

## Chapter 3 Evaluation of Verification Projects

### 3.1 Evaluation by Study Team

The evaluation indices used for the verification projects of the twelve verification villages are shown in Table 3.1.1. As the evaluation principle, the evaluations made by the indices related to the "process" of projects and the ones by the indices related to the "results and effects" of projects were deemed equal. The main evaluation indices on the "process" include ① establishment degree of the project management and operation system, ② provision state of labor, ③ payment state of the costs to be borne, and ④ participation state in the training. The indices on the "results and effects" vary depending on the type of the project. The five-level evaluation standard of the above-mentioned indices ①, ②, and ③ which are common to all projects is shown in Table 3.1.2. A five-level evaluation standard was established for each evaluation index of the project.

**Table 3.1.1 Evaluation indices of verification projects**

| Sector  | Name of the verification project   | Evaluation indices   |   |
|---|--|--|---|
|   |  | Evaluation of process  | Evaluation of effects   |
| Improvement of the residents' operating ability of projects | Support for the establishment of CGTV (Establishment of support system for Terroir Management Committee) | <ul style="list-style-type: none"> <li>• Maintenance state of accommodations</li> <li>• Maintenance state of motorcycles</li> <li>• Improvement of the facilitating ability of local coordinators</li> <li>• Evaluation of the results of PRA training to extension workers</li> </ul>   |   |
|   | (Support for organizing residents)   | <ul style="list-style-type: none"> <li>• Establishment of rules and bylaws</li> <li>• Selection state of officers</li> </ul>   |   |
|   | (Improvement of project implementation residents' ability)   | <ul style="list-style-type: none"> <li>• Evaluation of the results of PRA survey</li> <li>• Results of the accounting and leadership training</li> </ul>   | <ul style="list-style-type: none"> <li>• Management state of development plan</li> <li>• Payment state of the costs to be borne</li> </ul>  |
|   | Improvement of literacy ability  | <ul style="list-style-type: none"> <li>• Results of the training to literacy teachers and lecturers</li> <li>• Results of literacy training (degree of improvement)</li> </ul>   | <ul style="list-style-type: none"> <li>• Recording state of minutes</li> </ul>  |
|   | Support of the establishment of small-scale financial system   | <ul style="list-style-type: none"> <li>• Establishment of rules and regulations</li> <li>• Selection state of officers</li> <li>• Results of the training to the staff in charge of accounting</li> <li>• Management ability (book keeping, auditing, information disclosure)</li> </ul> | <ul style="list-style-type: none"> <li>• Rotation rate of loan (against the number of villagers)</li> <li>• Rate of payment</li> <li>• Ratio of the members (against the number of villagers)</li> </ul>  |
| Fulfillment of BHN  | Improvement of well (for living)   | <ul style="list-style-type: none"> <li>• Establishment of management system</li> <li>• Provision state of labor</li> <li>• Payment of the costs to be borne</li> </ul>   | <ul style="list-style-type: none"> <li>• Management and operation state</li> <li>• Use state of well</li> </ul>   |
|   | Improvement of road  |  | <ul style="list-style-type: none"> <li>• Management and operation state</li> <li>• Use state of road</li> </ul>   |
| Stabilization of farmers' income                            | Introduction of improved seeds and provision of fertilizers and the equipment to improve soil            | <ul style="list-style-type: none"> <li>• Observation of instructed technology</li> </ul>   | <ul style="list-style-type: none"> <li>• Increase of yield</li> <li>• Motivation of residents to pay the costs in the next stage</li> <li>• Motivation of residents to purchase by themselves</li> <li>• Motivation of residents to learn technologies</li> </ul> |

| Sector                          | Name of the verification project  | Evaluation indices   |   |
|---------------------------------|---|--|---|
|                                 |   | Evaluation of process  | Evaluation of effects   |
|                                 | Small-scale irrigation (improvement of wells and marshes)                         | <ul style="list-style-type: none"> <li>• Establishment of management system</li> <li>• Provision state of labor</li> <li>• Payment of the costs to be borne</li> <li>• Improvement state of vegetable field</li> <li>• Training state</li> </ul>                     | <ul style="list-style-type: none"> <li>• Management and operation state</li> <li>• Yield</li> <li>• Increase rate of profit and amount of self-consumption</li> </ul>   |
|                                 | Establishment of cereal bank  | <ul style="list-style-type: none"> <li>• Establishment of management system</li> <li>• Provision state of labor</li> <li>• Payment of the costs to be borne</li> <li>• Training state</li> <li>• Payment of wages to the staff in charge</li> </ul>                  | <ul style="list-style-type: none"> <li>• Management and operation state</li> <li>• Use state of cereal bank</li> <li>• Decrease rate of farmers having insufficient cereals</li> </ul>  |
|                                 | Introduction of improved fodder plant   | <ul style="list-style-type: none"> <li>• Establishment of rules and regulations</li> <li>• Participation in training</li> <li>• Participation state of residents</li> <li>• Payment of the costs to be borne</li> </ul>  | <ul style="list-style-type: none"> <li>• Achievement degree of plan (increase of yield)</li> <li>• Motivation of residents to handle this item after completion</li> <li>• Mortality</li> <li>• Productivity (egg, meat)</li> <li>• Motivation of residents to handle this item after completion</li> <li>• Number of manufactured nutrition blocks</li> <li>• Increased weight</li> <li>• Motivation of residents to handle this item after completion</li> <li>• Mortality</li> <li>• Management state of facilities</li> </ul> |
|                                 | Introduction of improved poultry house and breeding chicken                       | (Ditto)  |   |
|                                 | Manufacturing of feed nutrition block for livestock fattening and sheep fattening | (Ditto)  |   |
|                                 | Vaccination facility  | (Ditto)<br>• Number of vaccinated head   |   |
|                                 | Mini-nursery  | <ul style="list-style-type: none"> <li>• Establishment of rules and regulations</li> <li>• Participation in training</li> <li>• Participation state of residents</li> <li>• Payment of the costs to be borne</li> <li>• Payment state of wages to workers</li> </ul> | <ul style="list-style-type: none"> <li>• Number of produced trees</li> <li>• Sales amount</li> <li>• Management state</li> <li>• Motivation of residents to produce in the next stage</li> </ul>  |
| Tree planting                   | (Ditto)   | <ul style="list-style-type: none"> <li>• Area of tree planting</li> <li>• Survival rate</li> <li>• Target area in the next stage</li> </ul>  |   |
| Management of natural resources | Support of the establishment of regulations on land use                           | <ul style="list-style-type: none"> <li>• Establishment state of rules at village level</li> <li>• Discussion on rules with Commune etc</li> <li>• Establishment state of Inter-Terroir rules</li> </ul>  | <ul style="list-style-type: none"> <li>• State of the public approval of regulations</li> <li>• Observation state of regulations by each village</li> <li>• Observation state of Inter-Terroir regulations</li> </ul>   |
|                                 | Restoration and improvement of vegetation at eroded place                         | <ul style="list-style-type: none"> <li>• Participation in training</li> <li>• Participation state of residents</li> </ul>  | <ul style="list-style-type: none"> <li>• Effectiveness</li> <li>• Motivation of residents to implement in the next stage</li> </ul>   |
|                                 | Prevention of soil erosion at field   | (Ditto)  | (Ditto)   |
| Reduction of women's burden     | Installation of mills   | <ul style="list-style-type: none"> <li>• Establishment of management system</li> <li>• Provision state of labor</li> <li>• Payment of the costs to be borne</li> <li>• Training state</li> <li>• Payment of wages to the staff in charge</li> </ul>                  | <ul style="list-style-type: none"> <li>• Management and operation state</li> <li>• Use state of mills</li> <li>• Result of the reduced milling time of women</li> </ul>   |
|                                 | Improved oven (made of earth)   | <ul style="list-style-type: none"> <li>• Participation in training</li> <li>• Degree of cooperation by men</li> </ul>  | <ul style="list-style-type: none"> <li>• Number of manufactured ovens</li> <li>• Extension rate</li> <li>• Motivation of residents to manufacture in the next stage</li> </ul>  |
|                                 | Improved oven (made of iron)  | <ul style="list-style-type: none"> <li>• Establishment of rules and regulations</li> <li>• Participation in training</li> <li>• Participation state of residents</li> <li>• Payment of the costs to be borne</li> </ul>  | <ul style="list-style-type: none"> <li>• Number of manufactured ovens</li> <li>• Number of ovens sold (amount)</li> <li>• Motivation of residents to manufacture in the next stage</li> </ul>   |

