

Japan International Cooperation Agency

Ministry of Mine, Energy and Water
The Republic of Mali

**THE STUDY OF PREVENTION
FOR
DESERTIFICATION
IN
THE SOUTH REGION OF SEGOU
IN
THE REPUBLIC OF MALI**

Final Main Report

Verification Study

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Japan Green Resources Corporation

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Location Map of the Study Area

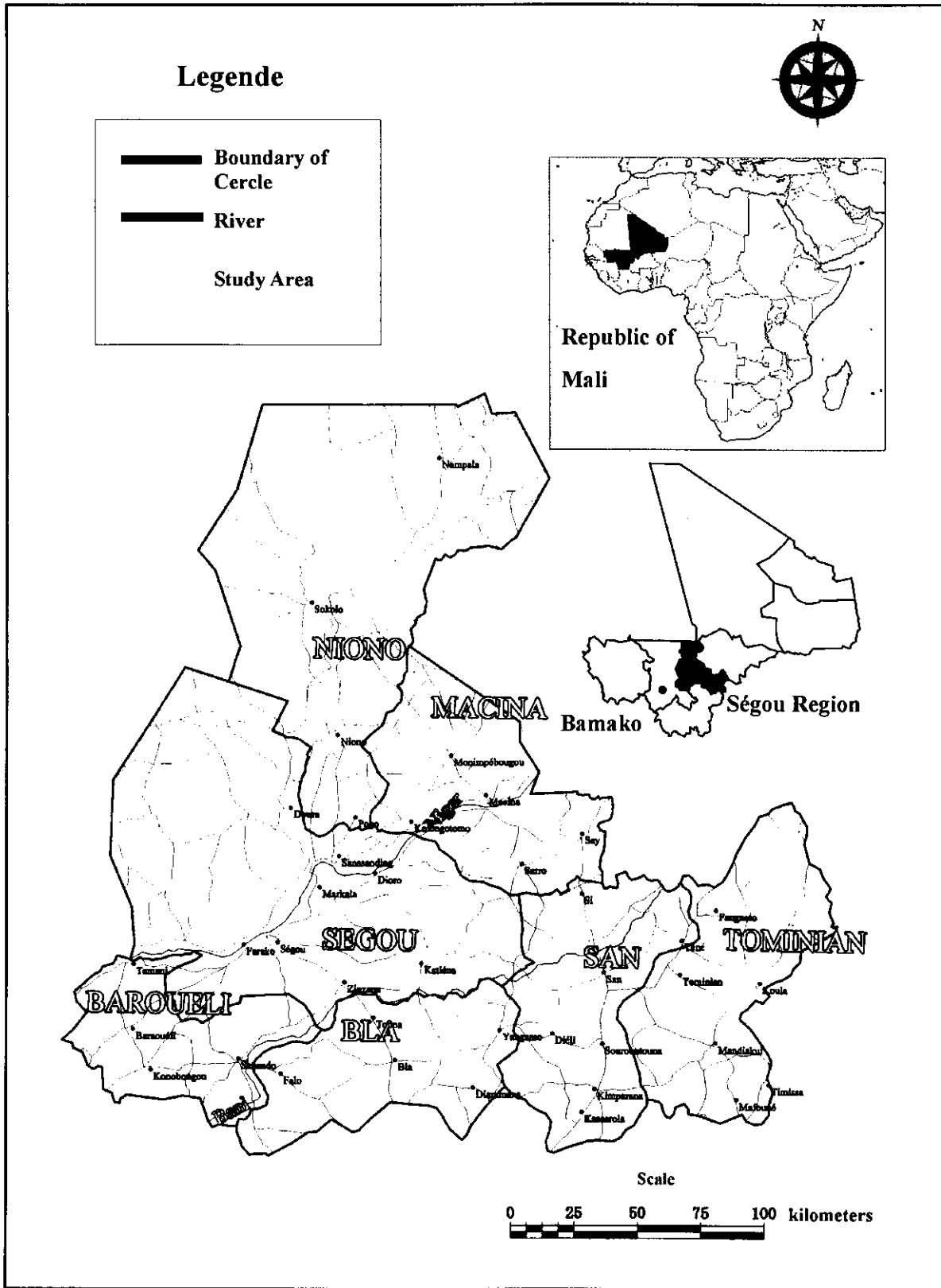


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List of Abbreviation

Abbreviation	French/English/German
ACAER	Antenne de l'Appui Conseil et Aménagement et Equipement Rural
ACN	Antenne Conservation Nature
AfDB	African Development Bank
BHN	Basic Human Needs
BNDA	Banque National de Développement Agricole
CCD	Convention des Nations Unies sur la lutte contre la Désertification
CDF	Code Dominal et Foncier
CMDT	Compagnie Malienne de Développement des Textiles
CSC	Centre de Santé Cercle
CSCOM	Centre de Santé Communautaire
DED	Deutscher Entwicklungsdienst
DNAER	Direction Nationale de l' Aménagement et de l'Equipement Rural
DNAMR	Direction Régionale de l'Appui au Monde Rural
DRAER	Direction Régionale de l' Aménagement et de l'Equipement Rural
DRAMR	Direction Régionale de l'Appui au Monde Rural
DRCN	Direction Régionale de la Conservation de la Nature
DRS	Direction Régionale de Santé
FODESA	Programme Fonds de Développement en Zone Sahélienne du Mali
GDP	Gross Domestic Product
GEF	Global Environment Fund
GIS	Geographic Information System
GPS	Global Positioning System
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit
ICRAF	International Center for Research in Agroforestry
ICRISAT	International Crops Research Institute for Semi-Arid Tropics
IDA	International Development Association
IER	Institut d'Economie Rurale
IFAD	International Fund for Agricultural Development
JGRC	Japan Green Resources Corporation
JICA	Japan International Cooperation Agency
KFW	Kreditanstalt Für Wiederaufbau
ON	Office du Niger
OPAM	Office des Produits Agricoles
ORS	Office Riz Ségou
