

## Development of New-type Farmers by Introducing “Dual Apprenticeship System” in Sino-German Agricultural Cooperation

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**Abstract:** Over the past year, the German-Sino Agricultural Center (DCZ) has carried out a pilot project in Wenzhou Vocational College of Science and Technology, which explored the feasibility of cultivating new-type farmers in China with the German "dual apprenticeship system of vocational education and training (dual system)". Reflecting upon the project, this paper first reviews key features of the German “dual system”, and then analyzes possible bottlenecks in its introduction to China, which include insufficient enterprise involvement, shortage of qualified teachers and corporate trainers as well as a lack of institutional and regulatory systems. Finally, the paper argues that China’s vocational schools shall aim for a simplified version of the “dual system”, if they were to introduce and adopt the system. And in such a case, discussion on education programs shall start with standard guidelines, and actively seeks support from the government.

**Key words:** Sino-German agricultural cooperation; dual system; agricultural vocational education; new-type farmers

In the early 1990s, Chinese and German governments began cooperation in the agricultural sector. The form of cooperation started with Germany providing aid to China, and gradually changed into bilateral cooperation as a result of economic development. The strategic partnership between the two countries has become increasingly prominent. On October 10, 2014, Premier Li Keqiang of the People’s Republic of China co-chaired the third round of China-Germany governmental consultations in Berlin with Angela Merkel, Chancellor of the Federal Republic of Germany, and issued the "Action Framework for Sino-German Cooperation: Shaping Innovation Together”, a continuation of consensus between President Xi Jinping and Chancellor Merkel during his state visit to Germany in March of the same year. According to the framework and the guidelines of the Framework Agreement on German-Sino Agricultural Center, both governments will further deepen mutually beneficial cooperation in the fields of agriculture and food. The DCZ will serve as a platform for long-term and effective cooperation in modern agriculture, machinery and agricultural research. It shall facilitate agricultural policy dialogues, support cooperation and trade between our enterprises in agriculture and food business while promoting relevant vocational training. ”

Promoting agricultural vocational education and training is one of the DCZ’s key tasks. The “Dual System” which has cultivated large groups of talents for Germany’s modern agricultural development has now been selected as a starting point for cooperation. In fact, China attempted at introducing the

“Dual System” in the early 1980s, but cooperation in agricultural vocational education between the two countries back then was rather limited. The peasant economy has long been in dominance of the Chinese agriculture, resulting in “farmer” being an identity rather than a profession. With advances in China’s modern agriculture, however, traditional farmer households become incapable of coping with the new situation. Modern agriculture calls for a new generation of farmers who possess advanced knowledge, practical skills and comprehensive competence. In the past 5 years, China’s “No. 1 Central Document” has set guidelines for providing vocational training for farmers. In January 2017, the Ministry of Agriculture issued a special “13<sup>th</sup> Five-year Plan for Cultivating New-type Skilled Farmers” to actively engage agricultural vocational schools in cultivating a new type of skilled farmers. At the same time, the Chinese government published a series of important documents including the “Decision of the State Council on Accelerating the Development of Modern Vocational Education” and “Development Plan for Modern Vocational Education System (2014-2020)”. In 2015, the Ministry of Education deployed a task of selecting 165 entities for a modern apprenticeship pilot project. As an initiator of the National Steering Committee for Agricultural Vocational Training and Education (hereinafter referred to as the Steering Committee), the Ministry of Agriculture looked to implement a pilot project in Wenzhou Vocational College of Science and Technology (WVCST) with the German “Dual System” for cultivating new-type farmers in China.

As China's national conditions and agricultural development differ greatly from those in Germany, the problem remains as how we could incorporate the “Dual System” into a suitable solution that fits local conditions in Chinese vocational schools. Over the past year, the DCZ has organized expert visits to the WVCST and Germany to get a clear picture of the status quo. Preliminary discussions were held on the basis of intent of cooperation, resulting in an initial implementation plan on the introduction of the “Dual System” in Wenzhou. This paper will review key features of the German “Dual System”, potential setbacks in its introduction to China and feasible solutions from the perspective of vocational schools, so as to share the experience with other interested counterparts in China.