| Sector | Name of the verification project      | Evaluation indices    |  |
|--------|---------------------------------------|-----------------------|--|
|        |                                       | Evaluation of process | Evaluation of effects  |
|        | Handicrafts (manufacturing crafts) of | (Ditto)               | <ul style="list-style-type: none"> <li>• Manufactured quantity</li> <li>• Amount sold (monetary amount)</li> <li>• Motivation of residents to manufacture in the next stage</li> </ul> |

**Table 3.1.2 Evaluation standard by the evaluation indices related to "process"**

| Index                                  | Evaluation score | Description  |
|--|------------------|--|
| Establishment of management system     | 5                | The organization is operating actively and the regulations are properly observed and reviewed. |
|  | 4                | The organization is active and the regulations are observed.                                   |
|  | 3                | Both organization and regulations are established.   |
|  | 2                | Either the organization or the regulations are established.                                    |
|  | 1                | Neither the organization nor the regulations are established.                                  |
| Provision state of labor               | 5                | 100% or more (against the plan)  |
|  | 4                | 80 to 99%  |
|  | 3                | 60 to 79%  |
|  | 2                | 40 to 59%  |
|  | 1                | 40% or less  |
|  |                  |  |
| Payment state of the costs to be borne | 5                | Completely paid back.  |
|  | 4                | 75 to 99%  |
|  | 3                | 50 to 74%  |
|  | 2                | 25 to 49%  |
|  | 1                | 25% or less  |

The results of evaluating all the verification projects in the twelve villages according to the above-mentioned method are shown in Table 3.1.3.