PAE	Projet Agro-Ecologie
PAL	Programmes d'Actions Locaux
PAR	Programmes d'Actions Régionaux
PASAOP	Programme d'Appui aux Services Agricoles et Organisations Paysannes
PDR	Programme de Diversification des Revenus en zones non Cotonniers
PEDVS	Projet Fonds de Développement Villageois de Ségou
PIRT	Projet Inventaire des Ressources Terrestres
PMB	Programme de mise en valeur des plaines du Moyen-Bani
PNAE/PANCID	Plan National d'Action Environmental et Programmes d'Actions Nationaux de la

	<i>Convention Contre la Désertification</i>
PNVA	Programme National de Vulgarisation Agricole
SAA	Sasakawa Africa Association
SCN	Service Conservation de la Nature
SLACAER	Service Local de l'Appui Conseil et de l'Aménagement et Equipement Rural
SOMIEX	Société Malienne d'Importation et d'Exportation
UBT	Unité du Bétail Tropical
UPA	Unité de Production Agricole
UNDP	United Nations Development Program
UNICEF	United Nations International Children's Emergency Fund
USAID	United States Agency for International Development
WID	Women in development

List of Weights, Measures and Currency Exchange Rate

Currency	(As of March 31, 2003)
FCFA	Francs Communauté Financière Africaine (Franc used in African countries) (FCFA1 = ¥0.2002)
EUR	Euro (EUR1 = ¥131.33)
¥	Japanese yen
\$	US dollar (\$1 = ¥121.20)
Length	
mm	Millimeter
cm	Centimeter
m	Meter
km	Kilometer
Weight	
g	Gram
kg	Kilogram
t	Ton
Area	
m ²	Square meter
km ²	Square kilometer
ha	Hectare
Volume	
m ³	Cubic meter
l	Liter
stere	Stere (A unit to measure charcoal and equivalent of 1 m ³)
cc	Cubic centimeter
Other	
l/s	Liter per a second
m ³ /s	Cubic meter per a second
t/ha	Ton per a hectare
kcal	Kilocalorie
kcal/g	Kilocalorie per a gram
kg/ha	Kilogram per a hectare
m/s	Meter per a second
stere/ha	Stere per a hectare

Chapter 1 Outline of the Verification Study

1.1 Objective of the Study

In the verification project, some projects constructing the Master Plan are implemented ahead of others as a model to feed back the evaluation results of validity and feasibility as the projects to the Master Plan.