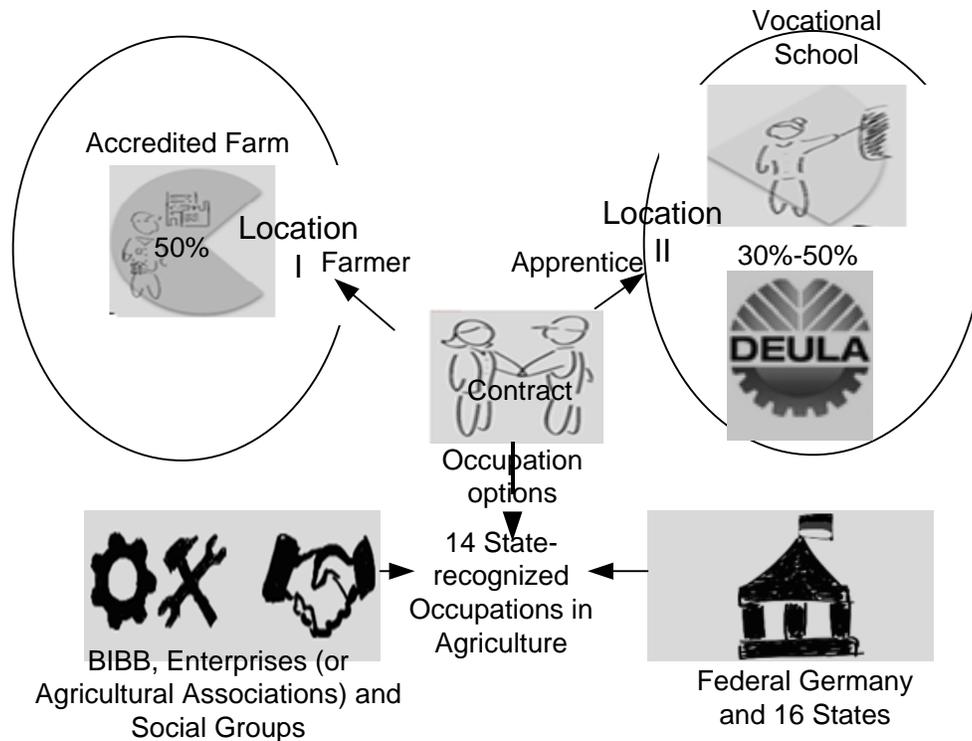
## **1. Key features of the German “Dual System”**

In Germany, the "dual apprenticeship system " originated from handicraft training about 150 years ago. It is called a “Dual System” because training takes place in both enterprises and public training schools. Company training is the main part of the program, and will be supplemented by theoretical education in schools. Trainees are called as “Apprentice” (Azubis or Auszubildende), rather than “students” (Studenten) who focus on theoretical studies in full-time higher educational institutions.

### **1.1 Market-oriented “Dual System”**

As of 2016, there are 14 types of state-recognized agricultural occupations in the “Dual System” of Germany. If a young adult decides to join an agricultural vocational training program, he/she shall first of all choose from the 14 types of agricultural occupations, and then contact a state-recognized farm in order to sign a formal training contract (Ausbildungsvertrag). The last step is to select a suitable vocational school (Berufsschule). The entire program takes about 2 to 3.5 years to finish, half of which would be spent on the farm, around 30% on theoretical study in schools, and the remaining 20% for practical inter-company training in schools or “Inter-Company Training Units” (Ueberbetriebliche Ausbildung). At the end of the program, apprentices are required to sit for theoretical and practical exams with representatives of the farm and training school as jury members.

Only apprentices who pass the exams are granted a diploma and a vocational qualification certificate (Figure 1).