**Table 3.1.3 List of evaluations of the verification projects for each village**

| District name              | Village name           | Improvement of residents' ability |                                 |                              | Fulfillment of BHN |             | Stabilization of farmers' income (improvement of agricultural and sylvicultural productivity) |                        |             |                    |                        |                      |                      |              |               | Management of natural resources    |   |                                     | Reduction of women's burdens |               |             | Average evaluation of each village |
|----------------------------|------------------------|-----------------------------------|---------------------------------|------------------------------|--------------------|-------------|---|------------------------|-------------|--------------------|------------------------|----------------------|----------------------|--------------|---------------|------------------------------------|---|-------------------------------------|------------------------------|---------------|-------------|------------------------------------|
|                            |                        | Support of CGTV establishment     | Improvement of literacy ability | Small-scale financial system | Well               | Road        | Provision of seeds and fertilizers  | Small-scale irrigation | Cereal bank | Improved grassland | Improved poultry house | Feed nutrition block | Vaccination facility | Mini-nursery | Tree planting | Land use regulations establishment | Restoration and improvement of vegetation | Prevention of soil erosion at field | Mill                         | Improved oven | Handicraft  |                                    |
| Katiéna                    | Bougan                 | 4                                 | 3                               | 4                            | 5                  | 5           | 4   | 4                      | 4           | 3                  | 3                      | 4                    | 4                    | 2            | 3             | 3                                  |   | 3                                   | 3                            | 4             | 3           | 3.58                               |
|                            | Kokoun                 | 3                                 | 3                               | 5                            | 5                  | 4           | 5   | 4                      |             | 3                  | 3                      | 4                    | 3                    | 3            | 3             | 3                                  | 3   | 3                                   | 4                            | 3             | 3           | 3.53                               |
|                            | <b>Entire district</b> | <b>3.5</b>                        | <b>3.0</b>                      | <b>4.5</b>                   | <b>5.0</b>         | <b>4.5</b>  | <b>4.5</b>  | <b>4.0</b>             | <b>4.0</b>  | <b>3.0</b>         | <b>3.0</b>             | <b>4.0</b>           | <b>3.5</b>           | <b>2.5</b>   | <b>3.0</b>    | <b>3.0</b>                         | <b>3.0</b>                                | <b>3.0</b>                          | <b>3.5</b>                   | <b>3.5</b>    | <b>3.0</b>  | <b>3.55</b>                        |
| Cinzana                    | Diaba                  | 4                                 | 4                               | 5                            |                    | 4           | 5   | 4                      |             | 2                  | 4                      | 4                    |                      | 5            | 4             | 4                                  | 4   | 4                                   |                              | 4             | 5           | 4.13                               |
|                            | N'Dinzana were         | 3                                 | 4                               | 4                            | 4                  | 4           | 4   | 4                      |             | 3                  | 4                      | 4                    | 3                    | 4            | 3             | 4                                  |   | 4                                   | 3                            | 4             | 4           | 3.72                               |
|                            | Sinebougou             | 4                                 | 4                               | 5                            |                    | 4           | 4   |                        |             | 3                  | 3                      | 4                    |                      | 4            | 3             | 4                                  |   | 3                                   | 4                            | 4             | 4           | 3.80                               |
|                            | Zambougou              | 4                                 | 4                               |                              | 4                  | 4           | 4   | 4                      |             | 3                  | 3                      | 4                    |                      | 3            | 3             | 4                                  | 4   | 4                                   | 2                            | 4             | 4           | 3.65                               |
|                            | Zangourabougou2        | 4                                 | 4                               | 5                            |                    |             | 4   |                        | 4           | 2                  | 2                      | 3                    | 3                    | 3            | 4             | 4                                  |   | 4                                   |                              | 4             | 4           | 3.60                               |
|                            | <b>Entire district</b> | <b>3.8</b>                        | <b>4.0</b>                      | <b>4.8</b>                   | <b>4.0</b>         | <b>4.0</b>  | <b>4.2</b>  | <b>4.0</b>             | <b>4.0</b>  | <b>2.6</b>         | <b>3.2</b>             | <b>3.8</b>           | <b>3.0</b>           | <b>3.8</b>   | <b>3.4</b>    | <b>4.0</b>                         | <b>4.0</b>                                | <b>3.4</b>                          | <b>3.7</b>                   | <b>4.0</b>    | <b>4.2</b>  | <b>3.79</b>                        |
| Soignébougou               | Dafimbougou            | 3                                 | 4                               | 3                            |                    |             | 4   |                        |             | 2                  |                        | 4                    | 4                    | 1            | 2             | 3                                  | 4   | 4                                   | 3                            | 4             | 4           | 3.27                               |
|                            | Sakoibougou            | 2                                 | 3                               | 4                            |                    |             | 4   |                        |             | 3                  | 2                      |                      |                      | 2            | 3             | 3                                  | 2   | 3                                   |                              | 3             | 4           | 2.92                               |
|                            | Siradoba               | 3                                 | 4                               | 4                            |                    |             | 3   |                        | 4           | 2                  | 3                      |                      |                      |              |               | 3                                  | 2   | 4                                   |                              | 3             | 4           | 3.25                               |
|                            | Dougoutiguibougou      | 3                                 | 4                               | 4                            |                    | 3           | 4   |                        |             |                    | 4                      | 4                    |                      |              |               | 3                                  | 2   | 4                                   | 2                            | 4             | 4           | 3.46                               |
|                            | Fabougou               | 3                                 | 3                               | 4                            |                    |             | 4   |                        |             |                    |                        | 3                    |                      |              |               | 3                                  | 1   | 3                                   |                              | 4             | 4           | 3.20                               |
|                            | <b>Entire district</b> | <b>2.8</b>                        | <b>3.6</b>                      | <b>3.8</b>                   |                    | <b>3.0</b>  | <b>3.8</b>  |                        | <b>4.0</b>  | <b>2.3</b>         | <b>3.0</b>             | <b>3.7</b>           | <b>4.0</b>           | <b>1.5</b>   | <b>2.5</b>    | <b>3.0</b>                         | <b>2.2</b>                                | <b>3.6</b>                          | <b>2.5</b>                   | <b>3.6</b>    | <b>4.0</b>  | <b>3.16</b>                        |
| Evaluation of each project |                        | <b>3.33</b>                       | <b>3.67</b>                     | <b>4.27</b>                  | <b>4.50</b>        | <b>4.00</b> | <b>4.08</b>   | <b>4.00</b>            | <b>4.00</b> | <b>2.60</b>        | <b>3.10</b>            | <b>3.80</b>          | <b>3.40</b>          | <b>3.00</b>  | <b>3.11</b>   | <b>3.42</b>                        | <b>2.75</b>                               | <b>3.42</b>                         | <b>3.29</b>                  | <b>3.75</b>   | <b>3.92</b> | <b>3.54</b>                        |

## **1) Evaluation of each project**

The projects evaluated fairly high (evaluation score of 4 or more in all villages) are ① well, ② small-scale financial system, ③ provision of seeds and fertilizers, and ④ roads, small-scale irrigation (vegetable field), and cereal bank, followed by the introduction of handicrafts (soap manufacturing was evaluated the highest). Among these projects, those related to the BHN infrastructure were strongly requested from the first and the residents ardently desired the improvement of the infrastructure, in order to attain a good performance of the projects. Also, the projects may ensure profits within a short period of time such as seeds and fertilizers, vegetable cultivation, and soap manufacturing are highly evaluated.

A fact to be specially mentioned is that the small-scale finance project was better operated than expected by the study team at the beginning. There was almost no unpaid cost or accounting trouble and all villages properly managed the small-scale finance project. The reasons for this good operation are that there was a strong potential demand for funds in the villages from the beginning, and the accounting ability of residents and the training effects on the improvement of the safe operation ability matched well. These highly evaluated projects have a strong adaptability to be planned in the Master Plan project.

On the other hand, poorly evaluated projects concern ① improvement of grassland, ② soil conservation (by joint work), ③ mini-nursery, and ④ tree planting. Many of these projects are related to public lands or joint work. However, the difficulties of the projects are not decisive except for the improvement of grassland. As for the regulations on the Inter-Terroir land use, it was confirmed through the verification study that the difficulty of realization was lower than expected by the study team at the beginning. As the regulations on land use change the traditional custom of land use, they usually need many hours to obtain the agreement by local residents.

However, it is fairly evident that the residents were conscious that "they must conserve the natural resources through the regulations of land use". If the administrative support provides the opportunity of mutual discussions by residents of different villages and allows the regulations of land use, the establishment of regulations can be realized. Furthermore, many of these poorly evaluated projects have a relatively strong relationship with the combat of desertification. Therefore, it is very important to include them in the Master Plan while reflecting on the experiences obtained from the verification projects.

