Edited by Ronnie Vernooy, Sun Qiu and Xu Jianchu

VOICES FOR CHANGE

Participatory Monitoring and Evaluation in China

Yunnan Science & Technology Press
International Development Research Centre

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Yunnan Science & Technology Press
• Kunming •
International Development Research Centre
Ottawa•Cairo•Dakar•Montevideo•Nairobi•New Delhi•Singapore

Published in China by the Yunnan Science and Technology Press

Fl. 22-23,Yunnan Press & Publishing Building, No.609 Huancheng Xilu, Kunming, Yunnan, P. R. China.
Post Code: 650034

National Version Library of China CIP Data Reg. No. (2002) 062677

Voices for Change : Participatory Monitoring and Evaluation in China / R. Vernooy (Canada), Sun Qiu, Xu Jianchu. —— Kunming: Yunnan Science and Technology Press, March 2003

ISBN 7-5416-1719-9

I. Change... II. ① Vernooy...② Sun...③ Xu... III. ① Participatory rural appraisal – China, Southwest. ②Participatory monitoring and evaluation (Project management) – China, Southwest. ③ Rural development project – China, Southwest – Evaluation. ④ Community development – China, Southwest.

IV. F127.7-53

Published in North America and Europe by the International Development Research Centre

PO Box 8500, Ottawa, ON, Canada KIG 3H9

www.idrc.ca

National Library of Canada cataloguing in publication data

Main entry under title :

Voices for Change : Participatory Monitoring and Evaluation in China

Co-publ. by Yunnan Science and Technology Press (China)

Includes bibliographical references.

ISBN 0-88936-994-1

1. Participatory rural appraisal – China, Southwest. 2. Participatory monitoring and evaluation(Project management) -- China, Southwest. 3. Rural development project – China, Southwest – Evaluation. 4. Community development -- China, Southwest.

I. Vernooy, Ronnie. II. Sun, Qiu. III. Xu, Jianchu. IV. International Development Research Centre (Canada)

HC430.E44B52 2002 307.1'412'09513 C2002-980236-9

Editor – in – Charge : Li Hong, Zhang Jing (Special)

Cover Layout : Yang Jun

Manufacture Supervisor : Zhai Yuan

1st Edition March 2003, 1st Printing 1—2000 copies March 2003

Printed at Yunnan Dikuang Printing House

Distributed by the Xinhua Bookstore Nationwide

Prince in P. R. China: ¥120.00

Contents

Figures

Tables

3. "We help them, they help us": experience in Yunnan

The lively interactions about the meaning of the core PM&E concepts and questions and the active participation in the training method and process described in the previous chapters allowed the KIB and GAAS teams to apply key PM&E concepts in the field and to experiment with various tools. In this and the following two chapters, we describe and reflect on how this was done. This chapter details the KIB experience and how PM&E was slowly, but progressively integrated into the "People and Resource Dynamics in Mountainous Watersheds" project (PARDYP) in Yunnan. Chapters 4 and 5 are dedicated to the monitoring and evaluation experiences of the GAAS team in Guizhou.

PARDYP: goals and process

The goals of the PARDYP team's PM&E work, as defined during the first training workshop in Guiyang (July 1999), were:

- To improve the project for development of a second phase,
- To identify problems encountered in the project,
- To determine new issues and new needs at the project site,
- To enhance the self-development capacity of local participants,
- To meet donors' needs,
- To increase the transparency of the project and, therefore, to increase accountability,
- To increase the participation of the various stakeholders,
- To learn from experience and mistakes.

Identification of these objectives marked the beginning of a step-by-step process that we have captured below (Fig. 6). In the following sections, we present the

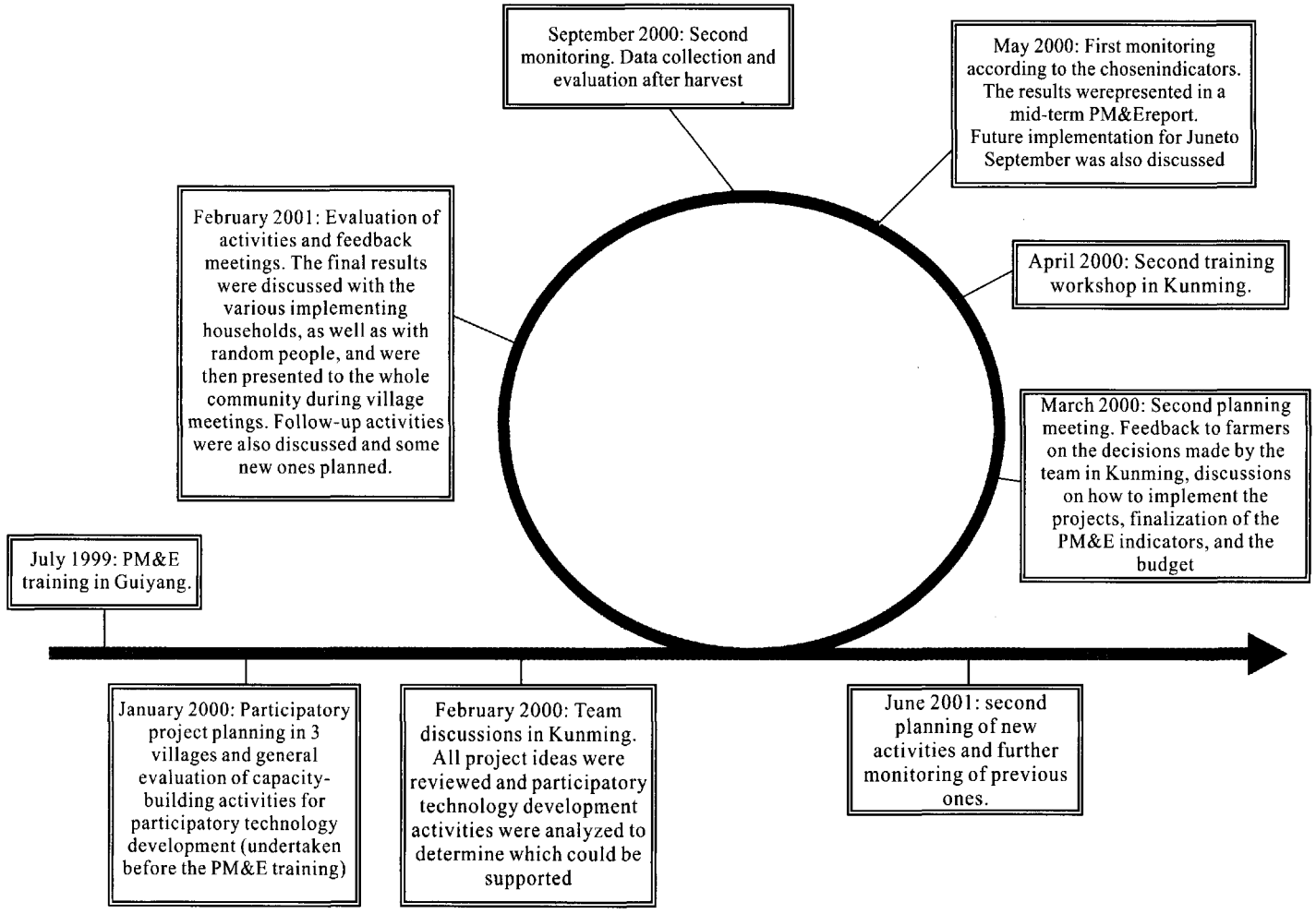

Figure 6. The PARDYP PM&E process from July 1999 to June 2001

details and milestones of the planning, execution, and reflection that were carried out at the various stages so far. As illustrated in the figure (see also Figure 2 in chapter 1), this process has not been linear. Before doing so, we introduce the participants in the process.

The participants

The following people and groups have been involved in the fieldwork at various levels.

At the county level (Baoshan)

- Two officials from the forestry bureau have been involved in the planning, implementation, and monitoring of the rehabilitation and community forestry projects. They provide technical training to local people and were trained in participatory rural appraisal (PRA).
- Five officials from the hydrology bureau have been involved in the planning, establishment, and monitoring of the erosion plots and hydrological stations. They regularly train farmers in how to collect and monitor the hydrological data and the erosion plots data, which they then analyze. Several were trained in PRA and PM&E, and in water and sediment analysis methods (in Nepal).
- One person from the agricultural bureau gives advice on and provides local seed varieties.
- The land bureau provides secondary data for our research.
- The meteorological bureau provided technical support for the establishment of a meteorological station and helps process and analyze the data collected there.