**Figure 1 Germany's "Dual System"**

The core element of a "Dual System" program is the market, in this case the farm, which guides the whole process. Firstly, let us take a look at how the agricultural occupations are determined. Recognized agricultural occupations under the "Dual System" are firstly proposed by the Federal Institute for Vocational Education and Training (BIBB), enterprises (or the agricultural trade association) and stakeholders from social groups, then reported to relevant governmental departments for approval, and finally confirmed by the Federal Ministry of Education and Research and the Federal Ministry of Food and Agriculture through legislation with the Ordinance on Vocational Education and Training (Ausbildungsordnung). Participation of social groups and enterprises (or agricultural trade association) ensures that final agricultural occupations reflect actual market demand (Figure 1). From the perspective of training, on-farm training is to help apprentices gradually acquire the competence and skill sets necessary to deal with problems. Afterwards, they are expected to work independently and supervise others in carrying out tasks. Theoretical studies in schools aim to support apprentices with a better understanding of working principles and practical skills. Practical inter-company training at school or professional training institutes such as the DEULA is to provide training for critical practical skills which certain enterprises may not be able to provide. It is an effective supplement to training in enterprises. In addition, from the perspective of participants, apprentices choose vocational education to acquire necessary qualification or as a stepping stone to a job in the agricultural sector, while farm owners accept apprentices in order to cultivate future employees. Both sides are certainly free to choose the next step: apprentices can continue to work or study, and farm owners can decide whether or not to offer employment to the

apprentice on the basis of performance. As to the source of funding, enterprises take the initiative to assume a certain portion of the costs for vocational education: Farm owners shall provide apprentices with wage, insurance, accommodation and meals, and also pay for trainers. Large machinery for practical inter-company training is often donated by agricultural machinery enterprises to schools or training institutes such as DEULA. The government shall cover management expenditures of vocational schools. Thus, the government uses minimal resources to mobilize enterprises to participate in the process for maximization of economic and social benefits.

## 1.2 Strong legal security and regulatory system

The success of vocational education in Germany is attributed to its full-fledged legal system (Table 1). At the federal level, there are a total of 11 laws and regulations related to agricultural vocational education. Among them, the supreme law — the Basic Law (Grundgesetz) clearly states: The entire school system shall be under the supervision of the state (Article 7). The Vocational Education Act (Berufsbildungsgesetz) offers detailed provisions on vocational education objectives, locations, stakeholders, examinations and regulatory bodies and is applicable to all occupations under the "Dual System". Furthermore, it also clearly defines regulations over agricultural occupations, master farmer examinations, training qualifications, job protection and vacation. At the state level, each state can introduce additional laws and regulations. In Bavaria, for example, a total of 9 local regulations on agricultural vocational training and education have been implemented. Firstly, the local constitution (Verfassung) includes vocational education and general education in primary and secondary schools in the compulsory education category (Article 129). Taking into consideration of local conditions, Bavaria introduced the "Bavarian Education Act", "Responsibility Regulation", the "Training Program Framework (Rahmlehrplan)", the "Vocational Education Examination Regulation (Pruefungsordnung der Berufsbildung)" and the "Regulation on Educational Costs (Bildungskostenregelung)", so as to clearly define responsibilities, rights and obligations of every actor in the process. A full-fledged legal system is in place as support. There are also provisions for related matters involving employment, social security and management system of the quality of vocational education. Thus, a legal framework system takes its form from the central to the local level, both to ensure unity as well as a certain degree of flexibility in vocational education and training, so that it is more suited to local market demand.