## **2) Evaluation of each district and village**

By totaling the project evaluation points for each village and comparing them through simple averaging, the villages can be evaluated in the order of ① Dlaba and ② villages shown below Sinebougou in Cinzana District (in the Table). The evaluation of villages in Cinzana District increased with the progress of the study.

By comparing the evaluation results with the list of baseline conditions affecting the implementation of verification projects in Table 2.1.3 in Chapter 2, the conditions showing a high correlation with the evaluation are "ability of village leaders", "degree of education", and "ability of local coordinator". From this result, the effective measure to make "the villages with high performance" would be "to assign the facilitators with high quality after raising the education level of residents to a certain degree and to put efforts in the improvement of the ability of village leaders while building a trust relationship between the village and the project implementing side". No significant

correlation is observed between "lots of experiences in project" and the "degree of problem recognition on the progress of desertification before starting the project" with the "project performance".

With the "ability of local coordinator" being closely related with the project performance, large differences have been generated among the evaluations of districts during the three years after the start of the verification study. The reasons for generating differences among districts from the standpoint other than the ability of local coordinator can be analyzed as follows.

① Katiena District

This district has the least experience of being supported in the past among the three verification districts. The initial handling state of the project was the best among the three districts. The reasons for being good are ① having less experience in being supported and connected to the generation of fresh and pure motivation, and ② as the district consists of two villages, less than other districts, the support was well observed. However, with the progress of time, we could observe an aspect in which "the district is relatively inferior to Cinzana district to be mentioned later in the original measures to take or in the active expansion of project although it was faithful to the advice". This fact may reflect the difference of basic educational level as well as the ability of the local coordinator.

② Cinzana District

This district had much experiences in being supported in the past among the three verification districts. Probably because there is an elementary school in the district, the educational level of residents ranked the highest among the three districts. The initial handling of project of N'Dinzanawere Village in this district was not favorable to the extent that the organization of residents was delayed in the twelve villages. However, this district showed the highest project performance among the three by adopting the original measures and by actively extending the project, and it indicated the extension effects of project that includes the nearby districts. The main reason for these results was that the project has been widely recognized and informed to the residents through the risk conscious project activities as for the deterioration of natural resources, while being backed up by the high level of basic education.

③ Soignebouyou District

In this district, comprehensive measures for the combat of desertification were implemented in the verification project of the Japan Green Resources Corporation (JGRC) for four years from 1997 to 2000 to a part of this district (one third of the farmers). In this respect, this district had experienced most of the technologies for the combat of desertification undertaken for the JICA verification project. However, the above-mentioned verification project was implemented from the standpoint of "whether the technologies could take root in the area". Therefore, the project was implemented by indicating the menu of preventative measures (project) to the target farmers and asking the provision of simple labor to the farmers on the menu they desired, but did not request the farmers to bear the related costs.

The said project was not implemented based on the farmers' organization established willingly by the farmers as seen in the JICA verification project. Rather, the experiences of JGRC project

strengthened the belief of the residents that "the project is given to them", that would have interfered with the new JICA verification project. The handling state of verification project of this district is the worst in the three districts.

However, while this district implemented the measures for soil conservation most actively and successfully among the twelve villages, it was not active in providing labor to the joint work. The Terroir Management Committee had to add therefore more than 30% burden on the 70% burden to beneficiaries, which constitutes the standard of JICA verification project. This district seemed active in the project items for which it experienced the effectiveness through the past JGRC verification projects, etc.

### 3) Evaluation of project from the standpoint of farmers' agricultural operation

By estimating the income and expenditure of farmers before and after the project, the income with project is assumed to exceed three times the one without project. Most of the income came from the millet sales. In 2001, the farms carefully examined by the said UPA raised the yield of 3,000 kg/ha and other farms (those that did not use the improved varieties or fertilizers) achieved a yield of 2,000 kg/ha. The millet price increased to 120 Fcfa/kg in 2001 from 50 Fcfa/kg in 2000.

In estimating the yield, the unit yield of millet of 1,300 kg, which was the target of Master Plan as mentioned above by considering that the cultivation period in 2001 had favorable situations such as good weather, and the present unit price of 70 Fcfa/kg was used. From the above-mentioned data, the participation in the verification project may affect positively the improvement of agricultural operation and increase of income of the farmers.

**Table 3.1.4 Estimation of income at the carefully examined UPAs in Dlaba before and after the project**

| Indices                                   | without project<br>(2000) | with project<br>(2001) | Increase/<br>decrease | Remark  |
|---|---------------------------|------------------------|-----------------------|---|
| Number of UPA family members              | 12                        | 12                     | -                     |   |
| Agricultural area (ha)                    | 9                         | 9                      | -                     |   |
| Unit yield of millet (kg/ha)              | 620                       | 1,300                  | 680                   | Unit yield in 2000 was the average of the village in the past five years.                       |
| Millet production (kg)                    | 5,580                     | 11,700                 | 6,120                 |   |
| Amount of self-consumption (kg)           | 3,600                     | 3,600                  | -                     | 300 kg/year per a family member   |
| Amount sold (kg)                          | 1,980                     | 8,100                  | 6,120                 |   |
| Spot sale price of millet (Fcfa/kg)       | 50                        | 50                     | -                     |   |
| Gross output (Fcfa)                       | 279,000                   | 585,000                | 306,000               |   |
| Cash income to farmers (Fcfa)             | 99,000                    | 327,000                | 228,000               | The cash income for 2000 constitutes estimation. The one for 2001 represents the actual income. |
| Cash income from stock raising (Fcfa)     | 30,000                    | 30,000                 | -                     |   |
| Other cash income (Fcfa)                  | 37,000                    | 37,000                 | -                     |   |
| Total cash income                         | 166,000                   | 394,000                | 228,000               |   |
| Cash income for each family member (Fcfa) | 13,833                    | 32,833                 | 19,000                |   |

## 3.2 Evaluation by Farmers

### 3.2.1 Residents Participatory Evaluation

A participatory evaluation by the farmers themselves was implemented for each item of the verification project. The purposes of implementing the said evaluation are as follows.

For the residents, ① the project implemented independently in the village is evaluated and results in the effective implementation of project in the future. ② Through the experience of participatory evaluation, the project management ability of the residents is improved. On the other hand, for the JICA study team, the said evaluation allows understanding the frank opinions of many residents on the project and feed them back on the formulation of Master Plan.

