SINO-GERMAN WORKSHOP ON ORGANIC FARMING AND GREEN DEVELOPMENT

中德有机农业种养结合与绿色 发展研讨会议程

Trenthorst, Germany, June 5 – 9, 2017

2018 German-Chinese Agricultural Center (DCZ)
Chinese Academy of Agricultural Sciences (CAAS)

Final report compiled and edited by Dr. Marco Roelcke, DCZ, Beijing, March 06, 2018
Background

This Workshop was first discussed by Dr. Hartmut Stalb, Head of Division 224 Research and Innovation at the German Federal Ministry of Food and Agriculture (BMEL) and Dr Zhang Zhenhua, Head of Division for Technology Cooperation and Conditions Construction, Department of Science, Technology and Education (DSTE), Chinese Ministry of Agriculture (MOA), during the 23rd Expert Group Meeting on Chinese-German Agricultural Research Collaboration, hosted by BMEL on 28 September 2016 in Freising, Germany. In November 2016, Dr. Zhang Zhenhua confirmed this topic for the Chinese side, and together with Dr. Marco Roelcke of the Sino-German S&T Platform, agreed on the working title of “German-Chinese Workshop on Organic Farming and Green Development” (中德有机农业种养结合与绿色发展研讨会).

This topic was closely related to current issues regarding the ongoing transformations in Chinese agriculture, away from pure quantity of production to a more sustainable, environmentally-friendly and quality-oriented production, including soil conservation aspects, both in the light of food safety issues, as well as of increasing consumer demands for higher quality food. The workshop therefore came very timely.

The workshop was organized by the Thünen Institute (TI) of Organic Farming, Thünen Institute, Federal Research Institute for Rural Areas, Forestry and Fisheries on the German side, and by the Institute of Agricultural Resources and Regional Planning (IARRP) of the Chinese Academy of Agricultural Sciences (CAAS), under guidance of the Division of Bilateral Partnership, Department of International Cooperation of CAAS, on the Chinese side.

Due to special characteristics of organic farming such was wide crop rotations, coupling of plant and animal production, etc., as well as the established production methods, technologies, standards, structures and mature market regarding organic farming in Europe and Germany, it was decided to hold the workshop at the TI in Trenthorst, in the German State of Schleswig-Holstein. June 2017 was identified as best season due to different crop types and development stages prior to harvest.

The Workshop was to cover all scientific aspects of organic farming, incl. crop production, own feed production on farm, closed nutrient cycles, organic dairy production, plant protection, knowledge transfer and extension, standards and certification, and organic farming associations.

In April and May 2017, a nine-member Chinese delegation was assembled, comprising participants from several CAAS institutions (Tea Research Institute TRI, Institute of Agricultural Resources and Regional Planning IARRP, Institute of Crop Science ICS, Institute of Environment and Sustainable Development in Agriculture IEDA, Division of Bilateral Partnership, Department of International Cooperation) as well as from China Organic Food Certification Center (COFCC) in Beijing and Organic Food Development Center (OFDC), Nanjing Institute of Environmental Sciences (NIES), Chinese Ministry of Environmental Protection (MEP). Each invited participant was to give a presentation. An equal number of matching German presentations was to be given, with several more Germans (and possibly) Chinese participants attending as listeners. Workshop language was English.

Original timing (planned): June 5, 2017: Arrival of Chinese delegation (flights Beijing-Frankfurt-Hamburg), and transfer to Trenthorst. June 7-8: Two days of on-farm visits. June 9:
Further presentations in Trenthorst, including joint discussions about potential future joint collaborations. June 10: free time; in the evening departure for China from Frankfurt, June 11: Arrival in Beijing.

As during the workshops previously carried out by the S&T Platform, each Chinese and German participant would be covering his/her own costs (international flights two-way, travels inside Germany, accommodation, meals) except for joint activities (bus transport, catering, joint workshop dinners, workshop materials, etc.), which were jointly to be shared by the German and Chinese sides of the S&T Platform of the Sino-German Agricultural Center (DCZ). No conference fee would be charged.

Very unfortunately, a combination of factors led to the eight members of the delegation from Beijing not being able to apply for their German visa in time in order to be able to attend the workshop. The reasons included a lengthy internal approval process by CAAS, the necessary issuing of public passports for two of the Chinese participants, a three-day public holiday (Dragon Boat Festival) in China from May 28-30, 2017, initial refusal by the Consular Service Center (CSC) of the Chinese Ministry of Foreign Affairs (MFA) to accept the application materials by the seven CAAS participants on formal grounds, and a late date (June 6) fixed by CSC of MFA for submitting the fingerprints (required for Shengen visa application) at the German Embassy in Beijing. In contrast, the participant from OFDC in Nanjing received his German visa on May 27, 2017.