At the township level

- One person from the forestry station has been involved in the project and cooperates with the forestry bureau in all of its activities.

At the village level

- Officials coordinate activities and take part in the planning and monitoring. They are the main providers of information about the various villages. As they are the local coordinators, it is particularly important to build relations of trust with them, if any activity is to take place.

At the community level

- The village leaders act as coordinators at the village level and take part in the planning and monitoring of activities.
- Farmers, both women and men, plan and implement community development activities and help monitor the activities carried out at the field stations. At the beginning, they only implemented some of the rehabilitation and the community forestry activities, but now they are also involved in the planning stages.

The PARDYP team

- Xu Jianchu is the project coordinator; Yang Lixin, Qian Jie, and Stephanie Mas are responsible for the forestry, rehabilitation, and community development activities; Gao Fu for the watershed dynamics studies; Wang Yuhua for geographic information system (GIS) activities; and Ji Yunheng for researching biopesticides.
- Other members of the Department of Ethnobotany sometimes participate in specific research activities.

Work in the field: activities and outcomes

The PM&E activities can be divided into four parts (apart from the training

process described earlier):

1. Participatory project planning using PRA, participatory technology development (PTD), and PM&E methods and tools
2. Monitoring and evaluation of activities
3. Feedback meetings with local people
4. Planning of new activities

Participatory project planning

In January 2000, the project team made its first PM&E field trip. Gao Fu (watershed dynamics studies), Qian Jie (the forestry, rehabilitation, and community development activities), Xu Jianchu (project coordinator), Wang Jianhua (ethnobotanist), Yang Zhiwei (botanist), Ma Xing (Baoshan Hydrology Bureau), and Zhao Mingshou (Baoshan Forestry Bureau) carried out PTD activities in three villages: Damaidi, Yangjia and Xizhuang (see Fig. 7).

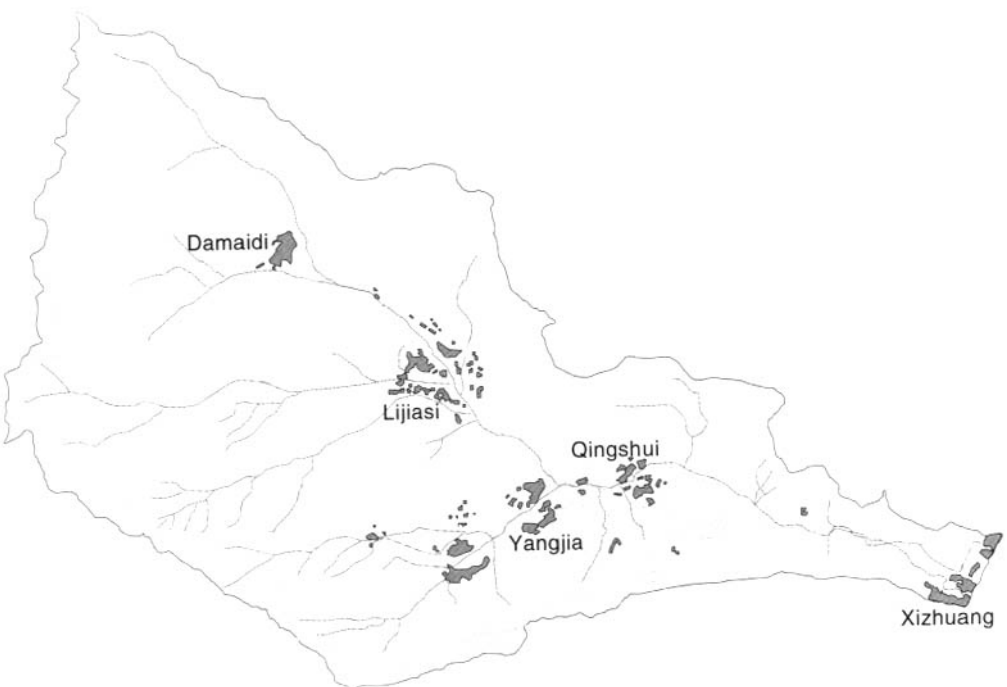

Figure 7. Map of the Xizhuang watershed

In each village, the PTD activities were scheduled according to the following six steps:

- 1. Getting started: the goals of the first step are to broaden the understanding among all the stakeholders involved (technicians, farmers, researchers) of the local situation in terms of socio-economic, cultural and political dimensions, and to agree about next steps in the process that will benefit the villagers. The PTD practitioners carried out the following tasks: selecting the area, introducing themselves to the villagers, building trust, ana-lyzing the natural resource management practices and problems, and establishing a basis for cooperation with the community, group(s) of families and indigenous/ local specialists. The tools used were a community walk and transect map, agro-ecosystems and social conditions maps, participant observation (of indigenous/local knowledge and customs), and identification of indigenous/local specialists (for each of the different agro-ecosystems).
- 2. Looking for things to try (innovations): the goal is to learn about indigenous/ local knowledge and its contribution to joint analysis, problem ranking, and formulation of potential solutions (innovations). The PTD practitioners together with the local people identified the sources of indigenous/local knowledge (specialists, innovators, experienced farmers, healers, forest users) and "outside" sources of knowledge. The tools used were diagrams drawn by specialists (depicting natural and social timelines or cycles, landuse histories, village history) and workshops.
- 3. Designing experiments: the goal is to design experiments and innovations that respond to farmers' interests and needs, strengthen their (management, organizational and experimental) knowledge, skills and practices, and improve their quality of life/livelihood. The PTD practitioners together with farmers reviewed existing capacities and practices of experimentation, and planned and designed selected experiments to be implemented by farmers and/or indigenous/local

specialists. Tools used were participatory technology analysis and a (experiment) design workshop.

- 4. Trying out innovations: the goal of this important step is to implement innovations/experiments and in doing so build or strengthen farmers' skills to manage, monitor and document the process. The PTD practitioners supported and facilitated farmer group building, exchange among farmers, and process documentation (achievements, failures, modifications). The main tool used was the regular group meeting.
- 5. Sharing the results: the goals are to exchange experiences and communicate results (ideas, principles, techniques) to other experimenters, neighbors, scientists or visitors from abroad. PTD practitioners supported the mobilization of farmer experimenter networks, reporting of results, diffusion of results; and tools used included farmer-to-farmer training, technology competitions study tours and farmer self-evaluation.
- 6. Keeping up the process: the goal of the final step is to create favorable conditions for ongoing experimentation and sustainable natural resource management. PTD practitioners contribute to the consolidation of processes such as group organization, inter-village networking and cooperation, and linking farmers and specialists. Tools used include participatory impact monitoring, organizational development techniques, and networking techniques.

As a part of this process small grant projects were designed with volunteer farmers, detailed information was collected about their households, and monitoring and evaluation indicators were identified. In particular, the following questions guided the process:

- What do you want to do with this small grant?
- Why do you want to do it?
- What kind of support do you need, such as material, financial, and technical assistance?

- Who will carry out the activities in your family?
- When do you want to begin your project?
- How can we monitor the project and evaluate its success or failure?
- Who will/can monitor and evaluate activities during the project?

In February, the team discussed the results of the trip. We reviewed the field reports and discussed the cost and feasibility of each small grant according to the household action plans. We also discussed the technical support role of the Baoshan Forestry Bureau staff in the participatory technology development process.

In March, the second project planning stage began. Qian Jie and Zhao Mingshou visited individual households in the villages to review their action plans for on-farm experiments, make final decisions about implementation of activities, and discuss the schedule and responsibilities for monitoring and evaluation. Eventually, for each small grant project, the action plans were approved by the project team and these served as contracts with the local farmers. We now turn our attention to what happened in the 3 villages.

Damaidi village: Damaidi belongs to Lijiasi administrative village and is located in the upper reaches of Xizhuang watershed. It has about 90 households with 430 people and one primary school with three teachers and 60 pupils.

The total land area is about 231 mu (15.4 ha; 1 mu = 0.066 ha or 1 ha = 15 mu) and the average amount of farmland per person is only 0.54 mu. The major crops are corn and wheat. Due to low fertility and lack of water for irrigation, productivity is low: only 150 kg/mu for corn and 100 kg/mu for wheat. Households have a total of 50 mu of tea gardens where old tea species have been grown for more than 30 years. This kind of tea has a low yield and is of low quality. Farmers themselves process the tea leaves, then sell them to a middleman in the Banqiao and Shaba town markets. The price is always around RMB ¥ 8 – 10/kg (1 United States dollar [USD] = 8.27 Renminbi [RMB]). They also have 73 mu of land with more than 4 000 wild walnut trees.