Desertification mainly results from exploitation of resources due to human causes. Increase in population and poverty force the exploitation, which does not allow reproduction of vegetation. This causes desertification.

The main factor contributing to desertification is villagers themselves and the progress of desertification, in turn, has a further negative influence upon the villagers' life. Prevention of desertification will not become sustainable unless villagers recognize this fact clearly and participate in activities for the prevention as a body. From this point of view, "promotion of residents' participation" is set as a priority item in laying down a master plan of this study for development.

The method taken for this study is as follows. First, in 12 villages in the three districts representing the study area, a model pilot project (verification project) was carried out based on Terroir Management (which is a method of promoting the residents' participation where it is assumed that the Study Team is optimum and where the following steps are taken: ① the villagers' grasping of the actual situation and problems of desertification and fostering of consciousness about execution of measurements, ② establishment of a Terroir Management Committee by the villagers, and ③ management and operation of a project to combat desertification by the said committee). Then, results of monitoring the project are reflected in the preparation of the master plan. Table 1.1.1 shows main points of the master plan. In the verification study, verification project for the meshed part in the table was carried out by the Terroir Management method mentioned above and verified the effectiveness.

The objectives of the verification study are as follows:

- ① Aptness of the Terroir Management method,
- ② Sustainability of project program to prevent desertification which are suitable for local

Table 1.1.1 Main points of the Master Plan

Item	Details/description	Explanation
Target year for the plan	2025	The term of the plan is 22 years.
Target area	Rainfed agriculture area	1,159 villages totally covering 2,260,000 ha (in the study area of 3,300,000 ha)
Objects of the development	Establishment of sustainable agriculture Increase in income of farm households	To preserve natural resources through the development of sustainable agriculture. Stability of the life of local residents, who take this preservation upon themselves, is important.
People taking the project upon themselves	Village level	Villagers comprising the Terroir Management Committee.
	Administrative level	Project office composed of the members of the Regional Directorate of Rural Support and others.
Points of the project	Residents' participation in all stages. Utilization of micro-credit	Operation and management by the Terroir Management Committee. The project is partly shared by villagers in principle.
		Operation and management of the project by the Terroir Management Committee.
Projects for each objective	Improvement of the project operating ability of residents	Establishment of support system for Terroir Management Committee, support for organizing residents, improvement of literacy rate, establishment of small-scale financial system
	Fulfillment of BHN	Improvement of modern wells and roads
	Improvement of farmers' income (improvement of agricultural, livestock, and sylvicultural productivity)	Provision of improved seeds for rain-fed products, provision of fertilizers, small-scale vegetable cultivation, construction of cereal banks, construction of vaccination facilities, livestock raising, construction of improved poultry houses, and introduction of improved fodder plants
	Protection and management of natural resources	Improvement of mini-nurseries, tree planting, establishment of rules on land use, soil conservation
	Reduction of women's burden	Construction of mills, manufacturing and extension of improved oven, extension of handicraft manufacturing, training of nutrition and mother and child health