On June 2, 2017, it was decided not to cancel the workshop, but to hold a “Workshop light” instead. The workshop was thus shortened by one day, i.e. arrival June 5, departure June 9, 2017. The reasons for the decision to go ahead with the Workshop were:

- Several months of preparation on behalf of DCZ and the Thünen Institute (TI) of Organic Farming in Trenthorst, including booking of visits of different farms and institutions in Schleswig-Holstein and Hamburg;
- Successful visa application, flight and hotel bookings by Dr. Tian Wei (OFDC, Nanjing);
- Hotel booking: 9 standard rooms for 5 nights each had been booked in the Viva Hotel in Lübeck by the TI. Free cancellation of booking was only possible up to 7 days prior to arrival. Due to the very short notice, high cancellation would have been incurred. By having Dr. Roelcke and Dr. Tian Wei staying at the hotel for 4 nights each (instead of the originally booked 5 nights), the TI managed to let the Viva Hotel agree to cancel the remaining bookings free of charge.
- Transportation: No extra busses needed to be rented; the two excursions were carried out with a vehicle of the TI in Trenthorst, wherefore only fuel costs had to be paid.
- All participating German scientists were from the TI in Trenthorst; an external scientist from the Julius Kühn Institute (JKI) originally scheduled for June 9 no longer attended.
- The DCZ Science advisor Dr. Roelcke had already attended an event at the Technische Universität Braunschweig May 26-28, 2017 prior to the Workshop, and had therefore arrived in Germany earlier.

The participant from Nanjing (Dr. Tian Wei) flew from Nanjing to Frankfurt and from there on to Hamburg on June 4, 2017, and took a train to Lübeck on June 5. Dr. Roelcke travelled to Lübeck from Braunschweig by train on June 5.

For detailed Workshop schedule see the Programme in Annex.
Visit of Experimental Farm of Thünen Institute of Organic Farming (June 6, 2017)

On June 6, 2017, a visit led by Dr. Herwart Böhm (plant production) and Dr. Lisa Baldinger (animal production) to the Experimental Farm took place. A few pictures are shown below.

Figs. 1 a,b: Winter peas/triticale mixture as part of crop rotation scheme for pigs (left); Field trials with different legume crops for protein content and yield, etc. (right) (photos by Tian Wei).

Figs. 2 a,b: Lupin plant from field trials with legumes (close-up) (left); Mixture of wheat and legume sprouts for protein feeding trials for laying hens (right) (photos by Tian Wei).

Figs. 3 a,b: Trenthorst Experimental Farm: a) Experiments with mobile laying hen stables; b) Sow with piglets in farrowing house (photos by Tian Wei).
Summary of Joint Workshop Session on Organic Agriculture and Research, June 6

Fig. 4: Group picture taken at Manor House of Thünen Institute of Organic Farming, Trenthorst, June 6, 2017 (photo: TI).

The presentation given by the Institute Director, Dr. Hans Marten Paulsen started with an overview on the research within the scope of the BMEL as well as of the Thünen Institute, Federal Research Institute for Rural Areas, Forestry and Fisheries, and its different locations.

Thereafter, several key figures regarding organic farming in Germany were given: The total number of farms carrying out organic farming in Germany in 2016 was 26,855, or 9.7% of all agricultural operations in Germany. Amongst these, 52% were organized in organic farming associations, the remaining 48% operated according to the “EU-Bio” guidelines. The total area under organic farming in 2016 was 1,185,471 hectares, or 7.1% of the total agricultural area in Germany. 67.1% was under organic farming associations, the remaining 32.9% under the EU-Bio guidelines. The German Federal Association of Eco-Certifiers (BVK – Bundesverband der Öko-Kontrollstellen http://www.oeko-kontrollstellen.de/index.html) comprised 15+3=18 certification bodies in 2017. By comparison, China currently has 66 certification bodies (Tian Wei, pers. comm.).

Dr. Paulsen then gave a brief overview of the Thünen Institute of Organic Farming, Trenthorst. In a nutshell, the Institute for Organic Farming develops organic farming systems and focuses on animal husbandry, mainly cattle and pigs. The system development comprises agronomy, animal husbandry, process and product qualities as well as consumer expectations and economy. It has a total staff of 85 people, who are organized in the following 8 working groups: Crop and fodder production, Resource efficiency, Biodiversity, Animal health and welfare, Livestock systems engineering, Milk production, Meat production, Product qualities.

The Trenthorst/Wulmenau Experimental Farm belonging to the institute has 600 hectares (ha), with 330 ha annual crops, 145 ha grassland. It has 100 dairy cows + followers (Holstein-Friesian, Red Holstein), 50 sows + piglets, 40 fattening places (for research), and up to 500 hens and broilers.
In plant production, two separate 6-field (6-year) crop rotations are carried out, which are designed specifically for producing feed and fodder for the dairy cows and the pigs, respectively. For a details on the land use and crop rotations in the year 2017, see the Land use map (“Nutzung”) in the Annex to this report.