The community meeting was held at the village leader's house. At first, eight farmers attended, then others joined in. Four groups of two people were

formed for the PRA exercises; matrix scoring and ranking focused on livestock (Table 4).

The main issues and possible projects mentioned involved tea production, fruit production, and livestock. Although tea was an important source of cash income, production costs were high, as farmers had to purchase chemical fertilizers and pesticides. At the same time, the quality of the tea produced was low. The farmers wanted to experiment with new species, but these are expensive when purchased from the government extension stations. They also wanted training in tree grafting techniques (for grafting wild walnut and other fruit trees) and in how to improve the management of orchards.

Four people volunteered to implement livestock development and tea nursery projects. Suggestions included the introduction of a new species of goat and the building of pig sheds. Training in grafting techniques was also suggested (see Table 4). The team mentioned that it had limited funds and would contribute mainly in terms of technical support; we pointed out that the farmers themselves should initiate the activities.

The project team discussed the mistakes that we thought we had made, what had been omitted, and how we could improve our use of PRA tools. It was suggested that the social map include a "wealth" classification. In addition, it was recommended that the transect walk include the altitude of each land use form, and historical comments, such as land use changes and the policies determining them, land tenure changes, etc. The team discussed the feasibility of the activities suggested by farmers and how to improve the benefit-sharing arrangements. We realized that the farmers who had come to the meeting were either relatives or friends of the village leader. It was suggested, for example, that Qian Jie, who would be in charge of community development activities, approach members of the PRA network for advice on management styles for livestock development.

The projects approved after the team discussions were: building pig sheds, training in grafting of walnut trees, development of a tea nursery, and the introduction of new goat species.

Table 4. Results of matrix scoring and ranking of livestock with four households in Damaidi village

Live-stock	As helper	Market value	Provide manure	Good taste for food	Low cost (labour and fodder)	Disease resistance	Easy breeding and growth	Total
Goat		* * * * *	* * * * *		* * * * *	* * * * *	* * * * *	25
Cattle	* * * * *	* * * *	* * *		* * * *	* * * *		20
Buffalo	* * * * *	* * * *	* * *		* * *	* * * *		19
Pig		* * * *	* * * *	* * * * *		* *	* * *	18
Horse	* * * * *	* * * *	* *		* * *			14
Poultry		* * * *		* * * * *	* *		* * *	14
Dog	* * * * *							5

Note: All farmers thought goat meat tasted best, but they did not consume it themselves due to its high market value.

Yangjia village: Yangjia belongs to Qingshui administrative village. Located at about the middle of the Xizhuang watershed, it has 56 households with a total of 236 people. There are two primary schools nearby, in Qingshui and in Langmaidi. Livestock includes buffalo and pigs, with an average of one or two per household. Most of the men take outside jobs during off-seasons.

According to the wealth criteria developed by the farmers, 16 households (30.8%) are rich, 27 (51.9%) are considered "ordinary," and 9 (17.3%) are poor (Table 5).

Farmers have access to about 135 mu (9 ha) of farmland at an average of 0.57 mu per person. Due to better and more informed management, crop yields in Yangjia are higher than in other communities: 300 kg/mu for corn and 200 kg/mu for wheat. Tea gardens occupy about 120 mu, and farmers put a lot of effort into managing them. Tea is the main source of income and productivity is high. Local farmers are known for being good tea producers. They are currently planning to plant new species on 300 mu of swidden. Local forest resources are also abundant because villagers follow strict regulations for the management of their communal forests.

Table 5. Local criteria for ranking wealth in Yangjia

Rich household	Ordinary household	Poor household
Has savings Produces enough food by farming Has more livestock and poultry All family members are healthy Makes money through off-farm employment Can build new house	Has no debt Needs to buy rice from the outside market	Has debts Has bad land with landslides Has less livestock Has sick or handicapped family member(s) Has more tuition burden Members don't want to work hard Has unlucky marriage Has naughty children

In Yangjia, most villagers had been informed of the meeting, but only 12 to 15 attended. Four groups of three people were formed. The same PRA tools were used as in Damaidi, but a historical diagram of the main environmental changes in the village from the 1950s to the 1990s (natural disasters, crop species, fertilizers and pesticides used, forest cover, and farming technologies used) was added. Indeed, landslides and finding ways to control them were previously identified as a main issue in Yangjia. Scoring and ranking thus focused on fruit tree and bamboo species (Table 6). In the afternoon, many project ideas were put forward, but at first no one wanted to volunteer to carry them out.

Several main issues and proposals emerged. Soil fertility had to be improved to offset the increased population and associated reduction in the amount of land available per household. The problem of landslides was discussed, as well as the need to improve tea and corn yields to have more to sell or exchange for rice.

Project ideas included introducing soybeans as a new crop. Farmers thought soybeans would be suitable for the local climate and would also improve soil fertility. The team promised to try to get more information about suitable species. Tea and walnut nurseries were also recommended, as well as "fruit" or sweet corn. Farmers had grown corn only for fodder, not as a food crop, but

they had heard ofa species that humans could eat and wanted to try it.

Table 6. Results of matrix scoring and ranking of fruit trees with six farmers from different households in Yangjia.

Fruit tree	Good taste	Easy to sell	High productivity	Less land occupation	High market price	Total
Little apple	* * * *	* * * *	* * * * *	* * * * *	* * * *	22
Walnut	* * * * *	* * * * *	* * * * *	*	* * * * *	21
Peach	* * * * *	* * *	* * * *	* * * *	* * *	19
Persimmon	* *	* * * * *	* * * * *	* *	* * * * *	19
Plum	* * *	* *	* * * * *	* * * * *	* *	17
Pear	* * * * *	* *	* *	* *	* *	13
Apple	* * * * *	*	* *	* * * *	*	13

Finally, they also wanted to plant bamboo to control erosion and stop landslides. However, they pointed out that this would not be possible because the lands where landslides occur were in private hands, belonging to three or four households. The owners were willing to exchange this land for communal property to make the project possible, but the other farmers would not agree to trade good communal farmland for land that was degraded. For the private landowners, planting bamboo was out of the question at that time, because even though the land was degraded, it still had to be used to produce wheat and corn. Planting bamboo would interfere with these crops.

At first no one volunteered to carry out any of these projects. Everyone wanted them to be carried out on communal land so that everyone would share the benefits and no one would risk their own land. Lengthy discussions followed in which the project team explained that this was not really acceptable. Eventually, it was decided that tea and walnut nurseries could be established on communal land, while the village leader and another farmer would carry out soybean and corn experiments on their own land. For the bamboo project, each farmer would plant trees and the team would then pay them RMB ¥ 2.5 for

each tree that survived.

The projects that were approved after the team meetings were: an on-farm experiment with new corn varieties, an on-farm experiment with soybeans, and establishment of tea and walnut nurseries.

Xizhuang village: Xizhuang belongs to Wofu administrative village. It is located in the downstream portion of the Xizhuang watershed and has 105 households with a population of 410 people. It has several primary and high schools. Most (80%) of the men engage in off-farm employment and the living standard is better than in the other two villages.

Villagers have paddy fields with high productivity, as well as old tea gardens planted in 1959, which are less productive. Because there are no forests within the area, farmers must buy firewood for daily use in the market. A cement factory nearby causes air pollution.

The process in Xizhuang presented some new challenges. The team arrived early in the morning, and waited a long time for the villagers to meet, but no one came. When we approached the households directly, farmers said that their leader had not informed them about the meeting. In fact, the project team had had some conflict with this village leader in the past. In the end, we carried out the various PRA exercises in individual households and asked farmers to come to the public place in the afternoon. To our disappointment, only two people came.

The projects suggested by the two people who attended the afternoon meeting were the development of village wastelands and the planting of several fruit trees. However, the farmer interested in fruit trees later withdrew because he thought the team was lying about providing support and would later ask for money; he tried to convince the other farmer to leave as well. The wasteland management project was approved after team discussions.

Monitoring and evaluation of activities

The following community PTD activities were evaluated through interviews with

farmers according to the framework established by the PARDYP team during the first training workshop in Kunming (see chapter 2, Table 3).

Nursery development: Most farmers considered the establishment of the nursery for high-quality tea species in Lijiasi (Damaidi) successful. The official who implemented the project mastered the skills necessary for nursery development, and the survival rate of the plants was high (over 85%) due to good management, despite many problems caused by the cold weather in 1999. All the tea seedlings were sold to villagers at a low price, and the nursery provided cuttings for the other farmers.

