Social Assessment Report for World Bank Financed China
Agricultural Technology Project
Shanxi Sub-report

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I. Project Background

There are totally 47 candidate projects for the World Bank Financed Agro-tech Popularization Project in Shanxi, mainly founded in Yangling, Xian, Baoji, Xianyang, Weinan, Tongchuan in the central Shanxi Plain.

The central Shanxi Plain is an important origin of China’s agricultural civilization, featuring a temperate humid climate, well-matched natural resources of fertile and deep soil, sufficient sunshine, good water and heat supply for the development of agriculture and stockbreeding. It is a traditional agricultural and stockbreeding production zone of China, also the production and merchandizing base of egg, meat and milk in Shanxi Province. Meanwhile, this region enjoys convenient traffic and a relatively high level of social development, also rapid growth of agricultural industrialization, processing of farm and sideline products and logistics.

This region collects a range of agriculture-concerning scientific research units, universities and colleges, which have done large amounts of studies as regards agro-tech and made large numbers of advanced practical scientific payoffs. In particular, the Yangling Agricultural Hi-tech Industrial Demonstration Zone is the sole state-level agricultural hi-tech development zone here, bristling with agricultural scientific research institutes that gather above 4000 agro-tech researchers and cross 64 disciplines in agriculture, forestry, stockbreeding and water conservancy. This zone is leading at home or worldwide in fine breed selection and growth in agriculture, forestry ad stockbreeding, genital internal secretion and embryo engineering of domestic animals, protection and integrated development, utilization of vegetable resources and other researches, with large numbers of scientific payoffs to be converted.

With the increase of the economic disparity between the eastern and western parts of China and China’s entry into WTO, the rural economic development of this region faces a series of prominent problems, mainly appearing as low agro-tech equipment level, irrational utilization of agricultural resources, single agricultural structure, weakness in circulation and processing of farm and sideline products, too low quality and technological level of such products to form a strong market competitive power; low degree of development of agriculture-related industries. In general, although there has been a great development in the rural areas and rural
economy, the traditional is still dominant in the rural economy, the agricultural restructuring and upgrading remains slow, the rural economy remains at a low level. Many factors have contributed to this situation, one is the backward agro-tech innovation mechanism and low efficiency agro-tech popularization mechanism, another is the low efficiency in conversion of agro-tech achievements and small scale of industrialization that is not interactive with the agriculture and rural economy, the other is the agricultural mode of production of low level of family organization and low benefit of the small-scale agriculture, which has impeded the chances and momentum of peasants to accept new techniques forwardly. These reasons have led to the disengagement between agro-tech and agricultural production, so agro-techniques can not serve the agriculture and rural economy effectively and advanced practical agro-tech achievements are in significant contrast to the relatively underdeveloped rural economy in the central Shanxi plain. This contradiction has serious restrained the income increase of peasants, industrial restructuring in rural areas and the development of the local economy.

According to its conditions, in order to give play to the part of technology in agriculture and rural economy, especially the radiating effect of agro-tech Yangling to the surrounding areas, the Shanxi Provincial Government has determined to implement the “World Bank Financed Agro-tech Construction Project” in the 6 cities/districts in the central Shanxi Plain centering on Yangling.

II. Overall Project Classification, Introduction and Suggestions for Each Project

Among the 47 candidate projects, 26 ones are in Yangling and the remaining 21 ones in the other 5 cities in the central Shanxi Plain. The Social Assessment (SA) Team has evaluated 45 projects altogether, leaving the project of construction and deep processing of the Yangling organic asparagus base unevaluated due to the absence of the person in charge. The 800-ton bitter-peel rattan preparation project was not covered by the social assessment because the company in charge wanted to abandon the application for the World Bank loan.

1. Study into Western Agricultural Resources Management and Sustainable Development Strategy (Development Planning Bureau for Yangling Demonstration Zone)

This project should be essential to the construction of the Yangling Agricultural Hi-tech Demonstration Zone. Its 8 major objectives will provide theoretical and policy support to the
successful implementation of the project and the development of the western agriculture on both micro and macro scales. The whole project should be run in a mode detailed manner, for example, what organization and system should be used to overcome the existing deficiencies, how to mobilize excellent experts nationwide, how to focus on the distinctiveness of research. The SA Team thinks has put forward several concerns, 1) the selection of research tasks and organization of researchers are to be further detailed; 2) some tasks must be closely centered on the project; 3) gather the multidisciplinary advantages, set up a number of long-standing experimental bases for agricultural resources management and sustainable development in the whole western rural areas, provided with some standing researchers; and 4) the establishment of the application and feedback mechanism of research findings.

2.Yangling Agro-tech Major Market (Yangling Modern Agricultural Development Ltd., S&T Information Center of Demonstration Zone and Yangling Agricultural Intellectual Property Information Center)

The Yangling Agro-tech Major Market Project consists of the Yangling seed market, animal market, information market and intellectual property service system. The SA Team thinks it will enable Yangling to fully exert the technical demonstrative and leading role to establish a unified, normative market. It suggests to ensure the quality of the seed market and the animal market by establishing an effective managerial and supervisory mechanism, taking advanced means of testing and normalizing the operational behavior of seeds through more detailed design, so as to finally guarantee the interests of consumers and peasants.

3.High-quality Forest and Grass Breeding Base (Yangling Zhongfu Green Silicon Valley Inc.)

This project plans to construct a 300mu stock resource nursery and introduce quality forest and fruit resources worldwide; construct a 250mu quality alfalfa stock base and introduce 50 varieties of forage grass; set up a processing plant of alfalfa products; set up a training center; drive along the construction of 118,000mu forest and grass bases in the province. The project company thinks there is certain risks in any pattern in cooperation with peasants, for example, some peasants will not sell their harvest to the company and some peasants would refer their improper planting to the company. The company thinks the solution to such risks is good faith and due performance of the contract, fully improvement of the skills and concept of peasants.
At the affected villages investigated, the investigated villages already have the experience of cooperation with Zhongfu Company. The team asked the villagers to make sequencing of the several means of livelihood and found that they were enthusiastic for planting high-quality forests and grasses, because as perceived by the villagers, the economic benefit of planting sapling is secondary only to cow breeding but is smaller in labor intensity and risk.

**Sequencing 1: Sequencing of Several Means of Livelihood by Peasants at Buwang Village, Dazhuang Town, Wugong County**

<table>
<thead>
<tr>
<th>Economic benefit</th>
<th>Working outside</th>
<th>Planting sapling</th>
<th>Growing grain</th>
<th>Raising cow</th>
<th>Transport and doing business</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>4</td>
<td>5</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Labor intensity</td>
<td>4</td>
<td>5</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

Notes: 1-2-3-4-5 indicates the order of degree.

It can be seen from the case below that women can well participate in the project.

**Case 1:** Jin Xuefang, female, 38 years, 5-member family, 3 children (14-10 years), whose annual tuition amounts to around 2000 yuan. Her husband is a middle school teacher with an annual pay of about 10000 yuan. Her family has 2.5mu land, of which 2mu for tree planting and 0.5mu growing grain. She works hard on the sapling land. The planted saplings will not be sold until the end of 2003. The present proceeds on the land are mainly the land rent. Jin’s seasonal activities for sapling planting: Feb-Mar, busiest with pruning and transplanting; Apr, weeding, building, forking; May-Jun, fertilization; Jul, weeding, pest prevention, pesticide application depending on weather and growth of the nursery stock; Aug, fertilization; Sep, weeding, stubble cutting; Oct, pruning, weeding.

The SA Team thinks it very good for the project company to be prepared to set up the pattern of “rural silicon valley collaboration area” and establish reliable, stable interest connections with a peasant association to be founded. It suggests that the company shall enter into contract with every peasant in addition to the association; that the company shall lay down a detailed program for training and technical guidance with fixed technical directors; that the company shall ensure the purchase of forests and grasses from peasants at the protective price. The final result of the project depends on the market of high-quality forests and grasses.

**4. Beef cattle fine breed breeding and beef cattle fattening (Yangling Qinfeng Meat Foods Ltd.)**

The company has signed a letter of cooperation intent with the villager committee but has not drafted the contract with peasants. Publicity has been made twice at the affected village.
The affected villagers think that there are 5% rich families, 15% quasi-rich families and 60% medium-income families at the village, with income roughly balanced with expenditure, as well as 20% poor families, which cannot yet fully guarantee their basic livelihood and the school education of their children. There was the history of raising Qingchuan cattle at this village. There are many years of cattle raising experience at Wuquan Town, which is also a teaching and practicing base of the Northwest Agricultural University. However, the villagers raise cattle family by family and have not solved the marketing problem. It can be seen from the villager forum and sequencing that, the project is very popular among the villagers, who have also attended the publicity and training courses organized by the company, especially medium-income ad poor families.

The following case shows the aspiration of peasants for raising beef cattle.

Case, Ma XX, male, 50 years, in a 3-member family, his wife died early on, 2 sons, the elder one 21 years, the younger one 14 years. His family has 4.5mu land and raise nothing due to the short of money. The elder son went to Shunde, Guangdong for work in 1996 before being able to graduate from junior high school. For years, the elder son has earned several thousand yuan for the family besides his living expenses. The younger son is studying at junior high school at the tuition of 350 yuan a semester.

Ma feels it less costly to raise Qingchuan beef cattle than to raise cow, as long as there is a guaranteed marketing channel, a head of cattle can ear several thousand yuan a year. However, he is actually unable to come up with this sum. If the company can provide a certain part of the capital, he is very eager to attend the project.

The SA Team thinks 3 key factors of this project are to be further clarified: 1) except being based on the villager committee and leading families, the company shall enter into contract with every involved family for the project; 2) ensure the poor and women can participate in the project, where the company can provide certain financial aids in the purchase of calf and forage; and 3) the technical directors have to be stationed at the village to direct villagers in raising beef cattle in accordance to the company’s standard, so as to ensure the quality and reduce the risk of both parties.

5. Yangling High-quality Fruit Variety Planting Demonstration Base (Yangling Shenfeng Farming and Forestry Technologies Sand Control Ltd.)

One of the fruit seedling bases of Shenfeng Company is situated at Xiajiagou—the affected village. The land for the first batch of bases of the company is a 250mu plot leased from the villagers, used to build sunlight greenhouse and cultivate fine fruit tree varieties. This project is mainly aimed to build up a quality fruit variety planting demonstration base at Xiajiagou.
This investigated village has many years’ experience of fruit planting, 320 families, 1450 people, 3 natural villages, per capita responsibility field of 0.8mu, 260 fruit tree planting families. Main varieties planted are miscellaneous fruits, such as Golden Sun apricot, kiwi fruit and peach. The 60 families as non-planters mainly deal with other industries, such as transport or working outside. The villagers has a certain understanding of the project and plan to add the Golden Sun apricot planting area by 300mu to cover about 160 families. The fruit seedling company will offer seedlings at the unit price of 5 yuan (2 yuan to be advanced by the company and 3 yuan paid by the peasants). Now a general meeting of villagers is being held to discuss the agreement with the company.

The fruit benefit, production, marketing process and women’s participation in the project at this village can be seen from the following case.

Case: Xu Sufang, female, 36 years, 5-member family. The 3mu land of her family is planted fully with kiwi fruit, of which the saplings on 1.6mu have not fruited.