Special field trials deal with enhancing the protein content in feedstuffs using different combinations of cereal crops and legumes, such as maize + phaseolus beans, common vetch + triticale, as well as lupins and winter peas (Fig. 1a,b; Fig. 2a). These are sown in combination, so special attention is given to sowing depth and density of each of the single components, in order to make them match during maturity stage, and suitable for harvesting with one single harvester.

Different research facilities in livestock production were presented, including mother-bonded rearing of calves, mobile laying hen stables (Fig. 3a), group farrowing of several sows with piglets (Fig. 3b), etc. Experiments dealing with outdoor access and grazing for all types of livestock include pasture management, selective use of antibiotics, hornless cow breeds, etc. A special feed structure experiment for chicken is carried out with germinated wheat, meals and pellets (Fig. 2b). Special attention is paid to Organic Feedstuff Quality, with a focus on protein quality, vitamins, anti-nutritive compounds, and digestibility. The experimental farm produces its own organic feedstuffs.

In on-farm networks with organic farms all over Germany on specific questions are investigated, such as grazing cow health, parasite prophylaxis, increasing resource efficiency under consideration of animal welfare quality aspects, etc.

Further in-depth research carried out at the Institute includes
- Nitrogen flows on an organic dairy farm (input-output balances)
- Long Term Crop Rotation Comparisons at Trenthorst since the 2001 conversion, development of soil P, K, Mg, pH, C_{org}, C_{mic}, N, and soil enzymes
- P-mobilization from soils and P transfer within farms (Mean P flow 2010-2012): The results the P balance is negative due to an export of about 1 ton P/100 hectares. Dr. Tian Wei commented that there is also a P deficit on organic farms in China.
- Climate effects (Greenhouse gas emissions of milk- and crop production in 73 organic and conventional farms

Dr. Marco Roelcke (DCZ) gave a presentation on behalf of Ms. Maja Clausen (BMEL) on “Germany’s Research & Innovation Agenda in the Agri-Food Sector” He then presented the German-Chinese Agricultural Center and its Science and Research Coordination activities.

Fig. 5: Joint Workshop Session on Organic Agriculture and Research (photo by Tian Wei).
The presentation by Dr. Tian Wei started with a Brief Introduction of Organic Food Development Center (OFDC) at the Nanjing Institute of Environmental Sciences (NIES), under the Chinese Ministry of Environmental Protection (MEP). The OFDC became the first organic institution in China in 1994. In 2003, it was accredited by IFOAM (as the only institution in China). In 2011, it was officially accredited by the EU organic authority (as the only one in China). From 1997 to 2003, Sino-German joint technical cooperation project-“Development of Biological Agriculture in Poverty Stricken Areas of the P.R. of China” was conducted at the OFDC with GTZ (PN: 01.2488.3-001.00). The German organic farming concept was introduced to the Chinese partner organization, and the project then successfully introduced the concept of organic farming in pilot villages of Yuexi County, Anhui province. Also, professional staff was trained in this regard. Currently, OFDC is the second largest organic certifying organization in China (Tian Wei, pers. comm). Dr. Tian Wei is a member of OFRC, the organic farming extension organization at OFDC.

There has been a very strong growth of the organic sector in China since the early 1990s, with domestic sales rising from almost zero in 1990 to 35.78 billion CNY (approx. 5.65 billion USD) in 2015 and total exports increasing from 0.03 million USD in 1995 to 899 million USD in 2015 (CNCA and CAU, 2016). In 2014, China was the 4th largest country based on area of certified organic agricultural land; in 2015, the 5th largest based on organic production (ibid.).

Finally, Dr. Tian Wei presented results from an own field experiment on “Consecutive and heavy application of manure-based compost”. The four-year field experiment (2012-2016) was carried out in a rice-wheat double-cropping system in S Jiangsu Province. Result showed that heavy application of compost did improve soil fertility but also caused environmental risks, resulting in phosphorus and heavy metal accumulation, and a decrease in bacterial diversity. Further studies on the influence of compost application rate on soil bacterial diversity, phosphorus and heavy metal accumulation are therefore necessary.

The following discussion focused on organic fertilizers in organic farming in China (Fig. 5). Dr. Tian Wei mentioned these were mostly manure-based compost (from cows, pigs, chicken), however, that the manure was frequently derived from conventional farming. There is little systematic growing of leguminous plants for biological N fixation in crop rotations in China, even on organic farms. Dr. Tian Wei pointed out that compared to Germany, there is still a great lack of technical knowledge amongst many organic producers in China. Organic standards in China, issues of certification and labelling, the volume of the Chinese organic market as well as exports of organic products were also discussed. Regarding future development and expansion of the organic sector in China, besides distinctly higher prices of organic vs. conventional products, there is frequently lack of trust among many consumers towards organic products.