**Table 1 Laws and regulations on vocational education and training**

Laws and regulations at the German federal level	<ol style="list-style-type: none"> <li>1. The Basic Law (protection of people with disabilities, parents' right to education, freedom of occupation, freedom of association, social welfare principles, etc.)</li> <li>2. The Vocational Education Act (BIBB, 2005)</li> <li>3. Vocational Education Regulation (e.g. Regulation on Farmer's Vocational Education, 1995)</li> <li>4. Requirements for Master Farmer examinations</li> <li>5. Regulations on Trainer Qualifications</li> <li>6. Regulations on Qualifications of Training Organisations</li> <li>7. Requirements and Regulations on Professional Qualifications</li> <li>8. Employment Protection Act</li> <li>9. Young Protection Act</li> <li>10. Federal Paid Leave Act</li> <li>11. Working Hours Act</li> </ol>
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Regulations and guidelines at the state level (example of State of Bavaria)	<ol style="list-style-type: none"> <li>1. Constitution of Bavaria</li> <li>2. Bavarian Education Act - Compulsory, Free schooling and Education Regulations</li> <li>3. Responsibility Regulations</li> <li>4. Vocational Education Examination Regulations</li> <li>5. Guiding Principles for Promotion of Education</li> <li>6. Rules on Educational Costs</li> <li>7. Management Regulations on Every Occupation</li> <li>8. Framework on Inter-company Training Program</li> <li>9. Framework on Vocational School Training Program</li> </ol>
Other regulations	<ol style="list-style-type: none"> <li>1. Collective Bargaining Agreement</li> <li>2. Provisions on Social Security Costs</li> <li>3. Provisions on Social Security Undertaker</li> <li>4. Quality Management System for Vocational Education and Training</li> </ol>

A key feature in the German vocational education and training system is the regulatory body - Responsible Institutions (Zuständige Stellen). In general, school education shall be supervised by local educational authorities, while training on farm shall be monitored by local agricultural authorities or trade association. The situation in different states varies, but the ultimate goal is to ensure that schools and farms carry out vocational education in accordance with relevant requirements. Take on-farm training in Bavaria as an example. Any farm that wishes to take in apprentices shall register itself at local agricultural authorities. Once it is confirmed as a nationally recognized farm with qualified "master farmers", it will be eligible to enter into vocational training contracts with apprentices. During apprenticeship, local agricultural authorities may visit the farm for checks on training from time to time and reconcile differences of opinion between apprentices and the farm, if any. At the same time, the farm shall also submit regular progress reports of the training to local regulatory authorities. Supervision helps substantially reduce the number of events in which the apprentice is mistreated as cheap labor by the farm, and ensure effective operation of the "Dual System" in general.

### 1.3 The universal "European Qualifications Framework (EQF)"

In Germany, young people choose different educational paths, and the achievable level of qualification upon completion of the study can be measured by the "European Qualifications Framework (EQF)". The EQF covers 3 key elements: knowledge, skills and competence. Knowledge is described as the "necessary theoretical and factual knowledge". skills are described as "capability of carrying out tasks". Competence is described in terms of completing the work with responsibility and autonomy. By measuring these 3 elements, it is possible to rate the qualification of graduates of the entire German education system. Generally speaking, apprentices with three years of vocational education can reach EQF level 4, "master farmer" is at EQF level 6, and anyone with a PhD title is at EQF level 8.

**Table 2 The "European Qualifications Framework (EQF)**

EQF	Knowledge	Skills	Competence
<b>Content</b>	Theoretical and/or factual knowledge	Cognitive (involving the use of logical, intuitive and creative thinking), and	Competence is described in terms of responsibility and autonomy.

		practical (involving manual dexterity and the use of methods, materials, tools and instruments) skills	
<b>Level 3</b>	Knowledge of facts, principles, processes and general concepts, in a field of work or study	A range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information	<ul style="list-style-type: none"> <li>• Take responsibility for completion of tasks in work or study;</li> <li>• Adapt own behavior to circumstances in solving problems</li> </ul>
<b>Level 4</b>	Factual and theoretical knowledge in broad contexts within a field of work or study	A range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study	<ul style="list-style-type: none"> <li>• Exercise self-management within the guidelines of work or study contexts that are usually predictable, but are subject to change;</li> <li>• Supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities</li> </ul>

The EQF system is applicable to the entire education system in Germany, so that different educational paths can relate to each other. Based on the level of qualification achieved, young people are able to choose different educational paths to continue. For example, a young adult who starts with vocational education in Bavaria is eligible, after 3 years of vocational education courses, for further study in universities, as long as he/she completes the theory courses for general education and passes corresponding exams. Vice versa, if a college student considers practice-based learning more suitable, it is possible to make the transfer to a vocational school. Therefore, young people who choose vocational education in Germany are not considered as “low-achieving” students. Vocational schools are regarded equally as other types of schools, which is a unique charm of the German “Dual System”.