Household income: her husband drives farm tractor and deals with building, earning 10000 yuan a year. She works at the demonstration park, paid 240 yuan/month, including pesticide application, pruning, weeding. Take the orchard in 2002 as an example, the income on 1mu land was over 2400 yuan, the fruits were purchased by Shenfeng Company or fruit merchants. The investment in the orchard include 800 yuan in Year 1 and 300 yuan a year afterwards for fertilization and watering, excluding labor costs.

There is 180mu collectively contracted land at the village, contracted to peasants at the price of 200 yuan/year. She contracted 1mu land, now growing crops and planning to participate in the project in the next year to plant Golden Sun apricot. She thinks this variety blooms and matures early, has many fruit sets, can withstand storage and transport. The company would assign technicians to direct pruning, pest control and unified purchase.

The SA Team thinks this village has a good economic base and in popularizing new varieties of fruit trees, the company should do well in technical guidance and product purchase at the protective price.

6. Grape and wine production (Shanxi Jufeng Technologies Inc.)

This project consists mainly of the planting, processing of brewing grape and wine marketing. In winter of 2002, the company planted brewing grape seedling for 2300mu at Yangling under Baoji City. The production and processing equipment is to be set up before fruiting in 2005. The expected market is mainly Shanxi, Guangdong and Shanghai. In 2002 and 2003, a trial sales was done in Baoji.

The peasants planting brewing grape have signed a contract, a base management department has been set up at Yiping Village under Yidian Town, Qishan County, Baoji, where there are
3 stationed employees of the company, including the deputy general manager and 2 technicians. In Jun 2002, the company held a meeting of major families in cooperation with the local government, issued leaflets, technical manuals and slogans.

The company assigned 28 employees to publicize this project, guide on cultivation, sign grape purchasing agreements at the protective prices for a term of 15 years across tens of villages out of 10 townships in 2 countries. In winter of 2002, the temperature at the dry plateau to the north of the Wei River dropped to \(-11^\circ\), the survival rate of seedlings was affected, when the company organize the public to fill the gaps with seedlings at the beginning of spring.

The SA Team made an investigation at Xinglin Village under Xinglin Town, Yangling—one of the affected villages. The predicted planting area of this village is 200mu. In 2002, above 200 families signed up for the project on the village meeting, but later, since the well drilling job by Jufeng was not determined yet, only few families are now planting brewing grape.

Liu Xinhu, male, 40 years, 7-member family. His family has 4.5mu watered land and 1.5mu dry land. At present, 1.2mu Jufeng grape, 1mu brewing grape and 0.5mu apple is planted in the watered land. On the remaining part of the watered land and the dry land is planted wheat and corn. The brewing grape was first planted in Nov 2002 with a brochure guiding them how to plant it and a contract with the company to guarantee the marketing channel. Presently, the whole villager team has grown 4.7mu only in a scatted manner. For 1mu land, pay 260 yuan for seedlings (2 yuan/one, 1 yuan advanced by the company, 1 yuan paid by us). The contract was signed then but is not delivered to us yet. The lowest protective price is 0.8 yuan. Since it is too cold in winter and too dry later, the survival rate of the seedlings was as low as 30%.

The company assigned someone here for an inspection in March and was ready to make a supplementary planting in autumn. Suggestion for the company: be more responsible for the peasants, see more and give guidance, make up for the seedlings.

The SA Team thinks the period from the planting of brewing grape to wine brewing is long. It suggests the company introduce an insurance mechanism for peasants and try the pattern of leasing land for grape planting at some bases, where the company shall enter into a land lease contract with peasants every year and peasants participate in the project in the form of employment.

7. Industrialization of organic vegetables in Yangling
(Yangling Qinfeng Agro-tech Inc., Dingtian Jinong Company)

The company plans to offer peasants free seeds and seedlings, and to deduct such costs from the sales income of finished goods. Thus, peasants at all bases can deal with the production of organic vegetables. The company also applies preferential policies to poor families, i.e., door to door coaching for peasants in a one-to-one manner and purchasing their products at the
lowest protective price. Women can participate in the planting of organic vegetables and enter the factory for vegetable processing. To ensure vegetables are really organic, a responsibility joint insurance system is practiced, namely a unit consists of 7 families, in case of a problem with any family, the liability will be borne on the 7 families. If they do well enough in quality, the company will extend a certain reward.

The SA Team had villagers make sequencing at Zhaixi Village in relation to economic mode. The villagers think the planting of organic vegetables is profitable but less risky.

Sequencing: Sequencing of several modes of operation by Zhaixi villagers

<table>
<thead>
<tr>
<th></th>
<th>Growing grain</th>
<th>Greenhouse vegetable</th>
<th>Organic vegetable</th>
<th>Raising cow</th>
<th>Working outside</th>
<th>Transport</th>
<th>Doing business</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td>7</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>6</td>
<td>5</td>
<td>4</td>
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<tr>
<td>Intensity</td>
<td>1</td>
<td>6</td>
<td>7</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Risk</td>
<td>6</td>
<td>5</td>
<td>7</td>
<td>1</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

Notes: 1-2-3-4-5-6-7 shows the order of degree from high to low.

The following case also shows the attitude towards the project.

Ma Junxia, female, 47 years, villager at Team 2 under Zhaixi Village, living in a 6-member family. Her family raises 4 cows since 2002; besides, she also grows vegetables for others in their greenhouses. There are 7 villager teams at Zhaixi Village, those working at greenhouses are mainly from Teams 2, 3 and 4. There are about 20 women from Team 2 working at greenhouses. Each greenhouse occupies about 0.5mu land and costs about 8000 yuan. The pay for their job is: 900 yuan/month for two persons contracting a greenhouse in busy seasons and 600 yuan/month in slack seasons. When speaking of the organic vegetable project of Qinfeng, she said she was very willing to participate, because the price of organic vegetables is much higher than the market price. She had been growing vegetables for others and has got some experiences. Since the company offered techniques, she thought the participation in this project will offer job opportunities to women and solve the local problem of surplus labor.

The SA Team thinks the key to this project is the product quality, so that the company must ensure strict technical guidance and training and build up the conceptual and technical change from greenhouse vegetables to organic vegetables among peasants. To ensure quality, it is suggested to apply the pattern of base + peasant at some affected villages, where the company will enter into land lease contract with peasants on an annual basis and peasants participate in the project in the form of employment.

8. Construction of Yangling Dairy Demonstration Base (Yangling Chenguang Dairy Ltd.)

The company thinks existing difficulty is the milk source and quality problem, which can be addressed by quarter construction. Fresh milk with a shelf life of 24hr has bee eliminated and what remain are dairy products with a shelf life of 8 months, whose fund recovery is slow. At
present, fresh milk with a shelf life of 30 days is popular, but its production equipment has not been set up yet, which can be addressed in the project. The pattern of company + base + major family + peasant can settle the problem of low technological level in raising cattle and low profit among peasants, guaranteeing the quality and quantity of the company’s source of milk. At the beginning, the relationship between the peasants and the company was not contractual enough. Major cattle raising families are very important to the above pattern, because most of them are leaders of the cattle raising association.

There are above 400 families and 1800 people at Jiangjiazhai Village under Dazhai Township, where above 40% families deal with cattle raising, which can be dated back to over 10 years ago. In 1996, 10% families raised cattle, but the milk price fluctuated because there was not an appointed milk purchaser. The villagers think that with the company’s involvement, base construction and good technical support, the milk purchasing at the protective price will protect their interests.

In 2002, a cattle raising base was set up at Jiangjiazhai Village and the cowshed construction cost above 220,000 yuan, in which the government contributed 140,000, the remaining was funded by Pan Shiquan—a major raiser of the village. Chenguang Company was responsible for all the equipment of the milking station. The epidemic prevention station was responsible for the unified management of disease prevention and treatment. Peasants eligible for entering the base were notified by the village committee by advertisement, provided each family has at least cows. Now among the above 20 families at the base, a family raise 20 heads of cattle at most.

Zhou Xiaojuan, female, 30 years, 9-member family. She has just started cattle raising in 2003 by buying a cow with above 10,000 yuan and 2 heads of grown cattle. Since working outside is very hard and badly paid, many villagers are raising cattle, because the milk produced will be collected by the company and there are cowsheds for rent. The skills are learnt from those experienced, a cattle raiser would feed and milk cows 3 times a day with the forage prepared by one’s family (corn, wheat barn, forage 60-65 yuan/bag of 80 catty). The daily milk output is about 50 catty, depending on the age. Her own cow has just born one brood of calves, with milk output of 40 catty/day, purchased at 0.77 yuan/catty. It is anticipated that one head will produce net income of 2000-3000 yuan/year. Each cowshed charges a management fee of 800 yuan a year, raising above 20 heads of cattle, provided with a silo bin for one shed of cattle, the cost of which is 3000 yuan. Milk is pressed mechanically and weighed on the spot, the milk payment is settled once a month. A head of cattle bears one brood a year on average. The breeding costs 100 yuan/time. There is no problem for a woman to raise 2-3 heads of cattle, but most cattle raisers are men. There is a cattle raising history of over a decade at the village, many people want to raise cattle but have no money to buy. The company is expected to bring along small families by providing facilities and training.

From the above case, the SA Team thinks the future focus will be the support to small families by the company and major families by providing loans and purchasing milk at the protective price.
9. Construction of organic asparagus base and deep processing (Shanxi Fulushou Green Foods Ltd.)

This project was not evaluated due to the absence of the person in charge.

10. Yangling mulberry industrialization (Yangling Shengsang Green Foods Ltd.)

This project is a new expansion project, where the company prepares to newly open 5000mu mulberry orchard and modify 5000mu existing mulberry orchard. In Mizhi in North Shanxi, the net profit on 1mu mulberry orchard is 2000 yuan. There are popularized 4-5 fine varieties of fruit mulberry in Ankang (a poor area), with output of above 1000kg, at most 3000kg. This area is a silkworm ad mulberry base with low silk prices. The existing mulberry orchard will be transformed into a mulberry orchard for both fruit and leaf purposes with a minimum per mu yield of 1500kg. The company will apply the protective purchase price of 0.6-0.7 yuan/catty.

A 3-level training mechanism consisting a township mulberry or forestry station, village fruit mulberry association and mulberry technicians will be established to popularize advanced techniques to peasants. The township mulberry station will enter into contract with them using the station’s network, facilities and human resources. By organizing mulberry purchasing and technical training, these organizations can be benefited and operate properly. The company has founded joint-stock Ankang Company with the forestry station of Hanyin County. When the forestry station on behalf of the government has become a shareholder, it can ensure the technical training, the monopoly of the orchard and the stability in mulberry purchase. The enterprise can reduce the risk of unstable source of mulberry in the company+ peasant pattern.

The SA Team thinks as long as the company’s deep-processed products are marketable, there will be no problem with the project’s social benefits.

11. Production and processing of traditional Chinese medicinal materials GAP (Yangling Medicine Pharmaceutical Ltd.)

This project is an expansion project. The cooperation with peasants is mainly embodied in the setup of a 700mu demonstration park of traditional Chinese medicinal materials meeting GAP
requirements in Yaozhou District. In Xunyi County under Yaozhou District, a 26,000mu GAP base of traditional Chinese medicinal materials will be built, where there is a long history of planting medicinal materials.