On the other hand, the walnut nursery in Qingshui (Yangjia) was considered unsuccessful due to poor management and a failure to share the benefits. Problems identified by the farmers were:

- The project had been negotiated only with local officials, who then submitted it to someone else. No contract was established to determine the responsibilities of the various stakeholders, so when conflicts arose, the local officials did nothing.
- The project workers lacked background information about the community. The local farmer was incapable of implementing the project, so no one was surprised at the low growth and survival rates.
- No monitoring and evaluation system had been established. Even though the PARDYP team paid a salary and allowance to the farmer, he sold the walnut seedlings and pocketed the money.

Establishment of a pear orchard: The PARDYP team provided good-quality pear seedlings to Yangjia village at no cost. Villagers planted them on both private and communal land. The trees grew well on the private property (survival rate over 95%), but most of the trees on communal land were stolen by other farmers.

Regarding the pear variety, the following advantages and disadvantages were noted by farmers (no breakdown by sex):

Advantages	Disadvantages
• Growth rate was excellent; trees produced fruit in 3 years. • The pear trees could be intercropped with soybean and squash, thus solving the problem of more people/less farmland. • The necessary management skills are not complicated; management does not require more time or labour.	• The PARDYP team did not provide enough information about the pear species. Farmers said they did not know anything about taste and other characteristics. • Villagers also lacked market information. Although they were eager to plant many trees, they were uncertain what the demand would be in 3 years.

Training in grafting and pruning: Many farmers found this kind of training necessary. The skills are simple, easy to learn, and are of great benefit. However, they complained that the selection of trainees was not made public; few people knew who had been trained, so the techniques were not passed along to others. It became clear that keeping up the process through farmer-to-farmer training and networking is key to sustaining PTD activities.

Livelihood development experiments implemented in 2000 were also monitored through farmer interviews, according to the criteria and indicators established by the farmers during the planning stage (see Table 7).

Table 7. Example of an information chart prepared by farmers during the project planning phase

Item	Information collected
Stakeholder	Ms. WS, female, 31 years old
Household	Husband, 33 years old; stepmother, 60 years old; son, 5 years old; daughter, 10 years old
Land use	2 mu of dry land, 4 mu tea garden, 0.07 mu home garden, which can be modified as tea nursery
Livestock	2 pigs, 3 buffaloes, 7chickens
Income	From selling tea (usually 50 kg), RMB ¥ 500; selling pigs, RMB ¥ 1 500; selling chickens, RMB ¥ 100; off-farm employment, RMB ¥ 2 000

Table 7 concluded

Item	Information collected
Expenses	Rice, RMB ¥ 1 000; fodder, RMB ¥ 200; school tuition, RMB ¥ 500 – 600; maintenance, RMB ¥ 500 – 600
What?	Establish nursery stock of new tea species
Why?	New tea species has high yield and higher market prices. The nursery stock can help improve local people's tea gardens in the future.
What do you need?	Materials: tea branches, pesticide, long plastic pipes; labour: preparation of land by farmers; technical support: transplanting, nursery management
Who?	Ms. WS and her husband
When to start?	Transplanting should take place in June 2000
Evaluation indicators	Survival rate of tea seedlings; the number of seedlings bought in the community; the price of tea seedlings (should be lower than the market price)
Who will monitor?	Local coordinator and officials

Note: 1 mu = 0.066 ha or 666 m^2. 1 United States dollar (USD) = 8.27 Renminbi yuan (RMB ¥). The total budget of RMB ¥ 1 220 consisted of RMB ¥ 800 for tea branches and RMB ¥ 420 for other materials.

Livestock: To start a "passing the gift project," three households were selected in Damaidi village and their purchase of seven goats was subsidized. The plan was for the first household to care for the goats for 2 years; at that point the second household would select seven goats from the group and raise them for 2 years; then the third household would choose goats. After 6 years, officials from Lijiasi administrative village would select seven goats from the third household and distribute them in a new village to replicate the project. In the first year, the number of goats had already increased to 11.

The project team decided to adopt this type of project following their experience at the planning meeting, where they realized that all the farmers who attended were either relatives or friends of the village leader. The team wanted to find a way to keep from helping only a select (and likely elite) group and extending the benefits to other people.

It is important to plan small grant projects in detail. Farmers, together with field staff, should try to think of all the issues that will arise and the support they will need during the implementation stage and include them in the funding. Once the budget has been approved, the coordinator should be strict about not providing any extra funds. In the project in Damaidi, for example, "extra" money was included in the budget for buying medicine. This is important, as farmers usually ask for more and more money during project implementation.

A second project involved pigs. Pigs are traditionally kept under the houses in a space that is difficult to clean and where disease spreads easily. One household in Damaidi was assisted to build pig sheds to improve hygiene and control diseases. Previously, this household had been able to raise six pigs a year; with the pig sheds, it can produce more than ten.

Wasteland development: One farmer in Xizhuang village volunteered to carry out on-farm experiments in wasteland development. He was given a small fund to build a house close to the land, 2 km from the village. He was trained in walnut nursery development and fruit tree production, then provided with free walnut, corn, pear, plum, and grape seedlings, which he planted. He also raised 30 rabbits, five hives of honeybees, a donkey, and 10 goats. In addition, he dug a pond, which produced more than 50 kg of fish.

This experience showed us how diverse farmers' ideas can be when it comes to increasing their household income. In this case, diversification reduced the risk that the household was facing by depending on only one main farming activity.

Demonstration of new crops: Assistance was provided to one household in Yangjia to plant soybeans on 1 mu of land with low productivity to reestablish the balance of soil nutrients and to compare this crop with the corn and tea originally planted, in terms of social, economic, and ecological benefits. Growing soybeans appeared to require less labour and time and to reduce soil pollution, as it only requires small amounts of fertilizer; it also increases soil fertility (see Table 8). Soybeans can also be traded for more rice: 1 kg of

soybeans can be exchanged for 1 kg of rice, whereas 2 kg of corn are needed for 1 kg of rice. Corn is necessary to provide fodder for pigs, but brings no direct economic returns; tea brings economic benefits, but growing it is labour intensive, especially for women. Moreover, the price of tea has dropped this year, as potential purchasers on the international market now know that local farmers use a dangerous pesticide forbidden by the agricultural bureau. (Research is being carried out to develop remedy this situation.)

After this experiment, farmers decided to extend the area planted with soybeans to 50 mu. The PARDYP team provided them with 250 kg of seeds this year (February 2001).

Table 8. Economic comparison of crops grown in Yangjia

Crop	Labour input	Capital input (RMB ¥ /mu)	Average yield (kg/mu)	Market price (RMB ¥ /kg)	Income (RMB ¥ /mu)
Soybeans var.661	Medium (simple management)	Low(average < 40, including seeds)	120	2.40	288
Soybeans var.028	Medium (simple management)	High (more than 150, seeds are expensive)	180	2.40	432
Corn	High (fertilizing, weeding, etc.)	High (average 70)	100	0.76	76
Tea	High (applying pesticides, collecting tea leaves)	High (average > 100)	50	8	400

One species of high-yield corn (Dianfeng # 4) and three species of sweet corn, which can be sold at a high price, were introduced in Yangjia. With Dianfeng # 4, production increased from 300 kg/mu to 525 kg/mu. This variety cannot be used for fodder, as the skin is too thick. However, it can be exchanged for rice, which cannot be planted in the uplands and thus has to be purchased by farmers. Sweet corn varieties, on the other hand, did not grow well in the uplands, because of the low temperature and strong winds. It seems that a combination of the new variety of high-yield corn on good land and

soybeans on the low-productivity lands will give the farmers sufficient resources to purchase the rice they need.

Nursery development: In June, eight farmers were trained in tea nursery establishment: six from Damaidi and two from Yangjia. In July, two tea gardens were established with different management systems. In Damaidi, the nursery is managed by one household, which will sell plants to the other villagers. They planted 27 000 seeds this year with a survival rate of 95%. In Yangjia, the community owns the nursery. One farmer was hired to manage it and he gets a salary of 2000 RMB a year. The villagers, who will share the plants, planted about 60 000 seeds. However, most of them did not participate in the training and did not plant the seeds carefully. The nursery was also badly managed; at one point, the field was not watered for 4 days. Thus, survival rate was low, at only 70%.

This project made the team realize that it is better to start small, at the individual household level, then move to a larger scale if it is successful. Large-scale activities are much harder to manage. Moreover, when farmers themselves take risks, they are more careful and more likely to be successful. If they have nothing to lose, they also have little to gain.