#### 1) Implementation procedure of the participatory evaluation

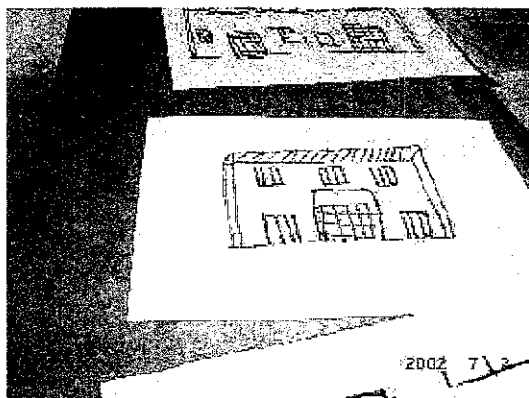
The evaluation was implemented according to the following procedure.

**Table 3.2.1.1 Procedure of participatory evaluation**

| Procedure                      | Description  | Results                   |
|--------------------------------|--|---------------------------|
| 1. Drawing of project contents | The residents were divided into male and female groups and asked to draw pictures of the projects they consider effective. | Drawings of projects      |
| 2. Classification of pictures  | Many pictures were classified and the participants were asked to select the picture that was easy to understand among all. | Ditto                     |
| 3. Voting                      | 10 to 20 pebbles were distributed to each participant.   |                           |
| 4. Collection of results       | Participants were asked to vote for the project they deemed most effective.  | Table of total evaluation |
| 5. Announcement of results     | The table showing the results is formulated in the order from the project with the largest number of votes.                |                           |



Female group members are drawing the picture of project.



A picture of cereal bank drawn by the residents.



## **2) Evaluation results**

From the results of the residents participatory evaluation implemented in each village from July 2002 to the end of November 2002, the top three projects most highly evaluated are shown in Table 3.2.1.2. Some projects implemented in FY 2002 such as the restoration of road between Dlabá and Zangourabougou II, vaccination facility in N'Dinzanawere, and feed nutrition block were still being implemented or not implemented at the time of the residents participatory evaluation. Therefore they could not be evaluated. By considering these matters, the following conclusions can result from the Table.

- ① A small-scale financial system was highly evaluated both men and women. From the results of PRA survey implemented at the beginning of the study, a lack of activity fund was deemed having a high priority by both male and female residents because it was ranked the second and the fourth issues of each village, and the financial system was actually established close to the residents, whose convenience was actually felt by the residents.
- ② The literacy center (including training) was highly evaluated both by men and women. From the results of the PRA survey, the necessity of literacy education and various training constituted an issue only for some villages and did not have a high priority for the residents. However, the residents themselves felt the necessity of a literacy center by improving the project implementation ability of residents by the study team through literacy education, training of accounting and leaders, and training of agricultural and sylvicultural technologies for all the verification projects, in order to achieve the above-mentioned results.
- ③ The project items highly evaluated by women are vegetable cultivation, soap manufacturing, and mill construction. These activities were only targeted for women except for vegetable cultivation and have been evaluated as they improved the chance of cash income for women. From the results of the PRA survey, the projects with high priority as the women's issues were "lack of drinking water", "overworking at milling", "remotely located medical clinic", "lack of vegetable seeds and water", and "lack of activity funds". Among these items excluding the medical clinic not adopted by the verification project, the item of "lack of activity funds" was treated to establish a small-scale financial system, the item of "lack of vegetable seeds and water" was handled in the vegetable field improvement project, while the item of "overworking at milling" was handled in the mill construction project. These projects were highly evaluated.
- ④ However, with regard to the well construction project for treating the item of "lack of drinking water", not many villages evaluated this project in the top three projects among the present evaluation result. The reason for this is that only four out of twelve villages constructed or repaired wells.

**Table 3.2.1.2 Top three projects evaluated by the residents participatory evaluation in each village for men and women**

| Village name            | Sex   | 1st place           | 2nd place                   | 3rd place  | Number of residents participated |
|-------------------------|-------|---------------------|-----------------------------|--|----------------------------------|
| Bougan                  | Men   | Road                | Literacy center (training)  | Well   | 15                               |
|                         | Women | Road                | Improved oven               | Cart   | 4                                |
| N'Dinzanawere           | Men   | Small-scale finance | Literacy center             | All training   | 10                               |
|                         | Women | Mill                | Soap manufacturing          | Literacy center (training)   | 10                               |
| Dlaba                   | Men   | Small-scale finance | Marsh improvement           | Literacy center (training)   | 10                               |
|                         | Women | Training            | Fertilizer distribution     | Marsh improvement, vegetable field, well                             | 10                               |
| Sinebougou              | Men   | Small-scale finance | Fertilizer distribution     | Literacy center  | 10                               |
|                         | Women | Soap manufacturing  | Training                    | Dying  | 13                               |
| Zambougou               | Men   | Tree planting       | Fertilizer distribution     | Vegetable cultivation / marsh improvement                            | 17                               |
|                         | Women | Dying               | Vegetable cultivation       | Mill   | 10                               |
| Zambourabougou II       | Men   | Small-scale finance | Training                    | Cereal bank  | 13                               |
|                         | Women | Small-scale finance | Literacy center (training)  | Vegetable field  | 8                                |
| Dafinbougou             | Men   | Well (JGRC)         | Literacy center             | Small-scale finance  | 7                                |
|                         | Women | Soap manufacturing  | Soil conservation           | Mill   | 12                               |
| Dougoutiguibougou       | Men   | Small-scale finance | Fertilizer distribution     | Road improvement / cart allocation                                   | 10                               |
|                         | Women | Soap manufacturing  | Extension of improved seeds | Small-scale finance / training (inspection of developed district)    | 10                               |
| Sakoibougou             | Men   | Small-scale finance | Fertilizer distribution     | Soil conservation  | 10                               |
|                         | Women | Small-scale finance | Soap manufacturing          | Training (inspection of developed district) / macaroni manufacturing | 10                               |
| Siradoba/<br>Bougounina | Men   | Small-scale finance | Literacy center (training)  | Soil conservation  | 10                               |
|                         | Women | Small-scale finance | Literacy center (training)  | Soap manufacturing   | 10                               |

Note: The projects having the same score are divided by a slash (/) and indicated in parallel to each other.