The company cooperates with peasants in the form of company + base + peasant. There is difference in operating mode between the 2 bases. In Yaozhou, Yaozhou Medicines Company is relied upon, which has experiences in planting and marketing of medicinal materials. A joint-stock company (temporarily named Sun Simiao Planting Base) is set up with a contract signed for cooperation. The Xunyi Base is located at Cifang Village, Chengguan Town, where the company has entered into a milk vetch seedling agreement with the villager committee, it is up to the villager committee to mobilize and organize peasants to plant medicinal materials. There are technicians and an office locally for technical communication and monitoring.

The contract between the company and peasants stipulates that the company shall provide seedlings, technical guidance and purchase products at the protective price. After Sep, 2003, milk vetch and iastis root were planted under the standard that pesticide and fertilizer shall be input on land at the compensation of 100 yuan/mu. The selection process of affected families is: first determine a suitable site for medicinal materials, local peasants with a strong will of becoming rich may sign up voluntarily. The next step is to give priority to the planting by the poor to support typical planters. The picking, collection and primary processing of medicinal materials have to be done by women. In this way, women’s economic status and family status can be elevated.

The company thinks its own pressure is greater than that on peasants and the credit problem of peasants is important. Last year, yellow ginger was planted in Yaozhou with high price and high quality, peasants sold yellow ginger stealthily, so that the company failed to obtain the product quantity stated on the order. The company thinks it necessary to establish a mutual trust mechanism and gradually build up the legal consciousness of both parties. Meanwhile, the availability of water resources is essential to the construction of a base.

The SA Team suggests the company formula a training and technical guidance program in more details.

12. Production of new nuisance-free pesticide
(Yangling Pesticide Chemical Engineering Ltd.)

This project is a new expansion project. The cooperation with peasants is mainly embodied in 2 ways, one is to set up a 25000mu chinaberry raw material supply base in Xixiang County and the other to set up a 20000mu sandy cypress raw material supply base in Shenmu County. The company will also construct a raw material extraction plant and production lines for the development of 0.5% chinaberry insecticide emulsion and sandy cypress insecticide.

In the previous pilot test stage, the company once directly purchased natural materials from the raw materials base. It is forwardly proposed by peasants in the production area that, if the
company undertakes to purchase all of their plantings, they will be more active. In the future, the company will cooperate with peasants in the form of company + villager committee + peasant, introducing the project execution plan to peasants, formulate a letter of cooperative intent and enter into contract on a voluntary basis. Presently, the company has made publicity at the demonstration and signed the letter of cooperative intent.

The SA Team thinks the project has achieved favorable social benefits. Chinaberry and sandy cypress can be easily planted on barren hills and slopes, imposing low participation costs on the poor and enabling women and the elderly to well participate therein. It is suggested to design the planting area in a gradual manner according to the development of the market for new nuisance-free pesticides.

13. Organic Safe Pork Industrialization Demonstration Project (Yangling Runger Foods Ltd.)

The SA Team thinks the key to the project’s success is the quality assurance for organic safe pork. The company is prepared to address this by setting up service centers at the 20 villages undertaking the project. The work of a center is focused on epidemic control and prevention, centralized training and forage offering. Now the training materials have been compiled. The company thinks it too costly to construct a base and will not consider this unless there are at least 10 boars. A service center will cover 150 breeder families, which would release 10,000 pigs a year. The service center staff consists of the village head, major pig raising families supported ad veterinaries.

At Guo’s Team under Lijia Village, Xinglin Town, Fufeng County, we found pig raising was formerly an incidental occupation. Women raised pigs by experiences and would suffer from a loss. However, the company purchases safe pigs at a price 15% higher than the market level, peasants will hence benefit and are active, as indicated by the case below.

Li Yongsheng, male, 50 years, 4-member family, his wife 47 years, son 21 years, daughter 22 years, enrolled at the Foreign Language Department of the Shanxi Normal University in 2002, paying the tuition of 10,000 yuan a year. Now the family raises 6 pigs, an indigenous pig, a Guangming pig offered by the company, a standard pig is worth 780 yuan and weighs 30kg. The greatest difficulty in raising pigs: I like Guangming pigs and want to deal with large-scale breeding but have no money. Suggestion for the project: do well in after-sales service and purchase under the contract.

Guo Ying, female, 56 years, 6-member family. The pigs are raised by the whole family and mainly taken care of by me. Before 1998, above 10 pigs were raised; later we decided to raise the scale, now there are above 100 heads on hand (20 ones for fattening, 70 piglets, 15 sows and 1 boar for breeding). A pig is typically released at 5-6 months, requiring forage of about 260 catty. Now the family releases 200 pigs a year. The pig breed is directly related to price. In the past, the profit of a pig of ordinary breed is 50-60 yuan, now that of a Guangming boar
is 150-200 yuan (300 yuan as cost), the advantage of which is high resistance to disease and fast growth, all fed with the safe forage provided by the company at a price slightly lower than other forages. Any epidemic disease is generally treated by myself (with many years of experience). There is a after-sales service station set up by the company at the village, which helps us solve some difficult problems free of charge. These years, pigs sell at good prices, the company would purchase pigs at a price 15% higher than the market level. Although some purchasers from other provinces come here to purchase pigs at high prices, the company has always maintained its price advantage under a long-term contract. The family can now earn above 20,000 yuan a year. I would feed the pigs 3 times a day and sleep beside the pigpen at night, spending 5-6 hours a day on them. My family has invested above 10,000 yuan on the pigpen, where excrements are directly flushed to the manure pit in the front to create good sanitary conditions. We have purchased 8 sows from the company in succession, ranging from 780 to above 1000 yuan/head. Now we can manage it and still want to enlarge the scale by buying more sows. The villagers are active for pig raising and learning from major breeder families.

The SA Team thinks the company must formulate a detailed training and technical guidance program to realize the transition from the traditional pig raising method to organic safe pig.

14. Resveratrol industrialization (Shanxi Saide Hi-tech Biological Inc.)

The company is prepared to cooperate with peasant in the form of company + base (near the plant) + technician (backed by technical training) + major family + peasant. Major families with a better economic base are encourage to bring along minor families and may united 10 to 20 families to plant high-grade giant knotweed that can extract resveratrol. They will serve as a bridge for purchasing. Contracts have been signed with the peasants, village, township and county to fix the protective price of 3 yuan/kg. The peasant training is the first priority of the company, which has compiled a training manual and is prepared to train peasants in the form of teaching and field guidance. By 2003, 100 peasant families have been trained.

The company thinks peasants’ risks are mainly natural disasters, e.g., hailstone, and is ready to introduce insurance during the project execution to guide peasants to cover the agricultural insurance against the force majeure.

The SA Team thinks that since the project base is situated in a state-level key poor county, the project will promote the local industrial restructuring. Since many men are working outside and women have the tradition of planning, the project will involve the poor and women.
15. “Bitter-peel rattan” planting base and production of 800-ton nuisance-free pesticide (Delibang Technologies Inc. under the Agricultural University)

This project was not evaluated.

16. Fine-breed Cow Embryo Transplantation Center (Yangling Jinkun Bioengineering Ltd.)

This project is a new project. However, the company began to cooperate with Xibo Village as early as 2000, where villagers breed embryo cattle and embryo sheep. The company has first brought along a number of major breeding families of embryo-transplanted fine-breed cow at the affected village and fully demonstrated the effect of cow breeding on income increase to the peasants. Through this demonstration effect, the fine breed cow breeding by peasants has been driven.

Xibo Village, investigated by the SA Team, is already in cooperation with Jinkun. There are 234 families and 1100 people here, raising 300-400 heads of embryo transplanted cattle (the Qingchuan cattle) at most. Peasants are very enthusiastic for stockbreeding. The villagers say that there are 3 criteria for selecting breeder families of embryo transplanted cattle: 1) to see whether there is credit; 2) whether there is the experience of cattle raising; and 3) whether there is sufficient space and cowshed at home.

From the following case, we can see that the cooperation between the villagers and company is very smooth.

Peng Kemin, male, 35 years, 5-member family, with 8 cows at home. The embryo cattle bred in conjunction with Jinkun has been handed over to the company, with 7 heads of embryo sheep and 20 Boer goats remaining. The cows are bred in a centralized way at the breeding zone built on the village in 2001, funded jointly by the government, the breeder family and the village. There are about 200 cows at the zone, consisting of cowsheds and a sports field. The recent embryo transplanted cattle was drawn from the company in Jul-Aug, 2002 for a period of 10 months at a deposit of 5000 yuan. In May 2003, cows and calves were recovered by the company at the cost of 9000 yuan. I raised cattle for 3 consecutive years, which proved profitable. The net income from a head of embryo transplanted cattle is 200-300 yuan/month. The annual profit on a cow is 5000 yuan. Cow is profitable but the market is less unstable than that for cattle of the company. He thinks Jinkun Company is highly creditable.

The SA Team thinks that the key to this project is the technical leadership and comparative advantages.
17. Technical demonstration for water conservation and irritation (Yangling Qingchuan Water Conservation Equipment & Engineering Ltd.)

This project is an expansion project aimed at cash crops areas focused on fruit trees, sunlight greenhouse as a means to increase peasants’ income, Datian Demonstration Zone, ecological improvement project, large farms, etc., without any direct connection with scattered peasants.

18. Production of bio-degraded starch resin (Yangling Wolin Int’l Degradable Starch Resin Development Ltd.)

This project is new and not directly connected with peasants. The project’s social benefit is closely related to the technical maturity, product comparative cost and advantages.

19. Yangling rural women technical training and business initiation (Women’s Federation at Yangling Demonstration Zone)

The SA Team thinks this project has been fully concerned with the development of women and achieved significant social benefits. The project covered 2 parts: 1) the woman training program, which trained 11100 rural women altogether; 2) the business initiation program for woman, including the construction of a handicraft processing plant, driving along 1000 rural women to raise special healthcare chicken and building an agro-ecological sightseeing park. The woman training subproject has been launched, 6 woman schools have been set up, to which the technical support is provided by the corps of 100 expert volunteers. The business initiation program for woman needs to be perfected in market research, mode of operation and feasibility demonstration. In the women training program, the SA Team suggests the design of the 71 woman schools shall involve women. For the business initiation program, the SA Team suggests to seek for a strong company to undertake the project execution and the work of the Women’s Federation of the Yangling Demonstration Zone should center on coordination and supervision. Conduct a comprehensive demonstration of the feasibility, especially the market, technical maturity, and return on investment of the project to be established. The participation planning for women should be perfected. In the project publicity and woman training stages, women’s associations should be set up village by village.
to fully mobilize their activity and enable them to take part in the project design, organization, supervision and execution to the greatest possible extent, including proposing suggestions on the content design.

**20. Food Quality Certification Center (Test Center of Northwest University of Agricultural & Forestry Science & Technology)**

This project is an expansion project without direct regard to peasants, but it has embodied a feasible direction to increase the agricultural added value of China and improve the market competitive power. The SA Team suggests the center act as a certification organ by combining with relevant projects, such as the industrialization of organic vegetables in Yangling, the construction of organic asparagus base and deep processing projects. On the other hand, the center may train the affected peasants in cooperation with the project company, which is good to improving the perception of the interest groups on food quality certification. The SA Team also suggests to improve the technical level of key certification experts at the center.