Two walnut nurseries were established in May, following the training of seven farmers in Yangjia and Xizhuang. Overall, the survival rate is 95%, and 400 plants are now available for planting in the upland gardens.

Training in grafting and other agricultural techniques: For 3 days in February, seven farmers in Damaidi were trained and provided with knives, wax, thread, plastic film, twine, whetstones, and walnut branches. A total of 2 500 walnut trees were grafted with a new species. The two technicians from the local forestry bureau, who trained the farmers, were expecting a survival rate of 60%, but the actual rate was only 40%. However, the farmers appreciated the training and felt confident about their newly acquired skills. Although the results of the grafting experiments on communal land were poor, survival rate was high in villagers' home gardens, and they have used their new

skills to graft peach and pear trees as well. They were eager to try again next year and to organize farmer-to-farmer training.

Although this project appeared to be a failure, the farmers actually viewed it as very successful. They were not concerned about the low survival rate, but helped the team determine why it was low and how to improve it for the next time.

In June, two farmers from each village (Damaidi, Yangjia, and Xizhuang) and their village leaders visited the Baoshan tea extension station and the exhibition of new agricultural technologies. They were particularly interested in tea nurseries, tea species, and planting techniques. However, no women became involved in the activity, making the team aware that they needed to pay more attention to women's roles and relationships (with men and with other women), interests, and constraints. Increasing understanding of gender roles and relationships is equally important for project members, local partners, and local community members.

Feedback meetings

The third element in the cycle consisted of the very important feedback meetings. Returning to the villages, the team interviewed participating and nonparticipating household members, both women and men. The overall objectives of this step were:

- To find out, through direct interviews with the farmers, how much they knew about the project, what they thought about the various activities, and what kind of new activities they would be interested in developing
- To present, during village meetings, the overall goal of the project, explain how it was organized and why, and present all the activities and results in a holistic way and get feedback from farmers
- To introduce the project style and approach and the concept of self-development
- To plan for the extension of the soybean project in Yangjia and of the peach tree project in Damaidi and Yangjia

The schedule was:

- 24 *February*, *Damaidi village*: Interview farmers during the day; conduct feedback meeting at the school in the evening
- 25 *February*, *Yangjia village*: Household interviews in the afternoon; meeting to plan peach tree and soybean extension projects in the evening
- 26 *February*, *Yangjia village*: Household interviews during the day; first feedback meeting and discussions in the evening
- 27 *February*, *Yangjia and Damaidi*: Second feedback meeting in Yangjia in morning; meeting to plan peach tree project in Damaidi in the afternoon

The team carried out semi-structured interviews and sometimes open discussions with both participating and non-participating villagers. With those who had taken part in the projects, they focused on evaluation of the various activities. In addition, randomly selected households, who were not directly participating in the projects, were also asked the following questions:

- What had they heard about the project?
- Which activities did they think were the most appropriate in their context and what activities did they prefer?
- Which activities had they taken part in and what role did they play?
- What suggestions did they have for improving activities to benefit more people?
- What kinds of activities would they like to develop in the future?
- What did they think about the project?
- What kinds of activities helped people become richer in their village and in nearby villages?
- Other more specific questions, depending on who was being interviewed, concerning their interests, specialization, etc.

Evaluation of project activities by participants: The building of pig sheds was considered successful. Being able to raise more pigs significantly increased

household income, but also the work burden of family members, especially the women, as they were responsible for preparing fodder. This activity includes finding green fodder, chopping it up, cooking it, and feeding it to the pigs. Having to prepare nearly twice as much fodder as previously meant that the women in the participating household had considerably less time for other activities. They were thinking about purchasing an electric grinding machine, and wanted the PARDYP team to provide a small loan for this purpose. The team had to refuse, because we only disbursed additional money for small grants projects when absolutely necessary; but the team took the opportunity to suggest that they organize as a group to share the costs. They could then charge user fees to other farmers outside the group, who would like to use the machine.

The "passing the gift" project was still successful, and the number of new breeds of goats was increasing to the point where some could be passed to the next household sooner than expected.

Many farmers were very satisfied with the tea nursery initiative. All of the tea plants from the Damaidi nursery were on order, sometimes by farmers from distant villages. The survival rate remained high.

In Yangjia, however, the project was already deemed to have failed. In February, the plants were under cover, so it was impossible to determine the exact survival rate, but the farmer who managed the nursery and forestry bureau staff expected it to be less than 50%. According to the nursery manager, this was due to several factors. First, the cuttings were done by about 20 people, very inconsistently, so that when another group of 14 people came to plant them, they had to plant some deep and some shallow, and ended up not taking sufficient care over the work. Second, after planting, the cuttings should have been shaded, but there was no funding for this, and none of the farmers had enough interest to invest in the project. Finally, after only a month, the manager quit and the field was left unwatered for about 4 days until someone was found to replace him. This management issue was discussed in depth with the villagers, who had wanted to plant the peach trees on communal land. Eventually, they decided to plant them instead on upland fields with the different farmers managing their own plots.

During the February field trip, the PARDYP team planned for the extension of the soybean crops to 50 mu. This involved about 38 households, each planting 2.5 – 10 kg of seeds. The seeds were distributed in April 2001, but no monitoring and evaluation indicators have been established so far. This will be done during the next field trip.

The establishment of new corn varieties was a failure. Although the high-yield corn grew very well, farmers reported that the local extension station wanted to introduce another variety, which they prefer. It tastes better, is easier to obtain, and although the productivity is not as high as the variety from our project, it is acceptable.

For the other activities, the results and evaluations were unchanged.

Comments from non-participating households: Most of the non-participants interviewed did not know about PARDYP. However, when asked about the various activities, they were aware of them, but surprised that they were all part of the same project. The team thus spent quite some time explaining the project and introducing themselves. Most people thought the activities were good and wanted to take part in them.

In Damaidi, a woman had tried to introduce new tea cuttings, but most of them died, possibly due to a poor use of fertilizers, she suggested. Thus, when the plants from the tea nursery projects are sold, a new training session on tea planting should be organized. In Yangjia, the village leader wanted to establish a nursery for nut trees, as nuts can be stored more easily than fruit and are also easy to sell.

In both Yangjia and Lijiasi, some farmers wanted to establish nurseries for propagating a wild vegetable called *cilabao* (local name). This species has been traditionally used in the watershed for fencing and eating (household consumption), but it also has high market value. During the field trip, a propagation project was planned by Yang Lixin and two farmers, one from Yangjia and the other from Lijiasi. Both farmers were trained to take cuttings from roots. They will be paid to acquire the cuttings from existing trees around the village and plant them on small experimental plots (about 0.3 mu in Yangjia

and 0.5 mu in Lijiasi). Later this year, they will be trained further in management techniques and, if the activity is successful, farmer-to-farmer training will be organized to scale-up the project.

Several farmers in Damaidi were also interested in applying for small loans from the project; for example, to buy a grinding machine to make flour or to prepare fodder. In Ganwenkeng, a group of women would like to buy a machine to make *toufu*. These kinds of projects could become part of a micro-credit project, which could eventually be sustained by village funds. A few years ago, for example, Yangjia was given about RMB ¥ 100 000 by the government, in compensation for a road built on its land. Damaidi also received funds, but no one seems to know what happened to them. This village has no leader, because no one wants to account for the lost funds (which might have left the village together with the previous leader). The idea of a micro-credit project might motivate the farmers to look into this issue and try to solve it.

Other discussions during the field visit touched on the general development situation in the various villages and on the most significant changes that have contributed to the improvement in the standard of living. In Yangjia, the team had lengthy discussions about the various laws governing access to forest products.

In Damaidi, a project had been initiated by Gao Fu to overcome the shortage of water for irrigation during the dry season (winter); this had been identified as one of the main issues of concern during PRA exercises in 1998. In September 1999, interviews had been conducted with farmers in Damaidi and in January and August 2000, planning meetings had taken place. At first, farmers decided to build 30 small individual tanks (1.5 – 4.5m^3) next to their farmlands. Monitoring and evaluation indicators that were established included increased yield and more time available for other work. A local committee was established for planning, building and managing the water conservation system. It included four people elected by the villagers and a local official. In November, farmers finished building 34 tanks and asked PARDYP to support them to build another large pool (90m^3). The PARDYP team said that it would be able to contribute only a very small amount of money. However, farmers

started construction and the tank was completed in December 2000. During the team's field trip in February, the leader of the Lijiasi administrative village said that it had still not been paid for. The team did not discuss the issue then, as we did not know enough about the project and knew that Gao Fu would evaluate it in April.