Summary of excursions on June 7 and 8, 2017

On the organic farm in visited in the morning of June 7, Gut Wulksfelde, all major sectors of production (pigs, hens, greenhouse vegetables), as well as processing (own bakery, etc.) were visited with a guide from the farm (Fig. 6 a,b). There was an opportunity to visit and have lunch the farm store, which offers a very large selection of organic products from own production, regional products, as well as organic products from other producers and attracts many customers from nearby Hamburg (approx. 20 km). Regarding an overview of the plant and animal production as well as all other activities at Gut Wulksfelde, refer to the website (www.gut-wulksfelde.de) as well as the detailed Farm profile (Betriebsspiegel) in the Annex.
In the afternoon of June 7, the nearby Biogas- and Composting Plant Bützberg, belonging to the Municipal waste public company of Hamburg (Stadtreinigung Hamburg, SRH) was visited (Fig. 7 a,b). The SRH is responsible for the disposal of waste from private households. A very informative PPT presentation was given in English, prior to a visit to all sectors of the plant. The plant started its operation in 2012, in line with the new law (Kreislaufwirtschaftsgesetz) with a 5-step waste hierarchy, etc. The basic principle is that of dry fermentation in the batch system, followed by a composting plant (windrow composting). This combined plant produces electricity, heat and compost out of municipal bio-wastes (from kitchen and gardening). The plant has an input amount of bio-and green waste of 70,000 t yr⁻¹ and a max. output of approx. 3,500 t yr⁻¹. The biogas is conditioned to methane and fed to the main gas distribution system of the Schleswig-Holstein Netz AG (marketing by Vattenfall).

The final compost fulfils the legal requirements (German Biowaste Ordinance, German Fertilizer Ordinance, EU Organic Farming Ordinance), as well as the regulations of German quality certification (RAL), the EU Environmental Label and also qualifies as commodity for organic farming (certified by FIBL) (see Annex). Detailed lists of nutrient and pollutant (HM) contents were provided, including an example calculation on the compost application rates based on its nutritive value and value for soil organic matter build-up, etc.

The German and Chinese visitors were very impressed by the good structure and odor of the resulting product. In particular, this visit was of very high value for Dr. Tian Wei, whose research field specializes in use of compost in organic farming (see title of his presentation on June 6, 2018).

On June 8, 2017, an excursion by Dr. Paulsen and two other scientists of Thünen Institute, together with Dr. Tian Wei and Dr. Roelcke took place to the Westhof: Bio-Gemüse GmbH & Co. KG, a large company specializing in fresh and frozen vegetables from open-field and greenhouses (Fig. 8 a,b) http://www.westhof-bio.de/. It is located in Friedrichsgabekoog in the western part of the German State of Schleswig-Holstein, close to the North Sea. The company has started producing organic vegetables in 1972, and is a member of the German Bioland organic farming association. The main crops are open-field carrots, brassicas and peas, tomatoes in greenhouses, as well as strawberries in small quantities. The company cultivates an area of approx. 1,000 ha, with a six-year crop rotation, consisting of 1st year: clover/flowering fields, 2nd year: clover/flowering fields, 3rd year: brassicas, 4th year: grain, 5th year: carrots, 6th year: peas. One of the purchasers of the organic vegetables is the large German retailer and supermarket chain REWE.

Besides vegetable production, Westhof is also involved in renewable energy projects. The associated company Westhof Energie GmbH & Co. KG was founded in 2010, dealing with production and marketing of renewable energy (wind power). A biogas plant was constructed in 2014 next to the greenhouse to deliver heat to the greenhouse.

During the excursion, the biogas plant, greenhouses, vegetable washing and packing plants, as well as the machinery hall for soil tillage and vegetable harvesting were visited. A detailed oral introduction to the whole history of the agricultural company as well as the natural conditions and agriculture in the area was given to the visiting delegation.

The visit was followed by a short trip to the nearby Eidersperrwerk (Eider Barrage), located at the mouth of the river Eider on Germany’s North Sea coast. It is large coastal protection structure opened in 1973 to protect the coast from storm surges by the North Sea. This was followed by lunch in the historical harbour town of Tönning. In the afternoon, the group returned to Lübeck, where the Workshop on Organic Farming officially terminated.
**Fig. 6 a,b:** Laying hens in open stable connected to meadow at Gut Wulksfelde (left); crates with organic products prepared for packing and delivery at Gut Wulksfelde (right) (photos by Tian Wei).

**Fig. 7 a,b:** Biogas- and Composting Plant Bützberg of the municipal waste public company of the City of Hamburg (Stadtreinigung Hamburg) (left) (photo: Tian Wei); looking at the finished compost product (right) (photo: TI).

**Fig. 8 a,b:** Organic raw materials for biogas plant at the company Westhof Bio-Gemüse (left) and detail of machinery used for soil preparation for carrot cultivation (right) (photos: TI).
Connection to other DCZ activities on organic farming and organic food

The Sino-German Workshop on “Organic Farming and Green Development” was one of several activities by the German-Chinese Agricultural Center in the field of organic farming, production and trade during its 1st phase (April 2015 – March 2018). In contrast to most the other events, this Workshop focused on scientific aspects of organic farming.