**21. Peasants IPM training and service (Yangling Xinyuan Biological Ecology Institute)**

The Yangling Xinyuan Biological Ecology Institute started its IPM studies since 1986, has set up experimental bases in Luochuan and other places and has compiled a training program. The company is prepared to conduct technical demonstration, guidance, inquiry in the form of “village-level economic organization + peasant” and “IPM technical association + peasant”, so that the technical demonstration can be closely related to as many peasants as possible and guarantee the fulfillment of technical services to each family. The project undertaking unit has entered into a technical demonstration and popularization contract with the villager committee and technical association at the demonstration base.

The SA Team has made an investigation at Team 4 under Bigong Village—an affected village. The project will be backed by the orchards and major families for IPM training and services.

Case: Ma Keru, male, 43 years, 5-member family, chairman of the fruit tree association. At Team 4, Bigong Village, Wuquan Town where he lives, there is a 110mu apple yard. With the direction of the Yangling Xinyuan Biological Ecology Institute, a fruit tree association was founded with 20 members, mainly for household agro-tech coaching, including pruning, pest
control, bagging and fertilization of fruit trees. 4 key technical guidance events occur yearly. He owns a 10mu apple yard, 20mu nursery stock, mainly growing miscellaneous fruits and cash nursery stock. He began to deal with orchard since 1990, when he was unskillful and directed by teachers from the Northwest Agricultural University. In 1996, he began to deal with nursery stock on a large scale. The profitability of nursery stock depends on the market information and variety. The work at the apple yard around a year mainly includes: Jan-Feb, winter management, pruning, deep tillage, winter irrigation; Mar-Apr, fruit tree re-pruning, pesticide application; May, around the blooming period, de-blossoming, fertilization; Jun, bagging management; Jul, re-fertilization, pest control, pesticide application every 10-15 days; Aug, picking of medium mature fruits, pest control and fertilization for late mature fruits; Sep, fall fertilization for late-maturing apple, pre-picking management; Oct, collection, storage and distribution. Before winter, perform winter irrigation.

The SA Team thinks this project involves the conceptual and behavioral change of affected peasants, the popularity and recognition of the IPM training and service among peasants will depend on the position of the 1000mu apple yard and 1000mu rape in the household economy of peasants.

22. Yangling garden nursery stock popularization base
(Shanxi Fujinlai Technological Investment Ltd., Yangling Branch)

This project is to establish cooperative committees at local townships to be responsible for the planning, organization, execution and control of this task, namely the pattern of company + base + peasant. Several villager teams with better conditions will serve as the popularization base. Cooperative teams of affected families will be founded on a voluntary basis to fulfill the popularization area of each peasant and enter into a planting contract with each peasant. The company shall provide technical training and technical standards to peasants, the expenses of which will be borne on the company. The company will regularly assign technicians to check and guide the productive management of families under popularization together with the rural personnel concerned, in order to solve production-related problems. The company shall offer peasants containers and artificial soil and bear 80% of the costs. Young seedlings that meet the specifications will have a definite price and peasants do not have to pay the cost. The company will consign peasants to cultivate the nursery stock. If the growth of nursery stock cultivated meets the normal indicator, the company will pay the commission for that year to peasants. The company shall recover the cultivated nursery stock that reaches the specified standard and pay the relevant costs to peasants in a timely manner.

The SA Team thinks that, to guarantee the project’s social benefits, the company must do well in training, where there must be specially assigned technicians to make sure peasants master
the planting techniques; the company must recover the nursery stock reaching the specified standard in time.

23. Yangling Circulating Seawater Culture Demonstration Park (Yangling New Coast Modern Cultivation Ltd.)

This project has designed 2 participation schemes for peasants with poor and good conditions respectively. Poorer peasants shall cultivate South American white prawn outdoor with less input. Richer peasants shall cultivate gemstone fish with circulating water, which is great in both input and profit. During operation, the project unit is prepared to provide peasants with technical cultivation services, personnel management training and follow-up guidance. At the same time, fries and forages will be supplied to peasants, especially rural poor people, at low prices, cultivated products will be purchased from peasants at the agreed price.

The SA Team thinks this project will make good social benefits. When the project’s technique is simplified, peasants can easily master the cultivation process. The low labor intensity will attract the participation of the poor and women. As long as the project company can well provide the integrated service of cultivation technique, fry, forage and market outlet to affected families, peasants will be greatly benefited.

24. Demonstration popularization of organic potash fertilizer (Shanxi Juchuan Fuwanjia Inc.)

This project has no direct connection with peasants and is an expansion project. The company is ready to add 2 dedicated organic potash fertilizer production lines in the existing 20,000t/year organic potash fertilizer production facility, namely: 4,000t/year organic potash fertilizer specially for tealeaf and tobacco, 4,000t/year organic potash fertilizer specially for traditional Chinese medicinal materials. Another plan is to construct a 1200m$^2$ automatically temperature controlled greenhouse and an 864 m$^2$ warehouse for raw materials and products. The public works will rely on the old plant. Produced products will be widely popularized at the tobacco, traditional Chinese medicinal material and tealeaf planting areas in Ankang District—a poor region in Shanxi. From 2003 to 2008, it is planned to bring along the peasants in the tobacco, tealeaf and traditional Chinese medicinal material producing areas with the leader of Fuchuan Fuwanjia, so as to offer pre-production, mid-production and after-production services, create a green, efficient and high-quality production base, and greatly improve peasants’ income by improving the quality of crops. The SA Team thinks this action has good social benefits and
hopes the company to formulate an execution plan in more details and ally with other tobacco, tealeaf and traditional Chinese medicinal material purchasing companies to fully guarantee the market for farm products.

25. Construction of Yangling processing and raw materials base of nutrition-balancing functional foods (Yangling Sino-France Food Technologies Ltd.)

In this project, peasants will provide raw materials and the company will do deep processing. Nutrition-balancing foods are processed instant foods with the main material of black wheat, added with miscellaneous grain crops and nuts. For this new project, the market development by the company will determine its benefit.

Zaolin Village under Mazhao Town, Zhouzhi County, investigated by the SA Team is quite poor and the project is adapted to the local distinction. From the following case, we can see that villagers have a certain understanding of the project. As long as the company can make purchase at the protective price and ensure the technical guidance, peasants will participate extensively and gain economic benefits.

Case: Zhang Qiaoriong, female, 40 years, primary school education, dealing with farming, living at a 4-member family with 4mu land, including a 1.5mu kiwi fruit garden. The per mu wheat yield is 400 catty, the family can harvest 1000 catty wheat and 1250 catty corn a year. The wheat is completely for eating, the corn is used as forage. The climate conditions are just mediocre and there is less damage by disease and pest. Farm manure is used mainly. Fertilizer includes urea, compound fertilizer and nitrogenous fertilizer, used at 50 catty/mu, 60 catty/mu and 100 catty/mu respectively. The kiwi fruit garden yields 2000 catty fruits a year, at a price of 0.3 yuan/catty, cost of 600 yuan, profit of 100 yuan (excluding the labor cost). The family’s main source of finance is her husband’s bricklaying at surrounding villages, a yearly income of 2000 yuan. The main expenditure is the children’s educational expenses, 3000-4000 yuan a year. The daily household expenditure is 1200 yuan. No black wheat has been planted before, but she is willing to plant it, because she has heard that its yield is equivalent to the ordinary wheat but is higher in price. Whichever peasant knowing about black wheat would plant it. She plans to dedicate all the tilled land to black wheat. By now, the company has not entered into contract with the villagers. She knows little about the company but believes its credit is very high and is willing to enter into contract with the company. Her only worry is that the company will not purchase her products under the contract or lower the price. She expects the company to provide more technical guidance.

The SA Team thinks the company has to enter into agreement with individual peasants and do well in training and publicity.
26. **Yellow ginger deep processing** (Shanxi Yangling Huajie Biochemical Engineering Ltd.)

This project plans to construct a 1000mu yellow ginger planting demonstration base and a 20,000mu yellow ginger planting base in Yang County and Zhenba County—both key poor counties of the state. The company has negotiated and studied with the Hanzhong City Bureau of Agriculture and the Zhenba County Bureau of Agriculture, and determined to use the cooperative pattern of company + government + base + peasant. A purchase contract will be signed with the township agricultural offices in the two counties on a yearly basis to fix the quantity, quality and minimum price of yellow ginger, where the county government will witness the contracting process. The township agricultural offices will enter into the yellow ginger planting and purchase contract with peasants. This project will subsidize half the cost of yellow ginger seedlings for the 20,000mu planting base in Year 1. 110 agrotechnicians will be selected from the agrotechnical departments of both counties, so that every 50mu in the 1000mu yellow ginger planting demonstration base or every 100mu in the 20,000mu yellow ginger planting base will have one technician. These technicians will provide the full-course inquiry, service and technical training to peasants from the selection and supply of yellow ginger, rational planting, scientific fertilization, pest control to purchasing.

The SA Team thinks this project has to address several key issues: 1) in a county, the soil and climatic conditions vary greatly, a test has to be done in advance to ensure different climates and soil types can grow high-grade yellow ginger; 2) except that the township agricultural offices enter into a yellow ginger planting and purchase contract with peasants, the company can directly enter into a yellow ginger planting and purchase contract directly with peasants; and 3) the company shall well manage and train recruited agrotechnicians for better guidance to peasants.

27. **Construction of Baoji high-output cow embryo transplantation center** (Baoji Delikang Dairy Industrial Ltd.)

This project is a reconstruction project, the company has solid strength and has cooperated with peasants. In 2001, the company adopted the pattern of company + expert + peasant and the mode of milk station plus small zone feeding, where the company negotiates with the villager committee, the village and/or milk association offers site and sets up cowshed and milking hall, the company offers milking machinery, milk storage tank, refrigerator, boiler and milk carrier; the village and/or milk association is responsible for routine management, the company purchases fresh milk and give technical training, epidemic disease prevention and breeding together with experts. The milk quantity is recorded by the village and/or milk
association. The company enters into contract with the village or milk association for monthly settlement of the milk payment. In the contract, it is specifically stipulated that the company’s purchase price is higher than the market level by 0.20 yuan/kg. When the fresh milk market is saturated, the company will purchase peasants’ fresh milk at 105% of the production cost to protect peasants’ interests. The village or milk association will deduct the house rent, water and electricity charge from the milk payment paid by peasants. The milk payment is allocated to each family according to its output. By now, we’ve established or run 2 milk stations and raised 600 cows, involving 300 families, the per cow income of peasants is 1500 yuan higher than that in case of family-by-family feeding.

The SA Team has found through investigation at Sancha Village under Guodian Town and Tiehuangyuan Village under Nanzhihui Town, Fenxiang County that, the poor and women are highly active for the project. The planting industry of Tiehuangyuan Village relies on natural conditions and generates no profit. Both the villager committee and villagers think that it is impossible for them to become rich by developing the planting industry only and have asked forwardly the county government to develop the cow breeding industry at the village. With the county government’s help, they reached the intent of setting up a small cow zone at the village with Delikang Company in Feb 2002, planning that the villager committee inputs 200 mu land and above 200 families enter the area to accommodate above 1000 cows. The input in infrastructure for the small zone is mainly undertaken by the village committee, cows are bought by peasants themselves. The village will apply for prior loan from the township and county government at the credit line of several thousand yuan to 10,000 yuan per family. 30 families have borrowed the loan this year. The village will borrow 1million yuan for the small zone’s capital construction, which is to be repaid by deduction from peasants’ milk payment. The village head says that, richer peasants are willing to enter the small zone for cattle raising because they have the money for investment and payment for the management fee. Poorer ones are relatively harder to enter the small zone.