Village feedback meeting in Damaidi: The team planned a five-step process for the meeting:

- Step 1: Explain the project in its broader context, i.e., cooperation with other countries and the fact that what is learned in this village might help poor people elsewhere and contribute to raising the standard of living. The team hoped that this would motivate the villagers. We wanted to introduce the KIB and ourselves, and our project style and methods, and to highlight that the team wanted to learn from the villagers, share ideas, and provide support for their self-development and reflection on their own activities.
- Step 2: Using posters, present all project activities for the year, including the research activities, so that the villagers would understand the whole process and the project's logic. At the end of the presentation, we intended to ask if there were other activities that the villagers would be interested in.
- Step 3: Facilitate group discussions. At first, we thought we would ask three questions: What is the activity good for? Who is benefiting? and What else/other kind of support do they need for the activity? But on further reflection, we decided on only two: What benefits does it bring? and Who is benefiting? At the end of the discussion, we would ask what kinds of activities the villagers would like to add.
- Step 4: Present the results of the discussions and rank activities, including the newly proposed ones, by asking people to move to the poster representing their preferred activity. The team planned to ask women to decide first to allow them freer choice. We would then remove the poster with the largest number of votes and repeat the process for other activities.

- Step 5: Use the method described in step 4 to rank the activities the villagers would like to take part in.

The actual process contained a couple of surprises. The discussion using the posters was easy to follow and everyone looked very interested. Five groups of six or seven people were formed and given nine sheets of paper. The team asked each group to answer the first question only (What benefits does it bring?), using one sheet for each activity and drawing the activity symbol on the top. The results are presented below (Table 9).

Most of the groups of men discussed only the activities they were interested in, whereas women followed the whole process trying to discuss all alternatives. It was difficult to facilitate the meeting, as there were only two facilitators for the five groups (Qian Jie, who moved from one group to another, and Xiao Li). Thus, the process was "a little messy," but quite productive. The meeting started late (between 8 and 8:30 p. m.) and lasted a long time, as people had many questions after the group discussions. In the end, the team was unable to carry out all the planned steps, although it seems that all the people who attended the meeting (about 35) now had a good understanding of the whole project and the links between the various activities. The discussions were lively, and people agreed that this kind of meeting was excellent: "We help them, they help us."

The other positive outcome was that more and more people trusted the project team and wanted to take part in the various activities. Only relatives of the village leader had attended the previous year's meeting, so only a select few villagers had benefited from the first year's activities. (The team was told later that other people had been informed of the meeting, but did not attend because they were not interested and did not believe what they were told about the project. They thought the team was like the usual business people who come to their village and try to trick them. A few years before, a man had trained them in walnut grafting, given them branches, then asked for a percentage of the production.)

Table 9: Benefits of nine small projects in Damaidi, identified by groups of villagers

New corn varieties (2) *	**Tea nursery (2)**	**New goat species (5)**
• high yield	• income generation	• income generation
• can exchange for rice	• high yield	• appropriate for development in mountainous areas
• makes wine	• easy to collect	• people already have the skills
• fodder	• conserves water	• provides fertilizer
• food	• new skills	• produces a new species
• income generation	• drink	• food
• diversify of crops	• provides good cuttings for the community	• benefits several people due to "passing the gift"
	• high survival rate	• someone thought there are other species, better adapted to the cold weather
Soybean crops (3)	**Reforestation (3)**	**Peach trees (5)**
• can be intercropped with other higher plants; intensification	• good for water	• income generation
• income generation	• firewood	• provides branches for grafting
• food	• building materials for houses	• leading to benefits for whole community
• bean curd	• timber for selling	• food
• good for crop diversification	• benefits everybody	
• can be exchanged for other food	• prevents floods	
	• erosion control	
Pig sheds (2)	**Training (1)**	**Hydrology (2)**
• income generation	• new skills/ knowledge	• controls drought; increases production and income generation
• fertilizer leading to good harvest		• water tanks: increase productivity and reduce burdens
• only benefits the people who have one		

* The number in parentheses represents the number of groups that answered the question for this project.

Based on the team's experience in Damaidi, we decided to simplify the process for the meeting in Yangjia. However, we felt that it was good to have started in a rather "complicated" but holistic way rather than oversimplifying. The ranking exercise did not pose a problem. Although we did not have enough information for our "own" evaluation (according to plan), the meeting benefited local people. The team managed to explain the project and its logic, as well as motivating the villagers. For future meetings, we thought that it might be a good idea to train suitable people to help with facilitation.

Village feedback meeting in Yangjia: The plan for this meeting was as follows.

- Step 1: Presentation of group activities.
- Step 2: Group discussions. The team intended to explain why group discussionsand teamwork are important. We were hoping to find two reliable people (e.g., the village leader and the man who managed the tea nursery), and explain to them the process of group discussions and their logic and ask them to help facilitate. For the discussions, the team planned to divide the villagers into three groups, each discussing four project activities, thinking about the benefits they bring, then selecting their favourite project, and explaining why.
- Step 3: Presentation of results. The team aimed to ask the villagers whether they agreed or disagreed with the results.
- Step 4: Wrap up by discussing other activities considered to be more suitable.

On the day the meeting was scheduled, it rained all day. The village leader warned that people would not come because the paths were very steep and dangerous in the dark when they were slippery. Postponing the meeting to the next day was not possible because it was market day. Only six or seven people made it to the evening meeting and most of them had been among those planning the peach tree project the previous night. They explained that although people knew that the project was good, they were sometimes lazy. Also, most of the men were doing off-farm work at that time, and women alone with children

could not leave their houses empty at night. The participants had mainly come to put their names on a list. They made excuses, but did not really see that village meetings were important and thought they could just come and order trees.

The villagers and team had a long discussion about sustainable development, about the process that PARDYP project team wanted to initiate, about the importance of group meetings and sharing and working together. The team explained that we were not there to collect shopping lists. Frustration arose because the soybean activity still had to be planned before the team left, and we still had many questions. Should only the people who attended the meeting be included in the soybean project? How could they plan for the others? Wouldn't that make it too easy for them? The PARDYP team could not just accept orders for plants, because we would be the ones taking the risk. If the project was not well planned and included everyone, the PARDYP team would risk losing a lot of money!

The team asked the villagers present how they could help start the self-development process in the village. The village head said that he would do everything he could to organize a meeting the next morning and make sure a lot of people attended. He would also finish drawing a map of the soybean extension project with farmers. He asked the team to be patient and assured them that people would start understanding the project little by little and would begin participating more and more. He explained that the process was very different from anything they were used to. Usually, government officials would come to the village to talk only to him and he would have to pass the orders on to the others, e.g., "develop 200 mu for walnuts."

The villagers made drawings to illustrate the two approaches. The drawings showed that they thought both the government and PARDYP brought them benefits, but the government forced them to accept and follow its ideas whereas PARDYP did not try to force anyone. Villagers thought that the PARDYP team wanted to do things together so that the villagers could do them alone later. They also understood that the PARDYP team was interested in knowing details about the various activities to make sure that the project would be successful. On the other hand, they depicted government staff as coming to the villages only

when the villagers were doing things. Government staff were not concerned about whether the project was successful; in contrast, in the eyes of the villagers, the PARDYP team seemed to care about their success.

Following this enlightening presentation, the team asked the villagers if they thought other farmers felt the same way. The village leader replied that other farmers might think differently at the beginning, but after they learned more about the project they would certainly agree. He pointed out that he had not trusted the team in the beginning, because of many previous problems with outsiders. The team explained that this was exactly why we found group meetings important.

As the team was unsure about attendance at the next morning's meeting, we decided to provide feedback on the activities and ask the current participants to be prepared to share the results with other farmers if the morning meeting was cancelled. The team made the usual presentation with careful details about where the activities took place, the methods, PRA, PTD, the research process, etc. One of the women was astonished at the extent of the activities, and the other farmers all thought the presentation was very interesting. They were particularly impressed by the pig sheds and how many pigs could be raised that way.

The village leader reminded the villagers that the PARDYP team was not the government and that they had to understand that it could not do everything they wanted and that it did not have a great deal of money. However, the team had already done many good things. Everything was also planned carefully. He told the other farmers that if they also planned carefully, then PARDYP might support their activities in the third year of the project. He speculated that PARDYP might be able to help establish a development base for nut trees.