## **2. Major bottlenecks in introducing the German “Dual System” to China**

### **2.1 Insufficient enterprise involvement**

In China, agricultural vocational education mainly takes place in vocational schools, with a relatively low degree of enterprise involvement. As far as this paper is concerned, practical training in vocational schools in China accounts for 50% of the program, mostly taking place in school training facilities. Even if such training takes place in agricultural enterprises, the training content is often unrelated to theoretical study in school. There lacks systematic training objectives and tasks, or professional trainer staff, leading to varying quality of the training. In this case, the practical skills of vocational school graduates are relatively low and inadequate to earn recognition of the society, especially of enterprises. Graduates may not take up employment in the agricultural sector, nor are enterprises motivated enough to get involved. Thus, we face the situation of “insufficient enterprise involvement”.

In Wenzhou, we were often asked the question: “As the WVCST has good training facilities, is it possible to replace training in enterprises with practical training in school? “This could greatly reduce the operational complexity, but it is not the “Dual System” that we wish to introduce. Specific reasons can be summarized in three points: (1) **Market competition cannot be simulated:** In the face of constant fierce competition in the market, farms must relentlessly strive to improve their productivity. The circumstances differ from the school training base; (2) **The professional expertise of field trainers is irreplaceable:** Trainers on farms are usually managers or executives who not only know how to train apprentices, but also well understand the industry. They have rich practical experience, which is different from teachers in vocational schools; (3) **Only enterprises are able to provide an actual work environment and the latest technologies:** The only way for apprentices to learn about the actual work environment and the ins and outs of business decisions is through involvement in the daily work on farms; in addition, enterprises must constantly update technology, management and marketing techniques in order to meet the competition. Here, apprentices get a first-hand experience on what is the latest in the field, which is also something that vocational schools are unable to provide. (4) **A value opportunity for both enterprises and apprentices to learn from each other:** within two to three-year vocational education, the farmer and the apprentice have enough time adapting to each other and gaining deep insights on each other. On the one hand, the farmer can clearly judge whether the apprentice is qualified in terms of his or her vocational skills, whether he or she has adapted himself or herself into the company’s culture and whether he or she is the talent the company is seeking for. On the other hand, the apprentice can make a reasonable judgement on his or her role in the enterprise, the philosophy of the company and whether he or she would like to stay in the company. It therefore somehow reduces the risks for both the farmer and the apprentice to make a decision.

It goes without saying that, whether enterprises are willing and capable of participation in vocational education depends greatly on the level of agricultural development. With the industrialization of agriculture, various types of modern agricultural enterprises start to emerge in China, which results in an increasing demand of professionally trained and skilled employees. They also gradually begin to offer internships. With its high level of commercial development, Wenzhou shall be well-equipped to engage agricultural enterprises in vocational education. Moreover, the WVCST has already established cooperation with local agribusinesses. The application of the “Dual System” needs to solve the issue and actively engage eligible agribusiness and corporate trainers in the process.

## **2.2 Shortage of qualified teachers and corporate trainers for the “Dual System”**

Germany’s “Dual System” would not have been successful without qualified teachers and corporate trainers. German vocational schools have teachers for theoretical and practical sections. The former normally holds a bachelor or master's degree, has at least one year experience, and completes 2-year systematic training in teaching practice and pedagogy before taking up a teaching position in a vocational school. The latter shall have passed the "master farmer" training with rich experience in the field. Some also operate their own farms. Moreover, Germany’s vocational education teachers usually stay in close contact with farms. Mr. Liedl, a teacher with over 30 years of experience from Regensburg, told me: As head of the horticulture department, he would take initiative to contact farm owners and check if the teaching programs fall in line with their training plans, and to gain insights into the latest skills in demand. Students who choose vocational education are usually not fond of dry and uninteresting theory courses. Teachers can be much more

convincing when they combine theory with practice in teaching. Similarly, it is also required in Germany that trainers on farm shall possess specific qualifications, i.e. the "master farmer" certificate, which is one of the prerequisites for the farm to receive apprentices. Take master gardeners in Bavaria for example. To obtain the "master gardener" certificate, one shall first of all receive 3 years of vocational education for gardeners, afterwards at least 2 to 3 years of field practice, then another 1.5 to 2 years of training on expertise and teaching pedagogy, and finally final exams to complete the process.