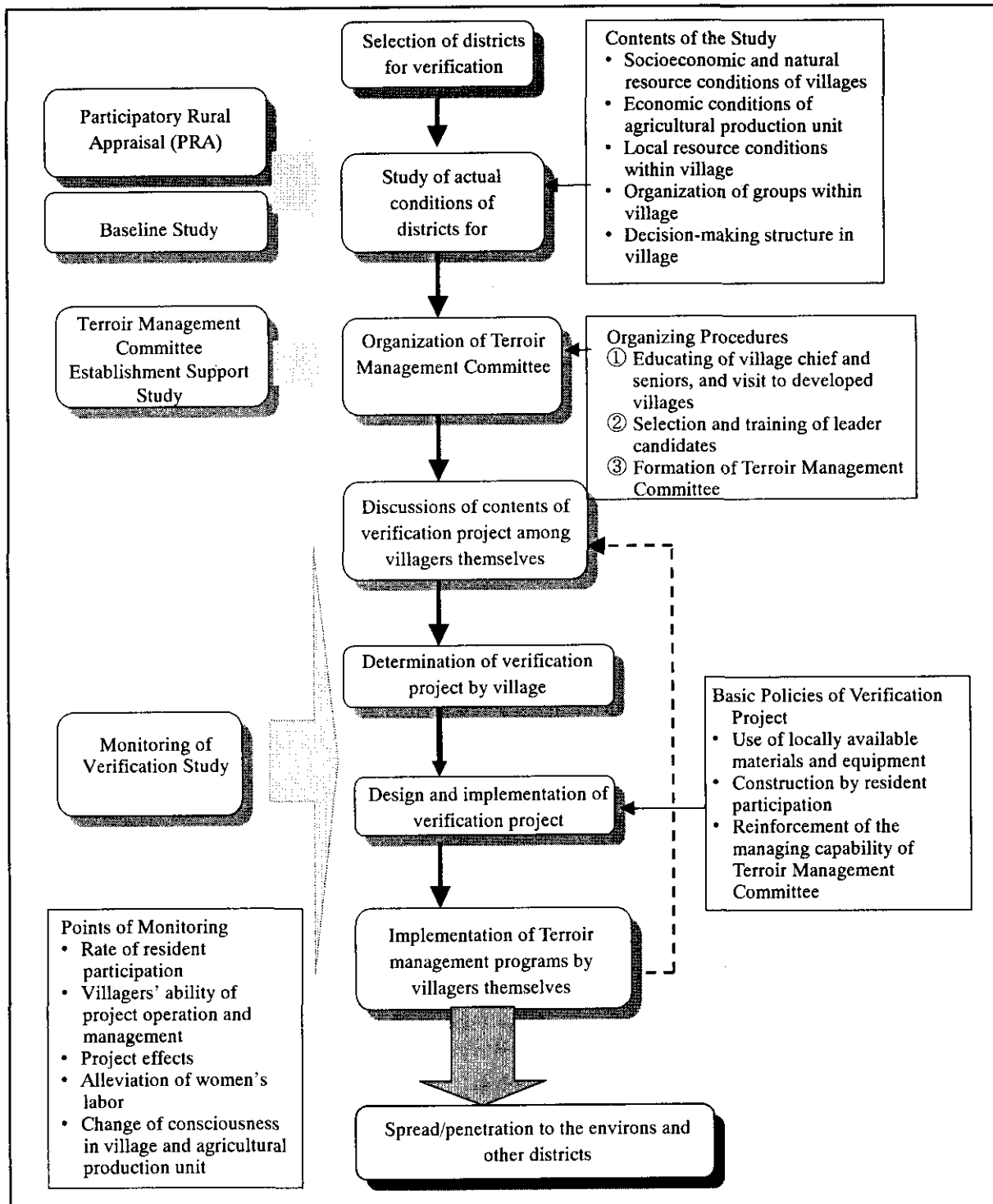
Note: The shaded portions indicate the items tried as the verification projects.

1.2 Contents of the Study

1.2.1 Process of Verification Study

The flow of the processes of the verification study is shown in Figure 1.2.1.1.

Figure 1.2.1.1 Flow of verification study



The details of proceed after the "Selection of districts for verification" in the Figure are described

below.

- ① To adopt a visual method as much as possible in consideration of the low literacy rate of the local residents and to educate and make the discussions with the villagers including PRA.
- ② To increase and enhance villagers' willingness to implement programs through discussions between villagers and the local coordinator posted to foster good understanding with the villagers and to build a trusting relationship between both sides, taking enough time and keeping pace with the "flow of time" in villages.
- ③ To make the villagers fully understand the necessity of organization in the approach steps of existing men of power (village chief and senior council) → selection of key men (intelligent leader) → formation of leader group, respecting the traditional custom.
- ④ To promote the enlightening and development education of the key men and leader group through their visit to some successful cases (developed villages) to realize the effects and interests of the solution projects.
- ⑤ To provide the key men and the leader group with training for the technologies to enhance the ability of accepting the projects and the schemes of operation and management of an organization.
- ⑥ To make the villagers under the leadership of the key men and the leader group to voluntarily organize a Terroir Management Committee, based on the steps ① to ⑤ above. In this case, the project body will be limited to its support to the minimum and appeal to the Committee the project contents and the project operation and management method that will be feasible with the villagers' own efforts as much as possible. The project body will also give indirect advice as necessary.
- ⑦ To operate, manage and evaluate the projects with the Terroir Management Committee as a main body and to reflect the results upon further continuance of the projects:

As seen from many cases of projects against desertification implemented in West Africa, the grade of closeness in the trust relationship between the project bodies and the villagers has often determined the grade of residents' participation in such projects. Therefore, it is important to build a close trust relationship in the initial stage of a project through sufficient discussions between the project body and the villagers.