Returning to the soybean project, the village leader had a good idea. The previous year he had planted soybeans on his land. Given that PARDYP would provide a new generation of seeds this year, he wanted to continue planting the "first" variety for comparison and to find out for how many years or generations the seeds could keep producing well. He had also considered the sustainability

of the peach tree project. He learned that peach trees produce a good crop for 3 years, but after that production decreases. He had allowed for this by planting different species in his courtyard, so that if the peach trees did not keep producing well, he could graft other species onto them.

Many people came to the second meeting the next morning. The team followed the plan, but divided the participants into two large groups for the discussions, one facilitated by Qian Jie, the other by Yang Lixin. They had prepared two panels with a drawing of all the activities with ample space for writing. A circle in the centre allowed participants to indicate which they thought best.

Qian Jie facilitated a women's group. A high school girl, who had been interviewed the previous day, was asked to be the recorder. The women discussed all of the activities, and Qian Jie answered their questions. They were then asked to choose one preferred activity and discuss it in more detail. Because they were reluctant to do this as a group, each woman was asked to state her preference; all chose activities involving either pigs or chickens. Everyone in Yang Lixin's mixed group went straight to the panels to record their preference and provide reasons, which Yang Lixin wrote in the various boxes. Both groups finished at exactly the same time and the two facilitators presented the results. Finally, Qian Jie briefly repeated who the team members were, why they were carrying out this exercise, how it would contribute to the project, and the reason for this approach.

Planning new activities

Yangjia: The team planned two projects — planting soybeans and peach trees — on the first night during a meeting with all the farmers who had upland fields. Thirty-eight households were going to take part in the soybean extension project and each required 2.5 to 10 kg of seed.

When planning the peach tree project, the team started by reminding the farmers how most of the pear trees that had been planted in the village previously had been stolen. We asked for suggestions on how they could make

sure people would not steal the peach trees. The villagers replied that they were going to impose penalties for stealing, and the village head suggested painting the trees. The team asked them to draw a map of all the fields, showing the farmers' names, the size of their land, and the number of trees they wanted to plant. The total area for the trees came to 23.8 mu and about 1 000 trees were needed.

We then discussed management, support needed, and problems that might occur. Farmers asked for technical support concerning cutting and grafting techniques, the use of pesticides and fertilizer, removal of the flowers and collection of the fruit, and early maturation of fruit (to be the first on the market). They also mentioned market studies and advice on what they can intercrop with the trees.

After completing the map, several women went outside to chat and then left. Immediately, the village head told the men they could now start discussing the rules and would be able to think better as it was quieter! They decided to set a fine of 500 – 1 000 RMB for stealing trees, and all participants would have to support the other households in looking for the stolen trees. To benefit other people in the community, they decided to provide branches to other households and even to other people in the valley.

Lijiasi: Zhao Mingshou (of the Baoshan Forestry Bureau) and Yang Lixin described planting and watering techniques. When many new people arrived, Qian Jie suggested that someone who had listened carefully to the explanation could repeat the information. At first no one volunteered, but then one of the officials of the Lijiasi administrative village spoke, describing the technical aspects of the activity. He also mentioned possible conflicts over land boundaries and asked farmers to respect the decisions of the village committee, because they would be for the good of all. He stressed that villagers will have to establish rules about plot boundaries so that farmers do not plant trees too close to each other.

Farmers all wanted to know if it would be possible to plant the peach trees a little closer than usual to take advantage of the characteristics of the species

(matures earlier, tastes good and is attractive). Then they discussed management. Again, the most important issue was preventing people from stealing the new species. Although local institutions already existed for dealing with stealing from farmers' lands, a woman said that the rules should be revised and communicated to all households. Women were more eager than men in speaking out about rules.

The new fines that the group established were:

- For stealing a tree or plant: RMB ¥ 300
- For stealing one branch: RMB ¥ 150
- For trespassing by livestock: RMB ¥ 5 per step
- For trespassing by poultry: RMB ¥ 10 per animal
- For trespassing by people: RMB ¥ 50
- For each piece of stolen fruit: RMB ¥ 10

Then, the farmers discussed how to implement the regulations. Eventually, to encourage people to speak up when they witness stealing or trespassing, they decided that the witness would get 30% of the fine, the landowner would get 15%, and the village committee 55%. The later sum would be used to buy fertilizers, tools, etc., for the project. At the end of the meeting, the team decided who would plant how many trees, but because it was late, we did not have time to establish a monitoring and evaluation system.

Second round of meetings to plan the new activities and further monitoring

In 2001, the PARDYP team carried out a second round of meetings. The main results are presented below, followed by some reflections on the whole process.

Damaidi: In Damaidi, the team planned to monitor the tea nursery; check survival rate and discuss how to organize the distribution of plants; monitor the goat ("passing the gift") and pig shed projects; and organize a village meeting to evaluate the water conservation project, plan farmer-to-farmer training in walnut grafting techniques, and explain the technology for establishing high

value marketable wild vegetable (*cilabao*) nurseries.

The survival rate of the tea plants was about 80%. Most of the plants were already on order, but often by farmers from other villages. To increase the benefit within the area, the woman implementing this activity decided to give priority to local farmers when selling the plants. An important factor in this project was water supply. Most plants can only be transplanted after 1 year, and water supply must be ensured until then. The team discussed this issue with the authorities in Lijiasi, who agreed to continue providing extra water at preferential rates.

The number of goats in the "passing the gift project" was now 16, and the farmer managing the activity was still very happy. The only issue he raised was that this new species was more susceptible to disease. The revised monitoring and evaluation indicators were: good-looking, smooth fur, fat and strong; high market value; and more people prefer to raise this new variety. The team did not discuss the possibility of "passing the gift" earlier, as Zhao Mingshou thought it was better to adhere to the original contract.

In the pig shed project, the frequency of disease was much lower and the litter size had doubled.

Indicators selected by the local farmers for evaluating the water conservation system were more time available for other work, increased yield, and improvement of the local environment, as the water would stay in the tanks instead of causing erosion. To prepare for the village meeting, the team discussed how to assess these indicators. To measure the difference in available time before and after using the water tanks, they thought of using an H-form or frame, which provides a scale along the middle bar with space for recording reasons along the uprights (Guy and Inglis 1999). Although maize had not yet been harvested, the team could compare the yield of wheat for 2000 and 2001, before and after the water tanks had been built. To evaluate overall perception of the project, they thought of using a drawing of three faces (happy, neutral, sad) (see chapter 4 for an example of the use of this tool). The final step would be to discuss the possibility of building bamboo tanks as a follow-up.

For the farmer-to-farmer training, the team wanted to discuss when the

training should take place, identify the local experts or trainers, the kind of technical support required (if any), and the participants (women-men balance). To introduce the technology for establishing cilabao nurseries, we planned to ask villagers if they would be interested in learning about it, present the projects carried out in Lijiasi and Yangjia, and explain how to establish such nurseries.

The meeting took place at the school, in the evening. More than 30 people attended. The team explained their purpose for being there, then went on to the planned agenda.

To evaluate the water conservation project, the team began by discussing the indicators chosen earlier by the local farmers. Most thought that "Improvement of the local environment" should be removed from the list, but no other indicators were added. However, when invited to use the H-form, the farmers seemed reluctant. One finally took the initiative and voiced his opinion on how to measure labour saved. He drew two columns with the number of working days needed to grow maize before building the water tanks on the left side and, on the right, the number of working days needed after building the tanks. He added a third column to show that he had also saved 6 kg of seeds (he had previously needed 18 kg for his field, but this year he had to buy only 12 kg). Then all the farmers who had built water tanks on their land also reported how many working days they needed before and after. For most, the number days decreased by at least half (e.g., from 10 to 4 days, from 30 to 15, 20 to 10). This year, they had only used the water in the tanks on maize as there was not enough for the wheat crop as well. As the maize had not been harvested, we were unable to measure the yield.

During this process, the amount of seed saved was added as a new indicator. Before building the tanks, villagers had to plant the seed directly into the soil and many plants would die or grow at a different paces and heights. Now, with better access to water, they could first plant the seed in small bags, then transplant them to the fields. This resulted in a more uniform crop, increased the survival rate, and decreased the amount of seed purchased.

Regarding the possibility of building bamboo tanks, farmers said they preferred the cement ones, as they are dug into the ground, are stronger, last longer than the bamboo ones (which frequently leak), and cost about the same amount. Bamboo tanks are no cheaper, because they require the knowledge of craftsmen and bamboo is not available to everyone in the village.

Altogether, the farmers were very impressed with the program. Those who had participated wanted to build more tanks and were interested in building a large pond. Those who had not taken part in the program all wanted to build small tanks in their fields. Whether the program motivated them enough to carry on building tanks on their own, without external funding would have to be evaluated in the future.