### 3.2.2 Results of the Questionnaire to Residents

#### (1) Purpose of the questionnaire

A questionnaire was prepared for the residents at the completion of the verification study for understanding the participation of residents, evaluation of the activities, and intention of residents in the future by crosscutting all the activities implemented in the verification projects. Each UPA would have participated in various verification project activities simultaneously, a matter that was not well understood in past studies. The present study allows understanding the above-mentioned situation and quantitatively analyzed the items of verification projects which were qualitatively evaluated in the past.

#### (2) Implementation method

The questionnaire was prepared dividing into two categories, that is, organization of residents and other sectors. The questionnaire and the table showing the results are shown in ANNEXE V 3.2.2-1.

### **1) Organization of residents**

The questionnaire concerned six officers of each village (honorary chairman, chairman, vice chairman, secretary general, auditor, and vice auditor), altogether seventy two village officers in twelve villages by using CGTV as the population.

### **2) Other sectors (land use, forest, stock raising, improvement of living, soil conservation, agriculture, and handicrafts)**

114 UPAs, one third of the total of 343 UPAs, were randomly selected by using the entire UPAs of twelve verification villages as the population.

The study was implemented according to the following procedure.

- ① Formulation of the draft of questionnaire: November 2002, Formulated in Tokyo before taken to the project site.
- ② Pre-test: December 31, 2002. A preliminary study was undertaken in two UPAs with the cooperation of the study team members and the staff in charge of study (counterpart, DRAMR, and SLACAER) in Zambougou Village of Cinzana District. The draft questionnaire was corrected based on the results of this preliminary study, then the contents were fixed.
- ③ Main study: Main study was carried out in the verification villages concurrently by dividing them into five study groups from January 2 to 5, 2003.
- ④ Input to data sheet, formulation of statistic table and the table showing the overall results for each field: These documents were formulated on January 13 in both Japanese and French and distributed to the study team members and counterparts. The counterparts analyzed these documents, formulated a report, then examined and corrected the contents at the general examination committee on the agricultural and sylvicultural monitoring results on January 27.

### **(3) Outline of the study results**

The results of questionnaire are explained in detail in the column of "Evaluation" in the Verification Project Monitoring Summary shown in Item 2. 2. The results of questionnaire on the organization of residents and other sectors can be summarized as follows.

#### **1) Organization of residents**

As 99% answered that "it is good to have established CGTV" and "CGTV is necessary for the development of villages in the future", the method to establish CGTV and make it a measure for the development of village has been accepted by the villagers.

As 92% answered that they were confident in the continuation of activities as CGTV in the future, the training to improve the project implementation ability of CGTV officers had a favorable result. On the other hand, 88% answered that they could force inadequate officials to change by themselves. Then, some villages were deemed having insufficient ability for self-reform. In N'Dinzanawere and Dougoutigibougou Villages, minutes were not formulated, showing that improvement of literacy ability of clerks was insufficient.

## 2) Other sectors

### ① UPAs for study

- The ages of the UPA chiefs for study were a minimum of 25 years and the maximum of 100 years, with the average of 54.7 years of age. The standard deviation was 14.3 years.

### ② Participation or involvement in project activities

- Participation of the residents in various activities was higher than expected. In the field of BHN facilities or forestry conservation having highly public characteristics, most UPAs participated in the activities.

| Sample activity    | Tree planting | Soil conservation | Road repair | Construction of meeting hall |
|--------------------|---------------|-------------------|-------------|------------------------------|
| Participation rate | 99%           | 60%               | 64%         | 93%                          |

- More than half UPAs were participating or involved in the projects aiming at the stock raising and vegetable cultivation groups.

| Sample activity                    | Grassland improvement | Vaccination | Improved poultry house | Livestock raising | Vegetable cultivation |
|------------------------------------|-----------------------|-------------|------------------------|-------------------|-----------------------|
| Ratio of participation/involvement | 83%                   | 53%         | 96%                    | 91%               | 55%                   |

Note: "Involvement" represents the cases in which the residents bear the costs or help the activities even if they do not directly participate in the activities.

- With regard to the projects related to crops which are targeting the residents, almost all UPAs participated in the related activities at various levels partly because that the provided seeds and fertilizers were equally distributed to the UPAs in the village.
- From the above-mentioned data, each UPA was deemed being involved in multiple project activities and UPA members participated in activities being assigned to their own roles.

### ③ Evaluation of project contents and implementation method

- The project activities were generally evaluated high. Furthermore, the ratio of using the constructed facilities was high. Therefore, it can be said that the project measures were functioning effectively.

| Sample activity | Large diameter well | Meeting hall | Mill | Cereal bank | Mini-nursery |
|-----------------|---------------------|--------------|------|-------------|--------------|
| Ratio to use    | 80%                 | 97%          | 90%  | 77%         | 62%          |

- The measures for software such as technology instruction or training were generally evaluated high. However, the raised level of ability or technology could not be sufficiently understood in this study. From the state at project sites, the ability and the technology levels seemed to have improved gradually, but not fast.

| Sample training    | Nursery | Improved fodder plant | Vaccine | Poultry farming | Sheep fattening | Soil conservation | Farm product cultivation | Vegetable cultivation |
|--------------------|---------|-----------------------|---------|-----------------|-----------------|-------------------|--------------------------|-----------------------|
| Participation rate | 90%     | 47%                   | 35%     | 43%             | 52%             | 93%               | 64%                      | 37%                   |
| Satisfaction rate  | 96%     | 60%                   | 17%     | 94%             | 71%             | 87%               | 87%                      | 78%                   |

#### ④ Motivation and independence towards future

- The residents generally showed a strong motivation to continue the verification projects by themselves in the future. With regard to the activities that needed a large initial investment but required constant physical resources that could not be procured in villages, some residents wished not to continue unless there was an external support, but most of them were highly motivated in proceeding by themselves.

| Sample activity                 | Grassland improvement | Improved poultry house | Livestock fattening | Soil conservation | Improved seed | Vegetable cultivation | Handicrafts |
|---------------------------------|-----------------------|------------------------|---------------------|-------------------|---------------|-----------------------|-------------|
| Ratio to continue by themselves | 22%                   | 47%                    | 47%                 | 73%               | 96%           | 97%                   | 88%         |

### 3.2.3 Holding of a Meeting to Exchange Opinions among Residents

In concluding the verification study, a meeting to exchange opinions among residents was held on January 10, 2003 in the elementary school of Zambougou Village of CINZANA District (built with the Japanese grant aid) to summarize the project activities developed in the villages. The meeting was held with the purposes 1) to learn the experiences of other villages and help them developing their own villages (including nearby villages), 2) to improve the ability to organize residents' own experiences through the opportunity to announce the handling state of the village in the workshop style, and 3) to clarify the problems for which the residents were not aware of in their own village through questions and answers.