In undertaking the World Bank financed project, the company is prepared to focus its concern on the participation of poor peasants and women, and will provide them with convenience in the form of cow compensation with milk and exchange with materials for milk, etc, so that the poor can become rich by participating in the project. The SA Team thinks the key to this project is the participation of the poor by giving them financial aids, such as loan.

28.Construction of Fengxiang yellow ginger planting base and expanded saponin production line
(Fengxiang Tianyuan Plant Chemical Group Ltd.)

The project is a 60t saponin production expansion project, where the company does not have an existing planting base and plans to involve peasants in its business operations under the pattern of company +association + peasant. By developing the intermediary organization—
yellow ginger association, the association will connect the base (peasants) and the market (the company) to organize scattered peasants.

At the affected village, we found a yellow ginger association has been organized, 5-6 training courses have been given by Tianyuan Company, County Bureau of Science & Technology and the Agrotechnical Station at the peasant technical school. In 2003, the township-wide planting area is 5000mu. Peasants feel the greatest risk is heavy rain and drought, by now the village’s land is not covered by sprinkling irrigation yet. As for the market, peasants have entered into contract with the company, peasants are less worried about it. For example, Wei Yongtang, 53 years old, living in a 5-member family, began to plant 3mu yellow ginger in 2003, who has also got 2mu cornfield and 4mu wheat field. Before planting ginger, he had attended lectures for 3 times and had learnt some planting knowledge and techniques. In the future, he plans to plant yellow ginger on the cornfield, because the unit output and price of yellow ginger is higher and the company will be responsible for purchase.

The SA Team thinks this project’s social benefit depends on the quality of yellow ginger and the market for saponin—the product processed by the company. At present, the planting area of yellow ginger in Shanxi is very large and there are many existing similar projects. It is thus suggested that such projects enhance lateral cooperation and connections.

29. Cow breeding and liquid milk processing of Baoji County (Baoji Huimin Dairy Products Group Ltd.)

This project is an expansion project supported by a powerful company that has been in long term cooperation with peasants. With the loan, the company plans to build 3 production lines of French Berli bread and 1 liquid milk production line for roof bread to increase the annual capacity by 25,000t; the loan will support peasants to add 5000 cows, newly build 20 standard milking stations. A protective price will be applied to unified purchase and processing. And 15 technical service stations will be newly built or modified.

Yangjia Village under Tianwang Town, an affected village, is situated south of the Wei River, with 5 villager teams, 158 families and 624 people, 1420mu tilled land and currently over 180 cows. It is thought on the villager forum that the most needed for cow raising is technique and fund. The public prefer manual milking, afraid that mechanical milking would hurt the cows.

Case: Yang Guaiquan, male, 52 years, junior high school, 4-member family. I began to raise cattle since 1995. Before that, I lived on planting apple. It was with the money earned from apple planting that I bought the first head of cattle, which bore a calf the next year, later I bought 2 more. Last year, limited by the labor, I sold 2 heads. The annual income from the 4 heads of cattle was about 20,000 yuan. I have gained rich raising experiences and mastered sufficient knowledge from the lectures held. The land on which I formerly lived on is now growing our own grain only, our income completely relies on cattle raising. Now, I milk on 6:00am every day, then labor at the field. After lunch at
12:00 and at 9:00 pm, I would milk again. Most of my energy is spend on cow raising. The educational expenses for the children come from the earnings of cattle raising. Raising cattle is easier and much more profitable than planting apple. I have also insured the cows and won’t worry any longer. Cattle raising is less costly, the spending on a calf per day is about 3 yuan, the average milk output is 5 catty. The daily spending on an adult cow is 9 yuan, the average milk output is 45 catty. The protective price of per catty of milk is 0.62 yuan, therefore I will not suffer a loss. However, there is certain problem with the forage supply, because almost every family on the village raises cattle, alfalfa—key source of forage is under-supplied. Sometimes, we have to engage a tractor to haul alfalfa over a long distance. If not limited by labor force, I’ll surely raise several more heads of cattle. In this way, my income will be higher.

The SA Team thinks peasants have the desire to expend the scale of breeding but are short of fund and technique. We suggest providing a detailed financial aid program to the poor, set up technical service station to provide cattle raising families with comprehensive techniques on embryo transplantation, frozen semen and artificial fertilization, cow breeding, integrated epidemic control.

30. Construction of Shenguo cow breeding base
(Shanxi Province Shenguo Inc.)

This project is an expansion project, whose company, founded in 1987, is a state key leading enterprise for agricultural industrialization with solid strength and experience of cooperation with peasants. The operating mode of the pattern of “company + small zone + peasant” is: the company invests in a cow breeding zone, the public buy cows and enter the zone for breeding, the company provides a series of preferential policies (free site, free water and power supply, etc) to peasants entering the zone, introduces fine-breed cows and sells them to families at a preferential prices, provides milk producers with free breeding information, technical training, establishes cow files, supplies refined forage at the cost price for the purpose of encouraging and helping breeder families deal with cow breeding, improving the income of such families and stabilize the source of milk. Meanwhile, the company and breeder families have entered into a fresh milk purchase contract at the market price of fresh milk, which will be executed by each milk recovery station.

At Fanzhang Village under Sufang Town, there are 157 families, 750 people and 900 mu tilled land. The village’s amount of cows on hand is 650 heads, 5 heads per family on average. In 1994, the large-scale cow raising began at the village, now 95% peasants are now raising cow, the remaining peasants are not raising cow because they are either disabled or poor and live mainly on working outside. The income of cattle raising families is much higher. The raising zone in Shenguo is greatly supported by the government. The village would offer plots free of charge, set up a breeding station and a veterinary room. Any peasant with at least 3 cows may apply for entry into the zone.
The SA Team thinks the company must enter into a well-established purchase contract with peasants and ensure the technical support to peasants.

31. Construction of 10,000mu medicinal plant planting and improved variety breeding base (Shanxi Northern Technologies Industrial Ltd.)

This project is an expansion project, the company has been engaged in planting of medicinal materials since 1998. The focus of this project is the planting and marketing of isatis root and yellow ginger—traditional Chinese medicinal materials. By now, the company has signed 40 supply and marketing contracts with peasants.

The affected village—Longhu Village under Chewu Township—is the poorest village in the township, with above 200 families and above 800 people, a land area of above 3000mu, used mainly to grow crops, fruit trees, medicinal materials and forage grasses. There is 130mu field at the village for medicinal materials. In 1990s, skullcap root, bupleurum root, isatis root and yellow ginger were planted on a small scale. Several years ago, the isatis root sold well, for which peasants are very active. In 2002, the company began to explore this region by planting isatis root under a contract. The company offers technical guidance and a protective price of 2 yuan/kg. The income from 1mu isatis root is 700-800 yuan, the output ranges from 500 to 200 catty. Villagers think that dealing with medicinal materials and stockbreeding is better than working outside.

Cheng Lin, male, 31 years, 3-member family. His family has contracted 6mu field from the village collective and 7mu field at another village. In winter of 2002, his family grew 7mu yellow ginger at about 10 miles away from the village, which is taken care of by his relatives, so he seldom goes there for labor. He began to grow yellow ginger because: 1) purchasers from South Shanxi have come here to purchase yellow ginger; 2) the county agricultural and stockbreeding bureau has established a special yellow ginger planting team; and 3) there have been above 10 families at the village that have grown yellow ginger and gained a fairly good profit (700 yuan/mu). The profit of yellow ginger in this year is 1.5 yuan/catty (1.1 yuan last year), and the yellow ginger market is very stable. Seedlings for planting are mainly bought from local planters. He is very eager to participate in this project but he was absent from the villager congress held by the company, so he missed the chance. He says, the greatest worry of peasants is that what they have grown are badly sold, which can be just addressed by their cooperation with the company.

The SA Team thinks this project involves a wide range of the public, including women and extremely poor people. To achieve the expected social benefit, a pilot test must be performed on the local soil, climatic and other natural conditions before popularization on a large scale, the company must enter into a purchasing and technical guidance contract with peasants and give play to the driving effect of the association and major planters.
32. Construction of industrialized Qingchuan beef cattle breeding zone and beef cattle deep processing (Shanxi Yanyousi Inc.)

Shanxi Yanyousi Inc. was incorporated in 1996 and has now developed into a large joint stock enterprise integrating cooked food processing, deep processing of farm and sideline products, stockbreeding, fining processing of meat products and R&D. This expansion project plans to build 2 beef cattle breeding zones, which are closely related to peasants.

Yanwang Village, a typical poor village, features low degree of basin harnessing and poor eco environment. In 2001, Yanyousi Company fixed this village as a Qingchuan beef cattle base and entered into a cattle raising contract with 60 families to support cattle raising by peasants, followed by the industrialization of stockbreeding with focus on cattle raising. By now, there are 137 families, 239 heads of cattle at the village, cattle raising families account for 70% of all the families, the per capita cattle possession is 1.7 heads. The World Bank project plans to establish a Qingchuan beef cattle fattening zone here.

According to the sequencing made by villagers, cattle raising is a preferred choice for local villagers. Its economic benefit is better than working outside and farming, but it is less labor intensive, risky and time-consuming, especially for women, the poor and the elderly.

<table>
<thead>
<tr>
<th></th>
<th>Working outside</th>
<th>Stockbreeding</th>
<th>Farming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Money</td>
<td>2</td>
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<tr>
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<td>2</td>
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<tr>
<td>Tiredness</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Risk</td>
<td>2</td>
<td>3</td>
<td>1</td>
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</tbody>
</table>

Notes: 1-2-3 shows the order of degree from high to low.

According to villagers’ sequencing of problems faced by cattle raising, the problems are fund, capital construction (cowshed), forage technology and labor. By setting up a cattle raising zone locally, where the company inputs a greater part with the loan and the peasants input a small part, the fund and capital construction problems can be solved. It can be seen from the case below that the public are very active for cattle raising.

Case: Yang Mianmian, female, 33 years old, with a son and a daughter. Her husband works outside. There is 1mu sweet potato field at home, yielding 400 yuan a year, 4mu wheat field, yielding 100 yuan a year. She began to raise cattle since 2000 buying a head of cattle with the 1500 yuan borrowed from the credit cooperative. On the next year, she repaid the loan with the income from selling calves. Now the family has 4 heads of cattle, 3 cows and a bull. The cattle raising income ever since is 4000 yuan, the income in last year was 2000 yuan. Before cattle raising, she had attended a professional lecture. By now, the cattle has seldom suffered from any disease, nor has the cattle at the village. Cattle is generally sold to cattle dealers, a
A cow can be sold at 3,000-4,000 yuan, a bull can be sold at 2,000 yuan. The cattle raising is less costly, I have only to pay 2 yuan a day for concentrated feed on average, grass can be picked up on the hills. I hope to buy more cattle and raise 6 more heads with loan. In this way, I can save some money for my children’s future study.

The SA Team thinks this project is very good, the key is that company maintains its market advantage and purchases Qingchuan cattle at the protective price.