During the field research in Wenzhou, we found that local vocational schools generally have no dedicated teachers for the practical field. Teachers of specific subjects who come from a non-teaching education background usually need to complete a 2-week pedagogy study, and another half year of teaching internship at the school before officially assume the role. Their pedagogical training tends to be relatively weak, so is their connection with farms. There are, in fact, a number of skilled farmers locally available, but they would need to go through systematic training before achieving the "master farmer" qualification.

### **2.3 Institutional and regulatory systems need improvement**

As a leading player in China's agricultural vocational education, vocational schools also become the main target of appropriate institutional and regulatory systems. The incorporation of agribusinesses into the existing vocational education system requires legislation by competent government departments that deals with issues such as "how can an agricultural enterprises be eligible to receive apprentices?" "What qualifications are required of corporate trainers before they could train apprentices?" "What kind of contract shall be signed between the enterprises and apprentices?" "What type of training shall enterprises provide?", etc. Government authorities shall also set up regulatory agencies, in particular to supervise over training in agricultural enterprises. Currently, the Steering Committee supports the Ministry of Education in providing consulting and counseling services. There are no dedicated governmental agencies for supervision of training in agricultural enterprises.

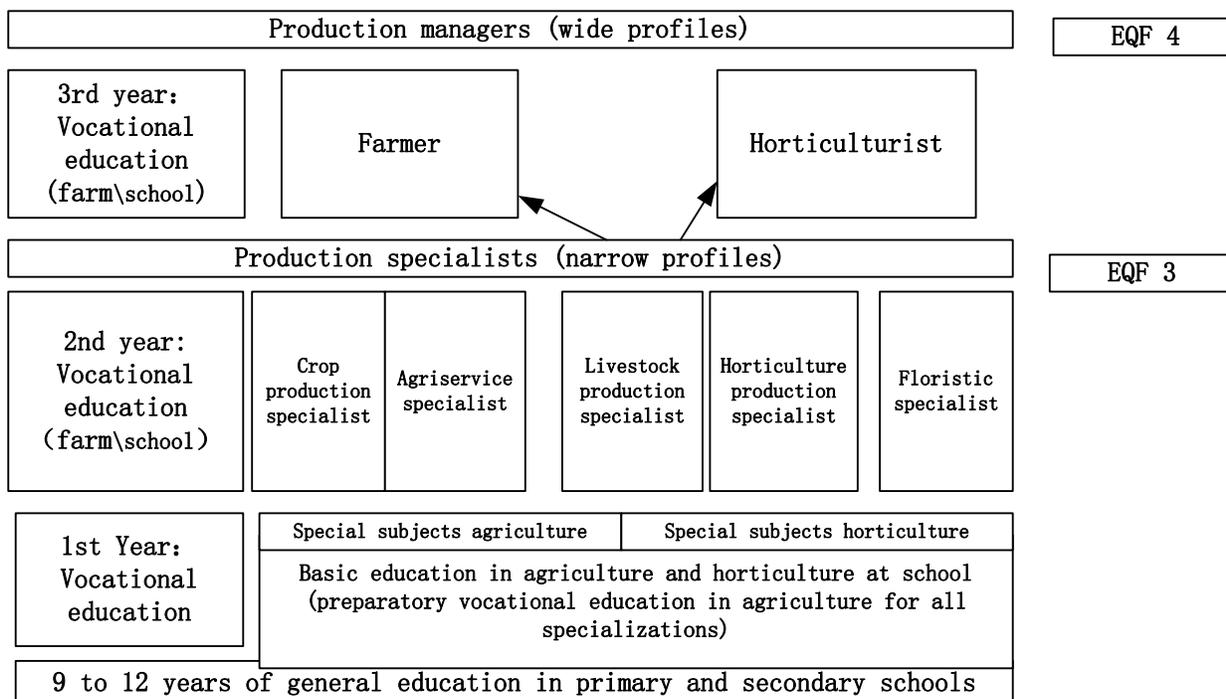
The introduction of legislation in China normally relies on experience from pilot projects, which takes time. A new regulatory system is only possible with the reshuffling of existing interest parties, which would prove to be even more difficult. Both changes shall fully consider the roles and demand of stakeholders, i.e. government authorities, enterprises, schools and apprentices. It is no easy task to alter their behavioral patterns and relationships. However, the implementation of the "Dual System" requires major changes in institutional and regulatory systems. Otherwise, all pilot projects in vocational schools remain a local practice that could not be transferred and implemented on a regional or national scale. It remains, therefore, a major bottleneck in the introduction of the "Dual System".