Approximately 100 people participated in the meeting including the residents of twelve verification villages (three from each village including one woman), residents of nearby twelve villages (two from each village), chiefs of related Communes, counterparts, local coordinators, steering committee members, and study team members. The meeting was conducted in the local Bambara language.

[Program of the opinion exchanging meeting]

- 08:45 - 08:50 : Greetings by the leader of JICA study team and the representative of steering committee
- 08:50 - 10:50 : Presentation by villages (10 minutes by each village x 12 villages)
- 10:50 - 11:10 : Recess
- 11:10 - 12:00 : Questions and answers
- 12:00 - 12:30 : Award ceremony on the presentations and superior projects
- 12:30 - 14:00 : Lunch
- 14:00 - 16:00 : Visiting of project sites (nursery for the tree planting in Dlaba Village, irrigated vegetable field in Zangrabougou II Village, demonstration of soap manufacturing by village women)
- 16:00 : Closing

### (1) Presentations by villages

In the twelve verification villages, many project activities were developed based on the requests of villages. Each village responded differently to these activities. The contents of presentation by the village representatives showed the evaluation of specific project activities backed up by the situation of each village and had the theme of future sustainability and spreadability.

The villages reported concretely (a) the problems they encountered in implementing the verification project activities, (b) how they handled and solved these problems, (c) the results they obtained, and (d) the spreadability of the activities. The presentations by twelve villages were more active and stately than the study team expected. Almost half of the presentations were made by women.

The presented matters were mainly related to the solution of problems in which residents were highly interested in such as the management method of plants or the penalty of residents refusing the participation. The CGTV chairman of Kokoun Village emphasized the importance of literacy education and explained in detail both the merits and demerits of the implementation method of the said education. Zangourabougou Village explained the involvement of village and village men in the installation of irrigated vegetable field done by the village women and the measures for the maintenance and management method to prevent the road deterioration. Bougan Village introduced the purchasing of draft cows and cars using the small-scale financial system. However, the presentation techniques actually differed significantly according to each village. The outline of presentation by the villages and the level of presentation technique are shown in Table 3.2.2.1.

**Table 3.2.2.1 List of presentation contents by each village**

| District     | Village           | Presentation contents  |   | Level of presentation technique |
|--------------|-------------------|--|---|---------------------------------|
|              |                   | Problem  | Solution and result   |                                 |
| KATIENA      | Bougan            | Lack of agricultural equipment such as draft cow or spade  | Purchased the equipment through the establishment and use of small-scale financial system. Improve work efficiency by themselves.                                   | 4                               |
|              | Kokoun            | Large number of illiteracy residents   | Clarified the importance of literacy education by themselves.<br>With the implementation of literacy education, 50 new literary residents were born.                | 1                               |
| CINZANA      | Dlaba             | Disappearance of forests   | Smooth implementation of every-other-year afforestation (0.5ha) with seedlings produced in nursery  | 4                               |
|              | N'Dinzanawere     | Responses refusing the participation-type method from the past experience of project done by some organization | Promoted the penetration of the significance of activities with JICA method. Promoted the change of residents' consciousness through the election of CGTV officers. | 10                              |
|              | Sinebougou        | Indifference of residents to plant production and tree planting  | During the discussion at the general assembly of farmers, a woman volunteered to manage nurseries and implemented satisfactorily.                                   | 3                               |
|              | Zambougou         | Non-existence of joint fund that the residents can use.  | Established a joint fund by themselves and were accumulating and using it according to the members of each UPA.   | 7                               |
|              | Zangourabougou II | Surfacing of the request for the installation of vegetable field for women                                     | Improved the irrigated farm using the existing large diameter well with the cooperation of male residents. Started the vegetable cultivation.                       | 2                               |
| SOINEB OUGOU | Dafimbougou       | Soil degradation caused by soil erosion  | Implemented the preservation of soil conservation function by installing a stone ridge bank.  | 4                               |

| District | Village          | Presentation contents   |   | Level of presentation technique |
|----------|------------------|---|---|---------------------------------|
|          |                  | Problem   | Solution and result   |                                 |
|          | Dougoutigibougou | Frequent overworking by milling that continues everyday                     | Used the hours saved from overworking for milling with the installation of mill.  | 7                               |
|          | Fabougou         | Impossible calling of regular meetings due to insufficient meeting facility | Held meetings in good timing with the installation of a meeting hall.   | 10                              |
|          | Sakoibougou      | Lack of funds to purchase chemical fertilizers to secure the yield          | Collected the additional money for the payment of fertilizer with their own measure and consecutively secured the necessary amount with the reduction of purchasing price due to mass purchasing. | 9                               |
|          | Siradoba         | Lack of cereal warehouse  | Solved the problem of lack of cereals during the changeover period with the establishment of cereal warehouses.   | 10                              |

## (2) Questions

During the questions session after the presentation by villages, few opinions were made on the comparatively simple activities such as the "measures for purchasing chemical fertilizers" or "inadequately prepared meeting facility", but many opinions were given on the projects accompanying the new infrastructure improvement such as "nursery production and tree planting", "irrigated vegetable field", or "mill". Some villages talked about the software improvement such as "small-scale finance" or "literacy education".

We need to mention particularly that in the Ségou District, the customs to regulate the villagers' activities (through penalty) have been prevailing traditionally even at present and the residents try to provide their labor or pay the burden imposed to beneficiaries as they initially promised to the study team. This fact was announced by multiple villages. All villages announced that they have almost no arrear for the "small-scale finance" project and the system was progressed satisfactorily. The participants of the assembly from the nearby villages of verification villages asked concrete questions on the implementation of activities or requested more detail information. The questions and answers among the residents are as follows.

<Was the participation of women realized?>

(All villages expressed their appreciation to the JICA verification projects for making women's activities possible.)

Women are now actively participating in the activities together with men. There is no difference between men and women and there is no case in which husbands do not show understanding. Nowadays, men even allow women to visit the place(s) outside the village without watching them.