33. Xianyang New Sunlight farm and sideline products trading market (Xianyang New Sunlight Farm and Sideline products Ltd.)

This project plans to build a 400,000t large modern multi-functional trading center of farm and sideline products, integrating the wholesales, labor service, transport, brokering, message release, quality test of vegetables, fresh fruits, dry fruits and grains, with supporting facilities for storage, preservation, processing, transport and information service. The project is not directly related to peasants.

The SA Team thinks since this project builds a new market on the basis of the existing market in Xianyang, the risk is reduced. It suggests the company to define the market positioning and distinction and focus on high-grade farm products, such as organic vegetables, fruits.

34. Construction of high-output cow breeding base in Xianyang (Xianyang Jieda Industrial Ltd.)

This project is an expansion project, the company was founded in 1992 and began to deal with cow raising and develop a cow association in 1998. Now the company owns 1,800 cows, the project plans to build cow stations at Longzao Village and Yaxiao Village for centralized milking, recovery and forage formulation. The milk will be sold to Shanghai Bright Dairy Industrial Company at 1.7 yuan/kg. The company and cow association have entered into an agreement, the association and peasants have also entered into a contract. After completion of the base, there will be 5,000 cows.

In constructing the breeding zone, the company is responsible for the civil works, equipment installation, embryo transplantation and technical services. A zone will be provided with 4 personnel and a car. A hotline will be opened to solve problems for peasants.

Through the interview with peasants, the SA Team found the villagers are interested in cow raising.
Zhao Zonghai, male, 43 years, at Xiada Village, 4-member family, 2 children, all studying at junior high school. His family has 7mu land, mainly growing corn and wheat. He began to raise chicken in 2001 to sell eggs. If conditions permit, such as offering cattle, breeding and settling the milk product purchase problem, he wants to raise cow.

The SA Team thinks the key to the project is to guarantee the quality of milk products and the establishment of a long-term cooperative relationship between the company with the milk purchaser.

35. Construction of ecological sheep herding demonstration base in Yaochuan District, Tongchuan (Jinsheng Ecological Agriculture Demonstration Base)

This project is a modification and expansion project, ready to take on the form of combining the breeding demonstration yard with demonstration families to construct a mutton sheep ecological breeding base with a stock of 200,000 heads, in order to bring along the mutton production by peasants in Xiaoqiu, Zhaojin, Guanzhuang Towns in Yaozhou District, and realize a per capita stock of 3.5 heads.

At Sipo Village under Xiaoqiu Town in Yaozhou District, an affected village, there are 180 families, 685 people, 2915mu tilled land, 2400mu hilly land and 3000mu barren slope. There were formerly above 100 sheep raising families, now 11 more families have been developed. Generally, women spend more time than men in raising sheep.

Yang XX, female, 40 years, a 5-member family, raising 14 pigs (net income of one pig is 50 yuan). She works at the ecological park at the daily pay of above 10 yuan. Her family raises 18 female goats and 2 rams, which have been bought with the 6000 yuan loan from the credit cooperative. The company offers artificial fertilization for ewes at the end of Sep, which can bear 30 lambs a year. The company would recover 60% sheep, the remaining 40% would be sold to other peasants. The sheep is fed in the pen and fattening quickly, the company would provide veterinarian. The criteria of major families are good base, high credit and diligence. The company would cover insurance for major families, the association charges 0.5%-1% of the net income from each head of sheep to establish a risk fund. Extremely poor families are brought along by free breeding, poor families are brought along by financial aid and rich ones are brought along by service.

The SA Team thinks women and the elderly are the main body of Boer goat raising and the company should respect women’s will when contracting with peasants. The technical service system should be perfected, for poor peasants with the idea of sheep raising, the company has already considered the practice of free breeding for them. It is suggested to pay attention to the technical guidance and training to extremely poor families.
36. Modern nursery stock breeding base in Yintai District, Tongchuan (Tongchuan Zhouling Agro-tech Development Ltd.)

This project is an expansion project, planning to construct a modern nursery stock breeding base and greenhouses. High-quality seedlings of vegetables and flowers will be produced, which will be partially offered to peasants in a compensated manner and partially launched on the market directly. The useful area of a greenhouse for benefited peasants will be 330m², to be build by the company in a unified manner. After completion, the ownership will belong to peasants, who will produce finished vegetable and flower products using high-grade seedlings provided by the company. The company will provide market information and introduce new customers to peasants to help them sell their products. The company will invite experts from the Horticultural Academy in the Northwest University of Agricultural & Forestry Science & Technology to give agro-tech training on benefited peasants.

At Aobei Village under Wangshiao Town, there are 126 families, 547 people, a total tilled area of 937mu and 300mu cultivated land returned into forest. The villagers have the tradition of growing vegetables and have been thinking of dealing with greenhouse vegetables. However, the problem of fund shortage has not been solved yet. Now there is a vegetable planted area of about 120mu, but the profit of field planting is not high.

Case: Wang Qiuling, female, 4-member family, with 4-5mu land, 2mu for vegetable planting. In 2003, the land is mainly used to grow bean, cucumber, pepper, tomato, potato, eggplant, etc. The vegetable market is mainly the surrounding mining area. Since it was cold when the bean bloomed this year, the yield was very low. The gross income of vegetables in 2002 was 2700-2800 yuan and the net income 2000 yuan, setting a new record. She hopes to grow anti-season vegetables in greenhouse, which will be much higher in price.

The SA Team thinks the company should address the market for nursery stock and vegetables, it should not only introduce customers to affected families, but also purchase their products at the protective price under the contract and guarantee the technical guidance.

37. Baishui County nuisance-free apple production and marketing technical demonstration zone (Baishui County Hongda Buildings & Fruits Ltd.)

This project is a new project, the company’s business scope covers the purchase, marketing, storage of dry/fresh fruits, production and marketing of cartons and fruit bags, house building, etc. The project’s part in relation to peasants is the modification of a 5000mu nuisance-free
apple base and newly build a 500mu nuisance-free apple demonstration park to solve the problem of serious disengagement between production and distribution.

Fenglei Village is 6km from Baishui County, with a total cultivated area of 7160mu, 5500mu orchards. Now there is 580mu nuisance-free orchard and 100mu nursery. It is estimated that the area of nuisance-free apple will be 800mu. 135 families at the village have participated in the project by means of voluntary sign-up on a village meeting. The company arranges for the technical guidance in a unified manner, conducts nuisance-free technical management and set up a production & marketing federation in May 2003 for unified purchase of products. Market is thought by the villagers to be the greatest problem. Fruit peasants are less informed.

The villagers think their involvement in the project mainly appears as the meticulous control over apple. After their participation in the project, the apple quality and grade have been much improved, the price is higher than ordinary varieties without fluctuation year by year. It would be suitable for one peasant to manage 3mu apple field. The red Fuji apple is managed in a corporate mode, the gross income on 1mu field was at most 1500 yuan/year.

The SA Team interviewed Wang Jianli who has not taken part in the project, learning the project’s information and villagers’ thirst for becoming rich from a perspective.

Wang Jianli, female, 35 years, has not participated in the project. Her 4-member family has 3mu land, all planted with apple, including 3 varieties—Qinguan, red Fuji and Huangshuai, 1mu each. She says her apple was first planted in 1993 and the varieties are quite outdated. She has not grafted any new variety because she thinks the effect will not be ideal on these old trees. These 3 varieties would vary in output from year to year. She says she is very eager to upgrade the apple variety but there is no more land at home for replacement. She thinks the project sounds good and will participate in it if there is a chance. However, the nuisance-free apple demonstration base requires a large land area and her family’s land is just out of the massive land, so she is unable to participate. She says, there are several benefits from taking part in the project: 1) apple will be purchased by the company; 2) the apple is good in quality and will sell at a high price; 3) the apple nursery stock for affected peasants is good, all pure red Fuji and Qinguan varieties, the output fluctuation will not be so large as now. Since she has not participated in the project, she has also not attended the apple production & marketing federation. However, she would occasionally listen to the technical training organized by the federation.

The SA Team thinks this project has combined the local industrial advantages and distinctions quite well. At present, the villagers have a good understanding of the project and sufficient experiences in apple production. It will be easier to popularize the production techniques for nuisance-free apple, which will contribute to the project’ social benefit.
38. Construction of commercial beef cattle production base in Chengcheng County (Shanxi Chengcheng Qinmu Breeding Ltd.)

This project is an expansion project, the part directly related to peasants is the construction of an ecological beef cattle breeding demonstration base to support 3000 peasants, as well as the establishment and perfection of the technical service system. The company is also prepared to set up an improved beef cattle breeding center to introduce 800 heads of improved Qingchuan cattle; set up a commercial beef cattle fattening yard to increase the annual released amount of high-grade beef cattle to 675 heads. The beef cattle will be sold to Hong Kong, Beijing and other parts of the province.

Since 2002, Linjialing Village has developed Qingchuan beef cattle breeding in cooperation with the company. At present, 78 out of 152 families are raising 90 heads of cattle under the leadership of the cattle raising association with technical guidance provided by the company. Peasants may raise cattle with a peace of mind without worrying about the market, because the cattle will be purchased by the company at the protective price. The selection criteria for affected families are relatively poor household financial standing, with labor force and being diligent, practical, trustworthy and zealous for breeding. By now, the company has provided a loan to 3 extremely poor families at the village. The cost will be deducted from the purchase price paid by the company.

Case: Cao Huixian, female, 41 years, 4-member family. A son is working in Xian, another son studying at the town junior high school. There is 12mu land at home, growing 4mu melon, 4mu maize, 2mu apple tree and 4mu wheat. The income from wheat this year is 200 yuan and the income from apple is 8000 yuan. At the beginning of this year, she borrowed 3000 yuan from the company and bought a bull on the bazaar. Before cattle raising, she had attended the lecture twice. The cattle can eat 20 catty straw and 5 catty concentrated feed, drink about 50 catty water. The cattle is fed twice a day at 12:00 in the noon and 8:00 at night. In addition, 5 chickens have been raised, all eaten by the family. The loan will be repaid in 4 years but there is no interest. Accordingly, she wants to buy 5 heads of cattle with a further loan. When there is money, she will drill a well, thus, the cattle raising cost will be reduced. The key difficulties are fund and technique.

Through investigation, the SA Team found there are many poor people at the village, about 50 families cannot afford to buy calves. Except for extremely poor ones, it is suggested that the project extend small-amount grants to poor families, so that they will afford to raise cattle, at the same time, there should be technical service personnel at the affected village for training of peasants.
39. Pucheng County nuisance-free winter date planting base (Pucheng County Jinling Forests & Fruits Ltd.)

This project is an expansion project, the part directly relating to peasants is the construction of a 333ha nuisance-free demonstration base and appropriate water conservation and irrigation facilities; providing 55 seedlings, organic fertilizer and biological pesticide to peasants; also perfecting the technical training and service system; the company will also construct a winter date sorting and packaging workshop, test center, an air-conditioned winter date warehouse. In Apr 2000, the company constructed a 1000mu winter date base in the pattern of company + peasant, where a small part of trees have borne fruits and are growing well.