## **3. Proposals to the introduction of the German "Dual System" to China**

### **3.1 Introduce a simplified version of the "Dual System"**

The introduction of the German "Dual System" to China will encounter the three major obstacles as mentioned above. It would be difficult to try and strictly follow every design of the German system from the start. After many rounds of consultation with the WVCST, we have agreed to focus on horticulture and agriculture and introduce a simplified version of the "Dual System" to the WVCST.

Specifically, we will divide the 3-year program into 2 phases, the first one for two years, with practical training on a later date and the second one for one year, to be conducted in modules. Thus, the complexity of introducing the “Dual System” can be greatly reduced, while the quality of graduates is guaranteed after the 3-year program. The first year will focus on school-based teaching, so that students learn about subject matters in agriculture or horticulture. In the meantime, the school shall put in efforts in training program development, teacher training and selection/training of partner enterprises. In the second year, school learning and training in enterprises would each take up half of the time, so that the program carries further into the profession and field of study. As for the WVST, the areas of expertise may involve field crop planting, agricultural promotion, animal husbandry, horticulture and floriculture. After two years of study and training, apprentices can reach EQF level 3. In this way, the project will be able to earn more time in solving two major bottlenecks as mentioned above, i.e. enterprise involvement and capacity building of teachers and trainers. Now the second year of program may be too specific on the areas of study, which can hinder future career opportunities and professional development of the apprentice. Therefore, apprenticeship in the field of agriculture can follow two career paths, i.e. “agronomist” and “gardener” in the third year, so as to ensure comprehensive knowledge, skills and competence of the apprentice. The apprentice shall be able to achieve EQF level 4 qualification, which is in line with requirements of the German “Dual System”(Figure 2). In the third year, school learning and training in enterprises would each take up half of the time.



**Figure 2 A simplified “dual apprenticeship system”**

**3.2 Take standard guidelines of education as a starting point to discuss suitable local training programs**

As a result of the field study, the WVCST decided to proceed with revising the training program when introducing the “Dual System”. To this end, we need to work on the following three aspects.

First, we shall establish a **training program committee**. The committee could have no more than 10 members, with representatives from training schools and enterprises. Government participation is also strongly desirable. It is critical to involve all parties so that the committee is able to cater vocational education into the demand of labor market, with the support of relevant authorities. In addition, committee members shall be experts or veterans in related fields, and would actively participate in pilot project activities in the future. The committee may divide into sub-groups or sub-topics by common courses, basic courses, school training, training in enterprises and inter-company training. At the same time, the committee shall formulate its articles of association and put in place an internal self-regulatory mechanism. Consensus shall be reached on the topics of apprentice recruitment, teacher qualification requirements, training programs (including the report system, content of examinations, examination committee, enterprises for training and trainers validation) and sources of funding (e.g. for remuneration of apprentices), and approved by relevant departments.

Secondly, the committee shall give a clear description of the 10 points in the **education standard guidelines** (Table 3). Point 1, 3, 4, 6 and 10 concern the labor market demand, and shall be defined by enterprise representatives through discussion. Point 2 is for subject codes in the training program, while the remaining points focus on defining requirements for respective vocational education and training, which require active participation of the parties concerned. Thus, by identifying education standard guidelines, we would eventually be able to present a unified training program that covers requirements from schools, enterprises and inter-company training. Schools can organize the inter-company training by coordinating with enterprises.