In Sept. 2015 and Sept. 2016, two German organic farming consultants, partly organized by DCZ, visited Liaoyuan County in Jilin Province, respectively, for preliminary investigations regarding the setting-up of a “Dongliao Modern Ecological Agriculture Demonstration Zone”, with the main aim of protecting water resources (upper reaches of the East Liao River) and improving farmers’ economic status. A “Sino-German Modern Ecological Agriculture” conference was organized in September 2016, supported by DCZ.

On January 15, 2016, at the invitation of DCZ, Ms. Dr. Shi Yan, founder of China’s first Community-Supported Agricultural (CSA) organic farm near Beijing, took part in an expert panel on “Modern agriculture as way forward to harmonizing urban and rural areas in China”, as one event during the 2016 Global Forum for Food and Agriculture (GFFA) in Berlin.

On April 18, 2016, the member of the Management Board of GIZ, Ms. Cornelia Richter, visited the (OFDC) (NIES-MEP) together with the Director of the GIZ Beijing Office, Mr. Oliver Auge, and Dr. Marco Roelcke. This visit related to the former GTZ project “Development of Biological Agriculture in Poverty Stricken Areas of the P.R. of China”, carried out together with OFDC 1997-2003, and took place on the sidelines of the “5th Sino-German Environmental Forum” held April 19-20, 2016 in Nanjing, (co-organized by GIZ).

On January 20, 2017, DCZ co-organized (together with the German Agricultural Society DLG and the German Asia-Pacific Business Association OAV) a panel on “Focus China: (Bio)-Certification of Agriproducts and Food”, as one event during the 2017 GFFA in Berlin. The high-level Chinese delegates, organized and supported by DCZ, also visited the International Green Week Fair (IGW), were received by the German Business Association of Ecological Food Production – Bund Ökologische Lebensmittelwirtschaft e.V. (BÖLW), and visited an organic supermarket in Berlin as well as the “Ecovillage Brodowin”, NE of Berlin.

From June 18 to 24, 2017, a study tour exploring organic farming and sustainable agriculture in Europe was commissioned to IAK Agrar Consulting, Leipzig, organized by the DCZ. A Chinese delegation from FECC, officials from Liaoyuan, Jilin Province, and farmer trainees of Wenzhou College, Zhejiang Province, visited agricultural organizations, companies and farms in the field of organic farming in Germany and The Netherlands.

From October 22 to 23, 2017, Dr. Roelcke and Ms. Wei Rong of DCZ were invited to attend the “Forum on Ecological Civilization Construction” in Yuexi County, Anhui Province. This event coincided with the 20th Anniversary of the Sino-German GTZ project mentioned above, where Dr. Roelcke had worked as a consultant accompanying the conversion process and monitoring soil fertility between 1998 and 2000. The Forum and Anniversary were also attended by several representatives from OFDC and OFRC (NIES-MEP). Two articles by “China Environment News” reported about these two events:

The DCZ national long-term expert Ms. Wei Rong, supported by DCZ, has taken part in the 5th European Organic Leadership Course (OLC) from May 2017 to February 2018, organized
by the International Federation of Organic Agriculture Movements (IFOAM). This intensive course empowered participants as organic leaders to assume greater responsibilities in finding organic solutions to address the world’s environmental, social and market challenges. The first residential session took place in June 2017 in Croatia; the second February 8-14, 2018 in Nuremberg, Germany. Participants finally received a certificate from IFOAM. Outputs were a “Country Report on Organic Market Supply in China”, covering the institutional framework and market supply, and a “Development Plan”, on how to enhance the Sino-German Organic Agriculture Cooperation. Ms. Wei Rong was also invited to deliver a speech on the forum “China Day” at the BIOFACH 2018 organic trade fair in Nuremberg.

Conclusions and Outlook

The timing of the Workshop in early June was perfect for seeing many different things on the fields and field trials. This was likewise to the Sino-German Workshop on “Innovative Tools in Plant Breeding Research” organized by DCZ with JKI in Germany in 2016. As was also confirmed during the Workshop, it can be pointed that regarding scientific and technical knowledge on organic farming practices, there is still a large gap between Germany (or Europe) and China. During the visit of the experimental farm in Trenthorst, Dr. Tian Wei also mentioned that organic farming in China mainly lacked technical expertise. Following the visit to the composting plant, he also expressed satisfaction due the benefit he was drawing from the visits to these high-grade installations and farms.