Xujia Village under Tianshui Township in Pucheng County has 356 families, 1409 people, 660 women laborers, 2970mu tilled land, 1470mu cash crops, including 1000mu winter date. The town government entered into a winter date contract with the company in Apr 2002. By investigation outside, it was known that winter date is profitable, the villagers then plowed the wheat field and planted winter date voluntarily. A greater part of the village is alkaline land, winter date is highly resistant to alkali. The village plans to develop winter date as a pillar industry.

On the women’s forum, women talked freely about the winter date management: soil tillage, fertilization, pruning, budding, watering before and after blooming and spraying stimulin. It is quite busy before bearing fruit in spring. After that, management is relatively easier, when the resistance to pest and disease is high. The women think the labor intensity is not high and the benefit from planting winter date is small investment, quick effect and easy management.

The SA Team thinks with the increase of the planted area of winter date, there might be great fluctuations on the market, the company has to fully provide for this. Especially when market prices are unstable, the company will purchase peasants’ products at the protective price to protect their interests.

40. Prevention and auxiliary treatment of hepatitis B and multivalent specific immune milk for hepatitis C (Xian Oriental Dairy Products Factory)

This project is an expansion project, ready to construct an immune cow breeding base. The factory will purchase cows, construct infrastructure and provide relevant technical services along with peasants, which is directly related to peasants. Meanwhile, the company will also construct an immune milk production line.
Lijia Village under Xinhe Town, Baqiao District has 610 families and over 3000 people. Since 1980s, people here began to raise cow. A calf is worth 7000 yuan and a head of adult cattle 15,000-17,000, which is unaffordable for many peasants. The 200 families raise 500 cows, 2.5 heads a family on average. Since Oriental Dairy Products Factory is near as a convenient condition, it has entered into contract with peasants. Cow has become the village’s key source of income.

Villagers think that the immune multifunctional milk is good to body building and marketable. Cows are injected with immunoglobulin in winter once a year to guarantee the milk quality. The milk purchase price is 1 yuan/catty. One cow generates 20,000 catty milk a year for a net profit of 5000-6000 yuan, equivalent to that of a greenhouse. Villagers expect better services, such as medical treatment, which is provided by technicians. This village is a farming village where agriculture is unprofitable and there is no secondary or tertiary industry. Now those advocating cattle raising are mainly young men aged 30-40 years.

The SA Team thinks for health foods such as milk, if the value of immunity or drug treatment is added, the acceptability by the public will be lowered. Meanwhile, this project hands the product without fully clinically tested to peasants for execution, which is somewhat risky.

41. Construction of Boer goat hi-tech breeding demonstration park (Shanxi Hengye Agricultural development Ltd.)

This project is an expansion project, the company is prepared to build 2 demonstration parks for stable breeding of the core population of Boer goat; construct 3 demonstration zones for stable breeding of acceptor sheep on a scale of 2500 heads. The company has cooperated with peasants. Peasants’ saying “3 heads of improved sheep at home is a guarantee to the income” reflects the activity of peasants in raising sheep.

At Shanhu Village under Lantian County, it is prepared to construct a demonstration stable feeding zone at the cost of 12 million yuan to attract 200 peasants, each contributing 5 heads of sheep and 36 labor units a year. A laborer can manage 50 heads of sheep. Hengye Company will make transplantation on the core sheep population for 3 consecutive years. With 70-80 original strain rams, the company plans to set up 3 breeding stations for hybridization and artificial improvement of indigenous sheep. The villager committee shall recommend poor families to the company, a raising sheep association has been founded at the village, involving 200 families at first. The company shall provide technical training, immune system, unified management and forage formulation to peasants. On the villager forum, the attendees highly welcome the project.

Accordingly to the sequencing made by villagers, Boer goat raising ranks first in come, 4th in labor intensity and 5th in time consumption and risk.
Villagers think the difficulties in raising Boer goat include shortage of sheepfold, fund and technique. The project will address these 3 problems quite well.

The SA Team thinks this project is suitable for the local conditions and will create great social benefits, involve a wide range of peasants. It suggests the company design a detailed training program and provide systematic training to peasants to let them master the sheep raising skills comprehensively.

42. Nuisance-free strawberry planting and deep processing (Xian Gaoqiang Vegetable Foods Ltd.)

This project is an expansion project, the company will conduct deep processing on strawberry. The part directly related to peasants is to construct a 200mu demonstration nursery for test of introduced strawberry varieties; construct a 1400mu nuisance-free strawberry production base; reconstruct the workshop and refrigerated warehouse; introducing 2 strawberry processing and production lines. The company has entered into production and marketing contract with peasants, where peasants will deal with the strawberry planting and production, the scientific research units shall perform variety screening tests, production demonstration, and technical training and guidance to fruit farmers on large-scale strawberry production, the company will purchase their fruit products and produce 160t freeze dried foods annually with the 2 newly set up automatic freeze drying production line. The key products developed previously by the company are “Qinshu” series of dehydrated fruit and vegetable flavorings. The company has its own raw materials production base of 2000mu.

According to the sequencing made by villagers of Gaoqiang Village, the strawberry planting is the most profitable but less risky and costly. The following case further indicates villagers have got certain experiences.

<table>
<thead>
<tr>
<th>Working outside</th>
<th>Raising Boer goat</th>
<th>Growing grain</th>
<th>Raising Qingchuan cattle</th>
<th>Fruit trees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Labor intensity</td>
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<td>Labor time</td>
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<td>1</td>
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<tr>
<td>Risk</td>
<td>4</td>
<td>5</td>
<td>1</td>
<td>3</td>
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Notes: 1-2-3-4-5 indicates the order of degree.
Notes: 1-2-3-4-5-6-7 indicates the order of degree.

Case: Li XX, female, 28 years, has planted strawberry for 3 years at a per mu yield of 2000 catty (0.75 yuan/catty). The labor on strawberry is mainly undertaken by women. Composite farm manure is mainly used for fertilization. Strawberry planted in a greenhouse is harvested in Aug and that planted in open air is harvested in Apr. The pollination during the blooming period is made naturally. Since there are less diseases, the income is quite stable.

The SA Team thinks this project is very distinctive. The key to it is to rely on the company’s market development and peasants’ mastery of the nuisance-free strawberry planting skills. It is suggested that the company communicate more frequently with areas where there is a long history of strawberry planting and processing, such as Zhejiang, and establish its own team of technicians backed by the technical support units.

43.Construction of organic kiwi fruit industrialization demonstration base in Shanxi (Qinmei Modern Agricultural Ltd. under Xian Jiaotong University)

This project is an expansion and modification project, the company will construct a 2000mu kiwi fruit demonstration park; popularize kiwi fruit cultivation techniques to 50000 peasants; establish a kiwi fruit production, supply and marketing service system; and also to expand the kiwi fruit processing and production line. This company has gained much experience in kiwi fruit cultivation and processing, and has long-term cooperation with peasants.

Zhouyi Village has planted 2500mu kiwi fruit. Villager Zhao Zhiliu began planting in 1987 and was then the first planter of the county, has developed his planting area from 2mu to 10mu now. According to the villager’s sequencing, the villagers think kiwi fruit is less hard but the most profitable.

<table>
<thead>
<tr>
<th></th>
<th>Kiwi fruit</th>
<th>Miscellaneous fruits</th>
<th>Working outside</th>
<th>Cattle raising</th>
<th>Raisin sheep</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Labor intensity</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>5</td>
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</table>

Notes: 1-2-3-4-5- indicates the order of degree.

It can be seen from the year-round production of kiwi fruit that, villagers have a mastery of the kiwi fruit techniques. Jan: winter pruning; Jan-Feb before germination, applying the base fertilizer; turning up the soil; Feb: spraying pesticide, lime sulfur mixture; Mar in germination, tree grafting, variety updating, top grafting; Apr when trees have grown up, continue with top grafting, weeding; May: artificial pollination, taking key actions; Jun: irrigation and applying pesticide, generally with low-concentration efficient organic bactericide and insecticide for once or twice, controlled by the association; Jul: summer
pruning, adding lighting, applying pesticide, watering; Aug: applying pesticide once, bactericide and insecticide; Sep: premature fruits may be sold; Oct: collection, a contract was signed with Qinmei in 2002, all fruits will purchased by Qinmei; Nov: rest; the workload of winter pruning is heavy. Under the standard condition, one man can manage 3mu field.

Villagers say that the organic technique is not hard to learn. Before liberation, there was no hormone, all fertilizer pesticides were organic products.

Wang Shuiqin, female, 38 years, living at a 5-member family. She began to plant kiwi fruit as early as in 1991. However, the kiwi fruit trees died in 1993. In 1994, she planted them again. In 1996, she planted 6mu kiwi fruit trees in total. The kiwi fruit planted in 1991 earned 8000 yuan. But it was not so profitable later. To plant kiwi fruit, you have to input 60 seedling per mu, if the cost for iron wires and poles are included, the total cost would be 2000 yuan. After the one-off input, it is necessary to partly renovate the field, which would cost little money. In 1992, the per mu yield was 5000 catty ad per mu income was 17500 yuan, equivalent to a net profit of 15500 yuan. Afterwards, the kiwi fruit price dropped continuously to the lowest level of 0.6 yuan/catty. Since 1999, no bulking agent was applied, the per mu yield became 4000 catty at the unit price of 1.5 yuan/catty. The income in last year was 15,000 yuan, the per mu yield was above 3000 catty. In comparison, kiwi fruit without the bulking agent is lower in unit yield but is stable in price and marketable, generating higher net income. In Sep 2002, I contracted with the company, which stipulated a protective price for purchase. After that, I attended 3 lectures and thought it useful. Upon contracting, I got the subsidy of 50 yuan per mu, so I’m not willing to apply the bulking agent. I’m very glad to contract with the company, which has helped me solve a lot of problems.

The SA Team thinks this project has well utilized the local advantages, facilitated villagers’ participation and generated more social benefits. The key to the success of this project is the market development and occupation by the company.

44. Milk ewe breeding and product processing project in Fuping County (Shanxi Hongxing Dairy Industry Ltd.)

This project is an expansion project, the company prepares to construct 10 fine breed milk ewe breeding bases; support 1000 milk ewe breeder families; build 10 mechanized milking stations; build a 1000m² freeze drying station, a freeze drying production line and two 100t refrigerated warehouses.

Wuxin Village has above 240 families and above 1200 people, 1100mu tilled land. There has been the tradition of sheep herding at the village. Now each family raise 3-4 heads of sheep on average. A head of sheep can bring annual income of about 800 yuan. After the Reform and Opening, every family at the village has raised sheep, formerly the indigenous sheep and
improved breeds after 1983. The villagers pay high attention to sheep and would replace with new breeds every year. Now new breeds are provided by the County Milk Ewe Production Management Office, breeding sheep is identified by the Office, which also sets up milk ewe files to improve the sheep quality.

Villagers say that the village notified them this year that Hongxing Company will establish a milk ewe breeding base here under the mode of company + peasant, where the company will provide quality services, quarantine, technical guidance, set up purchase points at the village, conduct unified purchase. After completion of the milking station, the company will perform unified milking to improve the quality. This village has a small breeding zone with 500 heads of sheep, any peasant with above 20 heads of sheep may apply for entry into the zone, besides, the minimum protective price of 1.1 yuan/kg will be applied on peasants, which is welcome by the public. We can also see peasants’ activity from the case below.