**Table 3 Template of education standard guidelines**

No.	Content
1	Name of occupation
2	Special classification codes, namely subject codes in the training program
3	Description of occupations
4	Tasks
5	Description of learning objectives
6	Occupational qualifications (corresponding EQF levels)
7	Admission requirements
8	Duration of study
9	Examinations
10	Specific requirements for occupations

Finally, **professional trainings, workshops and exchanges** on key elements of the “Dual System” shall be organized. These are namely the following 5 elements: (1) "Dual System" pedagogy for school teachers (2) teaching and examination methods for subject modules (3) cultivation of corporate trainers (4) procurement and training on inter-company training equipment (5) management of training quality in schools and enterprises. The activities can take place locally or abroad. Due to the cost factor, it is recommended that principle project participants

shall join a study tour to Germany in the preliminary phase of the project so that they can get first hand experience with the “Dual System” while taking the opportunity to receive training on any of the 5 key elements as mentioned above. Based on past experience, it takes several rounds of workshop and training for committee members to come up with a suitable talent training program that’s fitted for local conditions.

### **3.3 Actively seek government support from both sides**

After one year of efforts, the DCZ managed to help the WVCST establish a preliminary intent of cooperation with the Bavarian Center for Agricultural Education (Landwirtschaftlichen Lehranstalten Triesdorf), a cooperation that has been approved and supported by Bavarian education and agricultural authorities. This has laid a solid foundation for the WVCST to officially implement the “Dual System” in Wenzhou. However, due to the large influx of refugees into Germany, refugees have become a focus of vocational education in Bavaria, which results in limited support of the local government to new international cooperation. In this context, the WVCST shall actively seek the support of the Chinese government in terms of funding, policy and regulation in order to implement the “Dual System”. The first phase of the project requires a large amount of “expertise” input from Germany, which leads to prominent demand for financial support. For example, a 2-week training in Germany on "teaching methods and school management" for 15 trainees is estimated to cost around RMB 600,000, which includes course fees, accommodation, travel expenses, translation costs, organization and coordination expenditures. Accordingly, exchanges and workshops in the project would be difficult to organize or sustain without any external financial support. As the project progresses with accumulating experience, we also need to mobilize stakeholders to actively participate in, and gradually change the entire existing system. Government policy and regulatory support will be increasingly important.

### **References**

- [1] Lu Xin. Further Reform and Innovation in the Higher Vocational Education (深化高等职业教育改革创新) [C]. Beijing: 2015 Annual National Joint Conference of Vocational & Technical College Presidents, 2015 (10).
- [2] Berufsbildungsbericht 2015 [R]. [28-12-2016]. [www. Bibbb.de/datenreport](http://www.bibbb.de/datenreport) 2015.
- [3] Herbert Ströbel, Anton Liedl, Annette Schmid. Dual Apprenticeship System in Germany and Cooperation Possibilities of Pilot Schools [R]. GIZ, 16.12.2016.
- [4] Claudia Hafner. Aus-und Fortbildung im Agrarbereich und Garternbau in Bayern [C]. Germany: Chinese Delegation on „Dual Apprenticeship System“, 09. 2016.
- [5] Li Ling. Comparative Study of Global Vocational Education and Training of Skilled Farmers from the Perspective of Legislation and Policies (法律与政策保障视角下的职业农民教育培训国际比较研究) [J]. World Agriculture, January 2014
- [6] Website of the Ministry of Agriculture of the People's Republic of China. "13<sup>th</sup> Five-year Plan for Cultivating New-type Skilled Farmers" [EB / OL]. [22-01-2017]. [http://www.moa.gov.cn/zwl/m/gjhj/201701/t20170122\\_5461506.htm](http://www.moa.gov.cn/zwl/m/gjhj/201701/t20170122_5461506.htm).