Regarding farmer-to-farmer training in grafting of fruit trees, almost everyone in the village now knew how to do this. The farmers said they had learned the techniques from each other and, thus, did not see a need for further training. If they encountered a serious technical problem, they would simply ask a local expert.

The farmers agreed that this type of meeting was useful. The discussions increased their enthusiasm and made them think carefully about their various activities. They thought the time and place were appropriate and would like to have more meetings in the future. The project team learned that because PM&E involves the participation of many households, it might be a good idea to establish a group of local people who could be trained in facilitation skills and with whom the team could work to select or design appropriate monitoring and evaluation tools for new projects. The team could then avoid using tools that were too abstract, especially when applied to large groups. With a local group, we could discuss the development of the project and the approach to adopt during visits to the village.

In Lijiasi: In Lijiasi, the team planned to monitor the cilabao nursery and the peach tree project. We also wanted to prepare a detailed management plan for the peach tree project and identify indicators for monitoring and evaluation. We wanted to discuss the project implementation process to date, find out whether

any problems had emerged, and ask the farmers to think about the various steps in the project and what kinds of external help and technical knowledge they required at each step.

The village meeting took place in the afternoon, next door to the administrative office. About 20 people attended and issues were discussed according to the agenda. Yang Lixin facilitated the meeting with support from the village administrator. Issues raised by the villagers included:

- There was insufficient water for irrigation during the first phase of the project.
- In some fields, leaves turned yellow because not enough fertilizer was applied.
- A manual was needed to show how to recognize the various fruit tree varieties, with details on their yield, quality, and management requirement.

Farmers in Lijiasi and Yangjia established the same management plan: in December, pruning (training requested), in February and March, flower thinning (training requested), and in June, fertilizing. They agreed on four monitoring and evaluation success indicators during the implementation phase: 100% survival rate, enough fertilizer applied, field managed on time according to the steps identified in the plan, trees grow well. For the final phase, they defined the following success indicators: increase in cash income, at least RMB ¥ 1000 income per mu, a yield of at least 10 kg per tree or an income of RMB ¥ 20 per tree, project extension by selling branches to other households with price based on the lowest yield.

In Yangjia: Here, the team hoped to monitor the walnut and *cilabao* nurseries as well as the peach tree project; refine plans for the peach tree project and establish a monitoring and evaluation system; and discuss the soybean project.

In the walnut nursery, 500 trees would have to be grafted before the end of the year and not enough tools were available. In the cilabao nurseries in both Lijiasi and Yangjia, the survival rates were low. However, at the local extension station, where a trial was being carried out, the survival rate was even

lower. Further research and experimentation on the techniques for establishing these nurseries seems to be required.

The wasteland management project was successful. The farmer in charge had already sold half the year's plants for a total of RMB ¥ 300. He and his family harvested a considerable amount of honey for their own consumption and to sell, generating RMB ¥ 500 in income. The income raised from selling rabbits was RMB ¥ 700; the family kept 30 for their own use. They also sold one pig for RMB ¥ 988. On the other hand, the fish pond was a failure, as the water temperature was too low. The chickens had been badly managed, and most had died during the rains or were eaten by dogs or rats. In the following year, the farmer was planning to start planting tangerines and mulberries.

The purpose and agenda for the village meeting were the same as in Lijiasi. The meeting took place at the village leader's house, and about 15 people attended. Zhao Mingshou of the Baoshan Forestry Department took an active role in facilitation. The following issues were raised:

- Some trees had been stolen by outsiders, and the villagers were unable to find the guilty parties. They had decided to use local peach tree varieties to fill the gaps and graft branches from the new variety onto them next year.
- Some trees had developed "black spot disease" because of the high humidity and unstable weather.
- Some leaves had been eaten by pests.

The monitoring and evaluation success indicators selected for the implementation phase included: good community management, a survival rate of 100%, and no stealing of trees. For the final phase, the success indicators selected were: a survival rate of 70% - 90%, a cash income of RMB ¥ 500 per tree, good market value, and development of a good market strategy (e.g., picking the fruits together with leaves to get a higher price).

The team also discussed the soybean extension project, which, unfortunately, had had to be postponed.

Xizhuang: In Xizhuang, the wasteland management and rehabilitation projects

were monitored.

Reflections

The introduction of PM&E together with PTD into the project cycle is still at a very early stage, making it difficult to draw well-defined conclusions. Instead, we are looking at what succeeded and what went wrong, and discussing the skills we still need to acquire as well as the management changes we might have to make to strengthen the process. What is certain is that the PARDYP field staff now realize the usefulness of integrating a monitoring and evaluation system into project management to improve quality. The introduction of PM&E to the PTD process has also forced us to reflect on the mistakes we have made in previous projects. For example, when discussing the site rehabilitation project in Xizhuang, one team member mentioned that project staff should spend more time explaining the aims of the project to farmers and discussing issues with them. As a result, management of the site has changed from a research activity undertaken by outsiders on communal land to on-farm experiments on private land. The activities are based on the needs and desires of the farmers, who are now much more willing to take part in planning and management.

We learned that we should try to plan and allow more time for participatory activities before the (PTD) projects are implemented. In each project, a basis for long-term participation should be established. We also learned that PM&E helps spread the risk of failure between the project team and farmers. In too many previous cases, the project bore all the risk and, therefore, farmers did not care enough about managing the activities well. At the beginning, the farmers and project team should establish a protocol to determine indicators of success, identify who will benefit and how if the project is successful, and establish penalties for project failure caused by bad management.

The introduction of PM&E was accompanied by improvement in the management of projects, and in the quality of our reports and the information gathered in the field. Although we see the advantages of PM&E, we are still unsure how to adequately integrate it into long-term research activities; it might

be more suited for small-grant community development projects. As we have described in this chapter, several of the PARDYP staff have now experimented with PM&E methods, but more time and effort are needed to make them a natural part of our research efforts.

The institutionalization of PM&E: For PM&E to be efficient, it must be institutionalized at each level of project management and all stakeholders must understand its benefits. The PARDYP team had attempted to introduce itself and the project goals during the January 2000 participatory planning meetings; however, only a few people attended those meetings. Thus, the PM&E concepts were first introduced during the February feedback meetings and discussions. Although these meetings were successful in raising people's interest in our project and motivating them to take part in it, they also highlighted the fact that much more time and effort has to be directed at gaining the trust of local people and building common vision of overall goals. A few meetings are not sufficient.

The February meetings showed that better understanding could be the real motivating force for future participation. We also learned that institutionalizing participatory project management at the village level would take time. It will require empowering local people and changing the process of top-down decision-making to a multistakeholder-based, horizontal one. This, in turn, will require the institutionalization of participatory methods among our local government partners. Many initiatives have already been undertaken in that direction within the Baoshan government, e.g., with staff from the hydrology bureau. PARDYP's first year (1996) was also dedicated to identifying who would be our local partners and to building collaborative relations with them. However, more effort is required at the administrative and village levels. PM&E should build on existing community institutions and integrated into the local governance structure and political process. It is noteworthy that in accordance with the "National Village Organic Law," at the end of the year 2000, local villagers had democratically elected village committees in the whole watershed. The "National Village Organic Law" promotes democratic elections, decision-making, management and monitoring of village activities and expenditures.

But first PM&E must be institutionalized within our own project management. For this to happen, we need to improve communication among PARDYP staff, especially between community development and research staff; we need to learn from each other, share lessons learned from mistakes, and give each other advice. We also need to install a participatory system for monitoring and evaluating our own PM&E process. For example, one of the initial goals for our PM&E was "to enhance the self-development capacity of local participants." However, so far PM&E has been mainly a tool of our own staff. We should discuss how it can be used to empower local people. This would have helped us avoid the conflict that recently emerged over the budget for the water conservation program. If we had shown people how to design their own projects from the beginning, they could have modified the budget themselves or prepared a new, detailed one. Now it is too late, as they have already implemented the activity.

Finally, the work done so far leads us to think that PM&E mechanisms should also be introduced into our other research activities. PARDYP has been studying the soil erosion and hydrology cycle of the Xizhuang watershed for more than 4 years now, and we have never established indicators for deciding when the information collected is "good enough" to use to plan concrete action. PM&E could thus increase the accountability of researchers to the local communities. In Yangjia, at one of our February meetings, a local group mentioned that they did not know what benefits the hydrology studies could bring them. It is time to clear the air (*water*) on this question.