Case: Meng Yinling, female, 32 years, living at a 5-member family with 8mu tilled land and 4 milk ewes and a cow. The annual tuition of the child is above 300 yuan, the agricultural tax is 270 yuan a year. An ewe bears 2 lambs a year on average. A male lamb is worth over 30 yuan and raising it would cost 70-80 yuan a month; a female lamb is borne in winter and may be bred in the next spring. An ewe generally generates milk for 6 or more months, above 7 catty a day. An ewe is fed 3 times and milked once-twice a day. The milk price is 0.55 yuan/catty, an ewe can earn 7, 800 yuan a year. The forage is mainly grass, which is not costly. Compared to cattle raising, sheep raising is less costly and risky. The return period is shorter, the sheep is easier to raise and the forage cost is less.

The SA Team thinks since the affected village has traditional breeding experiences, raising sheep is less costly and risky but quick acting and easy for participation. It hopes the project design provide lambs to those unable to afford and perfect the technical service center for the guidance on epidemic control.

45. β-cyclodextrin propyl ether industrial production project (Shanxi Aloe Pharmaceutical Ltd.)

This project prepares to construct a β-cyclodextrin propyl ether industrialized production line, which is not directly connected to peasants. The company will purchase corn to manufacture β-cyclodextrin propyl ether.

The SA Team thinks the key to this project is the technical leadership and the development of the new product market.
46. Detoxified seedling fast breeding and production demonstration base for quality fruit trees (Xian Wentian Eco-agriculture Ltd.)

This project prepares to construct a cultivation and quick breeding center of detoxified fruit tree seedlings; a 300ha efficient cultivation demonstration base. The company has established a detoxified fruit tree seedling quick breeding center in Xinglong Township under Changan District in the south suburb of Xian in 2001.

Mapo Village under Yehu Town in Lantian County has above 2000 people, a cultivated area of 1420mu, where the villagers live mainly on wheat and corns and a part of villagers work outside. The village has tried to plant melon, onion and potato but failed. In Mar 2003, the company planted winter date here, for which the villagers were highly active. The company provided 5 winter date saplings, planted 300mu, the company has entered into agreement with the town government to construct a 100mu demonstration base at the village under the pattern of the company + base + peasant and provide the protective price to peasants. Now, the winter date survival rate at the village is as low as 40%-50% for many reasons, including the poor irrigation conditions and climate. The company has held 3 sessions of training courses at the village. The winter date began to bear fruits in Year 2, entered the production period in Year 3 and the high-yield period in Year 4.

Luo Zhizhong, male, 75 years, has 5 sons, but live a hard life. Every son contributes 5 yuan or grain of the equivalent value to him every month. In addition, the state give him a subsidy of about 600 yuan a year, 70 yuan/month on average. Now he lives in a dilapidated cave and has nothing valuable except a radio-receiver recorder. He thinks there are advantaged conditions at the village for planting winter date, such as good soil layer and much labor. The key is to find a suitable project under proper guidance; besides, technique and market are also crucial. Old as he is, he has an open mind and is making publicity at the village, persuading his sons to plant winter date. When his sons become rich, he will lead a better life. Although he might not certainly experience a well-off life personally, he hopes and believes that the villagers will lead a happy life earlier.

The SA Team thinks this project is suitable for the local conditions and suggests that after the formal commencement of the project, the company should sign a contract with every peasant and purchase their winter date at the protective price.
This project plans to build a Qingchuan cattle breeding population, frozen semen and embryo production line. The company, founded in 1998, now owns 300 basic core Qingchuan cows and 40 imported fine-breed bulls. It has developed 12 Qingchuan cattle breeding bases, where there are 4500 heads of cattle in stock. The company has had wide cooperation with peasants.

Wanyangsen Village has 721 families, 2982 people and rich forage grass resources. In spring of 2002, large-scale breeding began and 40% families began to raise cattle, the total mount of Qingchuan cattle was nearly 900 heads. The Phase I construction of the village’s cattle raising zone has been completed at the cost of above 500,000 yuan, accommodating the first batch of 20 families. There is 30mu land for Phase I, 20mu as the construction site and 10mu for a trading market. The cattle is bought from Wuyan Company, which has offered some chopping and feeding tools. The company is prepared to support 2 absolutely poor peasants in Team 9 by offering breeding cattle. The villagers think cattle raising in the zone is a guarantee of high quality and fast growth. Technical services are available from the company all the year round, including quarantine, epidemic prevention, training, forage grass processing. The after-sales service is very good, saving the worry of peasants.

The villagers it is more profitable to raise cattle in rural areas. Phase II will be mainly aimed at peasants without basic conditions. Brought along by the zone and cattle raising association, peasants are more skillful in cattle raising. By 2005, the amount of cattle at the village will be raised to 2000 heads. The key restraint on scale enlargement is fund shortage.

The SA Team thinks this project involves a wide range of peasants and is highly beneficial. However, peasants would invest heavily in cattle raising. It’s suggested that the project should provide a range of feasible manners of participation for different economic kinds of peasants. The company and the zone should also provide training to individual peasants on standard breeding procedure, source of forage, follow-up, monitoring of excrement, epidemic control and medical treatment.
III. Existing Pattern and Problems Therein

Throughout the province, all the projects in direct relation with peasants take on the mode of cooperation and operation of “company + peasant”. Meanwhile, each project has selected a necessary combination of company, government, technician, association, base and peasant according to its distinction and the local conditions, in which the government and association play the coordinating, supervising and brokering role. A villager committee is an autonomous nongovernmental organization and is included in the broad government. An association is a nongovernmental organization composed mainly of major specialized raisers, planters under the leadership of the villager committee. The base is related to the whole industrialization process.

This pattern has also some problems:

1) Trust cost problem between peasants and company. Whether the company or peasants, as long as one party breaches the commitment or contract, the whole cooperation will be faced with a certain risk and might prejudice the interest of one party. For example, the contract stipulates that farm products are purchased at the protective price, but when the market price is higher than the protective price, peasants may elect not to sell products to the company; when the market price is much less than the protective price, the company might also breach the contract. Therefore, the contractual spirit and trust between both parties are very important.

2) Peasants are on a asymmetrically-informed and relatively disadvantaged position when cooperating with the company, so that they are more vulnerable to the company’s control, e.g., the company holds down the purchasing price and fails to pay on time. Once any dispute arises, peasants, organized in families, can hardly contend with the company.

3) Since a buyer market for farm products has emerged in China, many hi-tech/high quality products of peasants may meet with low profits. When peasants are in cooperation with the company, even if they have entered into contract, but if the company is faced with a serious risk, peasants’ interests will not be guaranteed.

4) The involvement of technical support units is a useful trial, which is good to the technical popularization. However, if such units fail to obey the contract (mostly flexible) strictly, or the running-in among the company, technical support units and peasants is inadequate, the operating costs will likely to increase. For some easily-popularized techniques, it is suggested to determine the technical support unit by bidding.

5) In the project design, if the government is over-involved, there might be the feature of administrative order, which might lead to passive participation and blind following of peasants.

6) It is shown by investigation that an association consists mainly of affected peasants and its role mainly appears as coordination and contracting with the company on behalf of peasants, participation in technical services and assisting the company in purchasing
products. The SA Team thinks the role of an association is positioned as a bridge and interest connector between the company and peasants.

7) In the company + peasant operation, peasants would make choices under certain criteria, such as centralized planting, certain scale of breeding at a breeding zone. This naturally has excluded some peasants from the project. It is suggested for lands that cannot be linked up or breeding families that cannot enter the zone, the company may provide associated technical services.

At present, in the province-wide projects, the government is at the key organizing position. We think the government is very important in the preliminary stage of a project. In the future, when a project is successfully operating, the government may exit gradually. The association will then be established and supported and the project will be dominated by the enterprise + association + peasant, where the association will become the intermediary in place of the government. Whether the government or association is included, the company should enter into contract with peasants directly.

IV. Attitudes of Provincial Project Officials Towards the Project

The Shanxi project is focused on the demonstration and popularization of agricultural hi-tech achievements to quicken the implementation of the “one line and 2 belts” strategy in Shanxi. The projects have reliable technical support and realized the rural industrial development pattern of enterprise + peasant + technique. The project construction will well facilitate the conversion of agro-tech achievements, increase peasants’ income and improve the integrated agricultural benefit. The project objectives include: 1) increase the conversion efficiency and speed of agricultural hi-tech popularization, speed up the popularization of fine varieties, high and advanced practical techniques, improve the contribution of agro-tech to economic growth; 2) speed up the updating of practical agro-tech in adaptation to the agricultural modernization; 3) cultivate regional distinctive pillar industries, optimize the agricultural production structure within the affected areas, improve the overall economic benefits of agriculture; 4) promote the optimum configuration of agricultural resources within the affected areas and the effective of rural surplus labor, increase peasants’ income; and 5) construct a number of leader enterprises and bases with scientific achievement demonstration and popularization effect.

On the provincial project office forum, the project officials think the province-wide projects have the following advantages:

1) Combination of the direction and goal of the provincial agricultural restructuring;
2) Accordance with the advantage and distinction of Shanxi as a major agricultural province, giving play to the resource advantages;
3) Highlighting the advantages of the combination of agricultural production, learning and research and technological popularization;
4) Fully bringing along peasants based on the operational advantage of company + peasant;
5) Cultivated a number of leader enterprises and famous brands.

V. Attitudes of SA Team Towards the Project

The SA Team thinks that generally, the Shanxi project has made full use of the local resources and advantages, mobilized the resources of this major agricultural province utilized technical demonstration and popularization, increased the product added value, raised the agricultural benefit, which represents a direction of China’s future agricultural development. The project has given full play to the power of entrepreneurs in design for considerations of cost, benefit and market gap, making the project more mature. Although the government is not directly involved, it is giving full support and guidance, its recognition of the project has facilitated the project execution and its coordination with enterprises and peasants. The beneficiaries’ interests have been fully regarded to cover peasants and poor population as much as possible as a direct contributing factor to the solution of the 3 peasant-related problems. Under the company + peasant pattern, different forces have participated jointly for integration.

It is suggested that: 1) the provincial project office play its part by organizing a combined fleet, first to organize loose leagues in a same industry, such as fruit industry, dairy industry, etc, then to construct an industrial chain, in which an industry drives associated industries into a chain, such as a complementary industrial chain of forage production, base construction and stockbreeding; 2) the project companies shall strengthen the market research and development, especially for some deep-processing enterprises and those having not established their own market system; 3) conceptually, to jump out of a local region, whether in selection of a base, an enterprise or a technical support unit. Broaden the eyeshot to select, introduce enterprises and technical support units in a nationwide background. For example, for food processing, coastal enterprises are more mature, it would be good to future expansion to collaborate with coastal areas in developing new marketing and exporting products; 4) to future publicize our own distinctions, especially the advantages as a major agricultural province; and 5) to create famous brands and avoid the repetition of minor brands. Dairy products and fruits are the most advantageous products locally, but Shanxi has not a unified brand of its own, so it must create a nationwide brand.

For specific projects, the SA Team thinks the production of bio-degraded starch resin, β-cyclodextrin propyl ether, prevention and auxiliary treatment of hepatitis B and multivalent specific immune milk for hepatitis C are technological projects, the scientific achievements of the latter 2 projects have not been patented and are in the pilot-test stage, which should be launched cautious.