<Was the joint work conducted satisfactorily?>

- With the clarification activities of JICA local coordinators, the joint work for various activities was activated and undertaken smoothly. Some villages (Kokoun, Sakoibougou, Dafimbougou, and Zambougou Villages) want to continue joint work in the future. For example, penalty on arrears is directly and indirectly imposed on the related parties to share the responsibility. In order to receive the small-scale finance, it is necessary to pay the penalty to others such as family or friend

(Example of Kokoun Village).

<For the tree planting, what type of tree is suitable?>

- Water and termites are the problems for the management of plants after they are planted. Eucalyptus does not have these problems. At present, seedlings in Dlaba Village are growing quite well.

<Is the agreement on land use in Cinzana District conducted satisfactorily?>

- This agreement was established after the degradation of silvicultural resources was widely recognized by the related residents. With this agreement, protection of remaining resources and their recovery as much as possible are considered possible. With the cooperation of the villages having nurseries, seventeen villages plan to plant trees every year. Of course, the plants will be charged in order to greatly encourage the activities of plant producers who are closely related to the long survival of the agreement.

### **(3) Award presentation to the presentation contents and superior projects**

The level of presentation contents was examined by the counterpart and local coordinators after the presentation by villages and the questions and answers session. Three villages were awarded. The order of villages according to the presentation level and their themes are as follows.

- 1st place: Kokoun Village (KATIENA District): "Promotion of literacy education"
- 2nd place: Zangourabougou II Village (CINZANA District): "Implementation of vegetable field by ourselves"
- 3rd place: Sinebougou Village (CINZANA District): "Merits of nurseries for tree planting"

The study team evaluated and awarded the results of farmers' handling of the promotion of verification project activities for three years. The village names and their themes are shown below.

- Grand Prix; Dlaba village: "Seedling production and tree planting" (They planted trees in the area of 0.5 ha every other year.)
- 1st place: Zangourabougou II Village: "Irrigated vegetable field" (They implemented it by following the irrigated vegetable field under verification of other village by themselves.)
- 2nd place: Bougan village - Kokoun Village: "Road management" (They continuously planted roadside trees not planned initially along the project road by themselves.)
- 3rd place: Dafimbougou village: "Stone piling for soil conservation" (They implemented the initial plan securely and demonstrated the effects of soil conservation more than expected)

### **(4) Evaluation**

The irrigated vegetable fields in the project are enclosed by the wire net. Zangourabougou II Village that followed the vegetable fields as their own project enclosed the farms by small miscellaneous trees because they did not have the fund to buy the wire net. "Irrigated vegetable field" brought merits to the participated farmers because they improved the nutrition of residents (the residents said they were satisfied even in this aspect) and became the income source for women. Many villages wanted to follow the vegetable field project in the future. Nearby villages also showed interests in the production of seedlings and some villages clarified that they were trying to develop small nurseries.



Manufacturing of soap and iron oven are quietly penetrating to the nearby villages already being backed up by the demands. Vaccination facilities are also used by the farmers in the nearby villages. (The results of visiting to see the projects in the verification villages by the nearby villages by themselves are shown in ANNEXE V 3.2.3-1.)

The activities that the residents can visually confirm and recognize the price by themselves will extend to some extent. However, the software activities requiring the trained people for the maintenance and operation such as "small-scale finance" or "literacy education" are necessary for the residents, but did not increase to the extent that the residents wanted to follow on their own. Nearby villages heard about the verification villages and evaluated the results, and wondered why they were not selected. They wanted to participate if there are any chances of these project activities.

In the meeting, it was verified that the residents most eagerly listened to the successful cases of the farmers in the same district. Therefore, the meeting can be self-evaluated as effective in that it promoted the extension of project to nearby villages. By responding to this result, the study team decided to include in the Master Plan this kind of meeting to exchange opinions on the handling of projects by the residents on regular basis.

### **3.3 Sustainability and Spreadability of Projects**

#### **1) Sustainability**

As the instruction on operating and managerial aspects of verification projects is given by the study team, it is natural that the project is not interrupted. However, there is a problem whether the sustainability of the project can be secured by the farmers themselves after the study team leaves the place.

For the projects showing direct economic effects to the farmers and those with the effects that should be demonstrated in the acceptable period by farmers, sustainability can be ensured. However, the projects that take more time to show results have weaker sustainability, even if their significances is recognized by the farmers from the broad standpoint. For example, in the nursery project, securing of wages for plant growth is difficult because the demand for plants (tree planting) is not strong and the market price is low. Securing of the cost for the lecturers of literacy training is also difficult. Stone piling and repair for soil conservation need long period of time until the effects are demonstrated. Difficulty of securing the maintenance and management costs of the projects makes the securing of sustainability of the projects difficult.

In order to secure the maintenance and management costs of the projects from which direct income cannot be expected, a method to ask the farmers to bear the costs each time is available. However, considering the economic state of farmers, this method is not realistic. It is thus planned to deposit the money collected from the farmers in the verification projects in the small-scale financial system as the time deposits under the name of Terroir Management Committee and subsidize the interests from the above-mentioned deposits as the operating and management costs of the projects having strong public characteristic but low profitability. This plan shall be implemented after getting the approval of the Terroir Management Committee.

In the verification districts, many Terroir Management Committees decided to pay the fees for the

lecturers of literacy training in the villages from the interests of time deposits. In the future, whether the small-scale financial system can be operated and profits successfully and whether the operating fund of Terroir Management Committee can be accumulated will become the important indices for securing the sustainability of entire projects.

## **2) Spreadability**

The residents of nearby villages showed strong interest in the verification projects. The women's group of Zangourabougou II Village used the well installed by the village for the irrigation water without the support of JICA study team. They built the fence to prevent the intrusion of domestic animals, and started the vegetable cultivation following the examples of other villages. The study team expects that the similar movement will occur in other nearby villages.

Inspections of verification projects were made by nearby villages that would develop into the above-mentioned movement. Some villages were visited by members of villages located 40 km apart out of which some made inspections several times. The verification projects that the visiting villages showed interest are ① irrigated vegetable field (14 villages), ② small-scale finance (11 villages), ③ improved seeds and cultivation method (8 villages), ④ soap manufacturing (6 villages), ⑤ road improvement, well construction, nursery and tree planting (3 villages respectively), and ⑥ poultry raising (2 villages). The verification projects ① to ④ have the contents in which the effects are demonstrated immediately to the private economy of farmers.

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