigerian Plant Variety Office. The yield potential is approx. 16t/ha.
- > The seed was sold to the Nigerian government, which in turn passes it on with subsidies to the local rice producers.
- > In Burkina Faso diplomatic relations were not established until 2017. Since then, a technical team from China has valued 2 rice perimeters and cultivated rice. Through improved cultivation methods with locally common varieties, an increase in yield of approx. 2.5 t/ha was achieved (from approx. 3 t/ha to 5.5 t/ha).
- > Additionally, the CNHRRDC has already conducted technical training on hybrid rice technologies for 6,000 government representatives and experts from over 100 countries via its international training centre on behalf of the Chinese Ministry of Commerce.



Results and Recommendations of the Study Tour with regards to Future (Trilateral) Cooperation

From the African perspective possible starting points for future cooperation are:

Mali:

- > The use and distribution of the hybrid rice variety with a yield potential under real conditions of approx. 12t/ha.
- > The Green Innovation Center in Mali organizes field days in October 2019 to demonstrate the System of Rice Intensification (SRI) and the application of locally adapted machines. The Chinese mechanical engineering company Xi-ang Lian Mechanical and the two rice research centres will be invited to the event to further discuss possible specific cooperations.

Ghana:

- > Joint research: Development of hybrid rice varieties. A partnership between Ghanaian agricultural research and the Chinese National Rice Research Institute (CNRRI) and the National Hybrid Rice Research and Development Centre (CNHRRDC) could be established here.
- > Dissemination of improved seeds: There is interest in the GAWAL model from Nigeria, especially in the fields of seed marketing and distribution to smallholder farmers through government programmes.
- > Mechanisation: many rice threshers and rice mills in Ghana are Chinese brands. Training in machine use and maintenance should be carried out on site. This could be organised jointly with the Green Innovation Centre.

Burkina Faso:

- > It is desirable to improve the after-sales service and the sale of spare parts from Chinese machine manufacturers in order to ensure more efficient use of the rice mills already existing in Burkina Faso.
- > Research: the CNRRI and CNHR-RDC research institutions, which specialise in rice, focus not only on production but also on processing and cultivation advice. This allows to address important problems at the interface of those topics. This could be a model for the transformation of Burkina Faso's agricultural research.

Benin:

- > Joint research: Exploring a possible collaboration with the China National Rice Research Institute to test hybrid seeds in Benin.

All country teams were impressed by the efficient cultivation method (SRI with individual specifics), the high-performance hybrid seed and the organization of the private agricultural farms. The African partners were particularly impressed by the model of contract farming by private production and logistics companies and the support provided by the state to individual farmers not through subsidies but through good credit conditions (farmers receive loans for inputs at 2% interest).



Impressions



Inspecting agricultural gear



Getting serious for the workshop at the GIZ office in Beijing



Trying to navigate between Chinese, English and French



Of course, a visit at the LongPing Rice museum could not be missed

Impressions



Having intense discussions...

...with the Chinese hosts.



Reviewing healthy fields



African culture meets Chinese Food

Impressions



Sightseeing in Beijing



Making new friends



Engaging in lively conversations throughout the trip



Enjoying the last evening together



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