Working at OFRC, the organic farming extension organization at OFDC founded and directed by Dr. Xi Yunguan, Dr. Tian Wei is in charge of consulting and knowledge extension in several provinces in southern China. By this he possesses great insight into the Chinese reality on the ground. While in Germany organic farmers may easily receive extension advice either from organic farming associations (if they are their members) or via state and private agricultural extension systems, organic farmers in China are rarely willing to pay for qualified organic extension services (Tian Wei, 2017, pers. comm.; Wei Rong, 2017, pers. comm.). This has prevented a strong organic extension service sector from taking off in China. The reason may partly be due to the high certification fees incurred by Chinese organic farmers during the process of certification, since in China, generally single products, and not farm plots, as is common in Germany, are certified. As a consequence, some smallholder organic farmers in China tend to produce adhering to organic guidelines, but without an official organic certification of their farm and their produce (Wei Rong, 2018, pers. comm.).

Regarding deepening of cooperation between Thünen Institute and CAAS, a Memorandum of Understanding (MoU) between Thünen Institute and CAAS was signed in Braunschweig, Germany on July 11, 2017 by the Vice President of CAAS, Prof. Dr. Wang Hanzhong and the Research Director of Thuenen Institute, Mr. Stefan Lange. It had been prepared under participation of the DCZ’s Science & Technology Platform. During the visit of the Chinese delegation, besides other topics, both sides explicitly mentioned a more intensive cooperation in the field of organic farming in future. This would also include a participation by China in the sector „Organic“ of the Thuenen Institute’s worldwide “agri benchmark” network.


Following the unsuccessful participation by the CAAS scientists in the “Sino-German Workshop on Organic Farming and Green Development”, officials from the Department of International Cooperation at CAAS mentioned on several occasions in late 2017 that they would greatly welcome a second opportunity for their researchers to take part in a similar
event in Germany in the near future, either as workshop or in form of a study tour. This topic should therefore remain on the agenda, also for the Second phase of the German-Chinese Agricultural Center (DCZ), starting April 1st, 2018.

References:

Annexes:
Workshop programme
Land use map Trenthorst/Wulmenau Experimental Farm
Farm profile Gut Wulksfelde
Compost quality certificate 2017 Composting Plant Bützberg.
Sino-German Workshop on Organic Farming and Green Development

05-09 June 2017

Trenthorst, Germany

(Programme)

Organized by

Thünen Institute (TI) of Organic Farming
Institute of Agricultural Resources and Regional Planning of Chinese Academy of Agricultural Sciences (CAAS)
German-Chinese Agricultural Center (DCZ)

With support from

German-Sino Agricultural Science & Technology Cooperation Platform
Organic Farming and Green Development

04.06.2017

13:10  Departure of Chinese participant Dr. Tian Wei in Nanjing LH 781 / Arrival in Frankfurt on 04.06.2017 at 19:00
20:30  Departure from Frankfurt to Hamburg LH 036 / Arrival in Hamburg at 21:35.
22:00  Dr. Tian Wei stay overnight at Leonardo Inn Airport, Zeppelinstr. 12, 22335 Hamburg, Tel. 040-5002220.

05.06.2017

Morning  Arrival of Dr Tian Wei in Lübeck from Hamburg via train. Check-In at Viva Hotel, Bei der Lohmühle 25, 23554 Lübeck.
17:00  Arrival of Dr. Marco Roelcke in Lübeck by train from Braunschweig via Hamburg. Check-In at Viva Hotel, Lübeck.
18:30  Meeting of Dr. Marco Roelcke and Dr. Tian Wei with Dr. Hans Marten Paulsen; sightseeing in Lübeck.
19:00  Dinner (Schiffergesellschaft, Breite Str. 2, 23552 Lübeck)
08:15 Hotel pick-up service to the Thünen Institute of Organic Farming, Trenthorst 32, 23847 Westerau. Tel: +49 4539-8880-0

09:00-09:15 Welcome at the Manor House, Thünen Institute of Organic Farming
- Dir. & Prof. Dr. Hans Marten Paulsen

09:15-12:00 Visit of the Research Farm of the Thünen Institute of Organic Farming
- Dr. Herwart Böhm; Dr. Lisa Baldinger

12:00-13:30 Lunch break in the manor house

13:30-17:00 Joint Workshop Session: Organic Agriculture and Research
- 13:30-14:00 Hans Marten Paulsen (TI) “Research activities and facilities of the Thünen Institute of Organic Farming”
- 14:00-14:15 Marco Roelcke (DCZ) on behalf of Maja Clausen (BMEL, Division International Research and Innovation): “Germany's Research & Innovation Agenda in the Agri-Food Sector”
- 14:15-14:30 Marco Roelcke (DCZ) Presentation of German-Chinese Agricultural Center and of Science and Research Coordination activities
- 14:30-15:00 Tian Wei (Associate research Fellow; OFDC, NIES-MEP, Nanjing): “Consecutive and heavy application of manure-based compost in organic system improved soil fertility but also caused environmental problems”

15:00-15:30 Group photo, Coffee/Tea Break

15:30-17:30 Round group discussion on the general situation of organic farming and organic products market in China as well as on the research carried out by the scientists of the Thünen Institute of Organic Farming.
Participants: Dr. Hans Marten Paulsen (Director; Working group Resource efficiency), Dr. Herwart Böhm (Senior scientist; Working group Crop and fodder production), Dr. Heiko Georg (Head of Working Group Livestock systems engineering; dairy goats), Dr. Kerstin Barth (Working group Milk production; Organic dairy farms), Dr. med. vet. Regine Koopman (Senior Scientist, Animal health; parasites in grazing animals, ruminants), Dr. Karen Aulrich (Working group Product qualities), Dr. Friedrich Weißmann (Working group Meat production, pork), Dr. Lisa Baldinger (Working group Meat production; chicken feeding), Dr. Solveig March (Working group: Animal welfare); Dr. Tian Wei (OFDC), Dr. Marco Roelcke (DCZ).

18:30-20:00
- Dinner at Café Affenbrot, Kanalstraße 70, 23552 Lübeck;
07.06.2017

09:00   Hotel pick-up service

09.00-18:00   Excursion (with lunch)

10:00-12:30   Organic farm in Wulksfelde (Gut Wulksfelde GmbH, Wulksfelder Damm 15-17, 22889 Tangstedt/Hamburg, www.gut-wulksfelde.de): Visit production, direct costumer contact and marketing on an organic farm

12:30-13:30   Lunch and coffee at Gut Wulksfelde

13:30-17:00   Compost production site at Biogas- and Kompostwerk Bützberg: Presentation by Dr. Anke Boisch, Leader Operation and Technics, Stadtreinigung Hamburg: Closing the nutrient cycle: Municipal compost production.

18:00   Dinner: L’Osteria, An der Untertrave 111, 23552 Lübeck

08.06.2017

07:30   Hotel pick-up service

10:00-16:30   Excursion (with lunch)

10:00-12:00   Visit of Westhof: Bio-Gemüse GmbH & Co. KG (Zum Westhof 6, 25764 Friedrichsgabekoog)

12:00-13:00   Trip to Eidersperrwerk
13:00-14:00   Lunch break at Gasthaus Hafenblick in 25832 Tönning

14:00-16:30   Return to Lübeck.

Evening   Free time. Dinner self-organized.
09.06.2017

Check-out and departure from Lübeck
Transfer by train to Hamburg (Dr. Tian Wei)
Return by train to Braunschweig (Dr. Roelcke)

10.06.2017

Dr. Tian Wei:
Ca. 14:00  Flight LH 021  Departure Hamburg / Arrival in Frankfurt at 15:10 h.
17:35  Departure from Frankfurt Airport to Nanjing LH 780 / Arrival in Nanjing on 11.06.2017 at 11:25 AM

Hotel:
05.06.-09.06.2017:
Viva Hotel by Vier Jahreszeiten
Bei der Lohmühle 25
23554 Lübeck
Tel. (+49)-(0)451-480530
http://www.4jahreszeiten-luebeck.de/

Workshop Contact persons:
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### Bodenpunkte

<table>
<thead>
<tr>
<th>Betriebsfläche</th>
<th>20 - 45</th>
<th>Durchschnitt</th>
<th>35</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landwirtschaftliche Fläche</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grünland</td>
<td>155 ha</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ackerland</td>
<td>283 ha</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gärtnerei (verpachtet)</td>
<td>7 ha</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hof- und Gartenfläche</td>
<td>6 ha</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Naturräume und Landschaftselemente</td>
<td>21 ha</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22 Amphibientiche, 18 km Knicks, etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vertragsnaturschutz (Flachlandmähwiesen)</td>
<td>38 ha</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insgesamt naturnahe Flächen (12,5 %)</td>
<td>59 ha</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Arbeitskräftebesatz

2,0 AK/100 ha

1 Betriebsleiter, 2 Abteilungsleiter, 4 landw. Gehilfen, 2 Auszubildende, Saisonarbeitskräfte

### Schlepperbesatz

135 PS/100 ha

### Ackerfrüchte

<table>
<thead>
<tr>
<th>Getreide</th>
<th>120 ha</th>
<th>Leguminosen</th>
<th>14 ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dinkel</td>
<td>14 ha</td>
<td>Ackerbohne/Erbsen</td>
<td>14 ha</td>
</tr>
<tr>
<td>Winterroggen</td>
<td>41 ha</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sommerweizen</td>
<td>31 ha</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S. Triticale</td>
<td>8 ha</td>
<td>Hackfrucht</td>
<td></td>
</tr>
<tr>
<td>Hafer/Gerste</td>
<td>12 ha</td>
<td>Kartoffeln</td>
<td>37 ha</td>
</tr>
<tr>
<td>Sommerroggen</td>
<td>14 ha</td>
<td>Erdbeeren</td>
<td>10 ha</td>
</tr>
</tbody>
</table>

Kleebrasse, Grünbrache 98 ha

Streuobstwiese 1,5 ha

### Viehbestand

250 Rinder (75 Mutterkühe plus Nachzucht der Rassen Limousin und Deutsch Angus)

220 Mastschweine

2.350 Legehennen

6 rauwollige pommersche Landschafe

### 5 jährige Fruchtfolge

1. Kleebrasse oder Grünbrache
2. Kartoffeln oder Hafer
3. Winterroggen und Zwischenfrucht
4. Sommerweizen oder Triticale
5. Kleebrasse

Gut Wulksfelde GmbH · Wulksfelder Damm 15-17 · 22889 Tangstedt
Tel.: 040/644251-0 · www.gut-wulksfelde.de
**RAL-Gütesicherung Kompost**
Jahreszeugnis 2017
Seite 1 von 2
Anlage Bützberg
(BGK-Nr.: 1041)
Wulfsfelder Damm 2
22889 Tangstedt

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**Jahreszeugnis 2017**

**Fertigkompost (feinkörnig)**

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**Rechtsbestimmungen:**
- Bioabfallverordnung
- Düngemittelverordnung
- EU-Ökoverordnung (VO(EG) Nr. 889/2008, Anhang 1)

**Regelwerke:**
- RAL-Gütesicherung (RAL-GZ 251)
  Überwachungsverfahren
- EU-Umweltzeichen
  (Bodenverbesserer: 2006/799/EG)
- Betriebsmittel für den Ökolandbau
  (FIBL-Nr.: 125523)

Die Einhaltung der jeweiligen Norm wird mit einem Häkchen ausgewiesen.

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**Warenkunde der RAL-Gütesicherung**

<table>
<thead>
<tr>
<th>Kennzeichnung gemäß Düngemittelverordnung</th>
<th>Eigenschaften und Inhaltsstoffe in der Frischmasse</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>kg/l</td>
</tr>
<tr>
<td>Stickstoff gesamt (N)</td>
<td>8.55</td>
</tr>
<tr>
<td>Stickstoff organisch (N)</td>
<td>8.35</td>
</tr>
<tr>
<td>Stickstoff löslich (N)</td>
<td>0.20</td>
</tr>
<tr>
<td>Stickstoff anrechenbar (N)²</td>
<td>0.61</td>
</tr>
<tr>
<td>Phosphat gesamt (P₂O₅)</td>
<td>3.58</td>
</tr>
<tr>
<td>Kaliumoxid gesamt (K₂O)</td>
<td>8.12</td>
</tr>
<tr>
<td>Magnesiumoxid ges.(MgO)</td>
<td>2.81</td>
</tr>
<tr>
<td>Basisch wirks. Stoffe (CaO)</td>
<td>17.9</td>
</tr>
<tr>
<td>pH-Wert</td>
<td>8.2</td>
</tr>
<tr>
<td>Salzgehalt</td>
<td>3.08 g/l</td>
</tr>
<tr>
<td>C/N-Verhältnis</td>
<td>15</td>
</tr>
<tr>
<td>Organische Substanz</td>
<td>218 kg/t</td>
</tr>
<tr>
<td>Humus-C</td>
<td>65 kg/t</td>
</tr>
</tbody>
</table>

Hygienisierend und biologisch stabilisierend behandelt gem. §2 BioAbfV
Frei von keimfähigen Samen und austriebfähigen Pflanzenteilen

<table>
<thead>
<tr>
<th>Zweckbestimmung</th>
<th>Zur Bodenverbesserung und Düngung Geeignet als Mischkomponente für Erden und Substrate</th>
</tr>
</thead>
</table>

**Anwendungsbereiche**
- Landwirtschaft
- Landschaftsbau
- Erdenwerke

**Anwendungsempfehlungen**
- Landwirtschaft: siehe Anlage LW
- Landschaftsbau: siehe Anlage LB

Das Erzeugnis unterliegt der RAL-Gütesicherung (RAL-GZ 251).
Dieses Zeugnis wurde elektronisch erstellt. Es gilt ohne Unterschrift.

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1) bei der Abgabe des Erzeugnisses verbindliche Warenkunde der RAL-Gütesicherung. 2) Im Anwendungssah ar angenommener anrechenbarer Stickstoff bei erstermaliger Anwendung (N-löslich zgl. 5% von N-organisch). 3) Gemäß aktuellen Marktwert, errechnet über akkreditierte Kosten von mineralischer Düngung nach Landhandelspreisen (Oktober-Dezember 2016) ohne MWSt. (0,61 €/kg N-anrechenbar, 0,52 €/kg P₂O₅, 0,56 €/kg K₂O, 0,1 €/kg CaO). 4) Der Wert von Humus-C beträgt 0,17 €/kg Humus-C (Kalkuliert auf Basis eines Strohpreises von 72,50 Euro/t).