The most important point in the process of promotion of residents' participation mentioned above will be "fostering the villagers' consciousness." It can be guessed from many examples of past projects that success or failure of the projects (sustainability of the project by villagers) depends on the extent to which uplifting of the consciousness has been achieved.

If the residents' participation was motivated easily by offering objects or rewards to them, the end of such material offering would be apt to the end of residents' participation. In realizing the approach of residents' participation, it is essential to fully enhance their willingness (interest and autonomous consciousness) for the activities against desertification. At the same time, it is also necessary to consider the environmental conditions to allow residents' participation (for instance, enhancing villagers' ability to accept and operate such programs and reserve necessary time and labor for them to participate in a program).

As shown in the UN Human Development Index in 1997, the educational level of local residents in

Mali (literacy rate and school attendance rate) is so low, being in the 166th place among 174 countries. The local society of Mali is very conservative with regard to respecting its traditional customs. The social background and traditional customs of villages were taken into consideration for the knowledge of the residents. In examining the project plan, the implementation period for each project was considered in order to ensure the residents' participation through training and improvement work of infrastructure for living during the dry season as much as possible.

1.2.2 Progress of Verification Study

The verification study was undertaken according to the flow chart in Figure 1.2.1.1 above. The activity contents for each step are shown in Table 1.2.2.1. After December 2001, the verification study entered the stage of "implementing the verification project in the villages". Furthermore, from 2002, new developments often took place such as the autonomous expansion of the project by the residents or the original measures taken by the same residents.

Table 1.2.2.1 Stages and activities of verification project

Stage of Verification Project	Activities	Implementation
① Selection of districts for verification	• Work of selecting districts	April, 2000
② Employment and posting of local coordinator	• Announcement on newspaper, examination of applications and interview • Assignment of liaison staff members for districts	April, 2000 May, 2000
③ Grasp of actual conditions of districts for verification	• Baseline study • Participatory rural appraisal (PRA)	May, 2000 June, 2000
④ Organization of Terroir Management Committee	• Establishment of rules, election of officers, and registration of the rules of Terroir Management Committee • Various types of training by Terroir Management Committee, including visits to developed districts	From September to November, 2000 From October, 2000 to
⑤ Formulation of verification project	• Presentation of criteria for selection of programs • Assessments in Terroir Management Committee in each level • Determination of verification project by village • Conclusion of joint funding agreement	November, 2000 From November, 2000 to December, 2000 January, 2001
⑥ Design and implementation of verification project	• Survey and design for verification project • Implementation of verification project in villages • Voluntary extension of verification project and unique management.	From December, 2000 to From December, 2001 to From February, 2002 to
⑦ Extension of project effects to nearby villages	• Voluntary inspection by nearby villages, autonomous implementation of projects	From June, 2002 to

1.2.3 Selection of Districts for Verification Study

The study area can largely be divided into three districts; ① the irrigated farming zone near the Niger and the Bani River, ② the cotton cultivation zone in the south, and ③ the rain-fed farming zone in the greater part of the area. As the verification district, ③ the rain-fed farming zone has been selected, which occupies the greater part of the study area and suffers the greatest influence of desertification in the three districts, but is retarded in the efforts to cope with it. The zones ① and ② have been excluded from the verification districts because both have favorable conditions for irrigation water and high rainfall quantities because they are located in the south and because both districts have received relatively much support offered by public agencies.

The rain-fed farming zone can largely be divided into two districts with and without wadi in terms of whether holding natural resources or not. From the district without wadi that occupies a greater area

of the rain-fed farming zone, two districts have been chosen, one is a developed district in which the comprehensive measures against desertification had already been taken, and the other district. In addition, another district has been chosen from the district with wadi.

In selection of verification districts, various scales of villages within a district and the easy transport access from the city of Ségou that is the base of this study from the managerial aspect of the study have been taken into account.

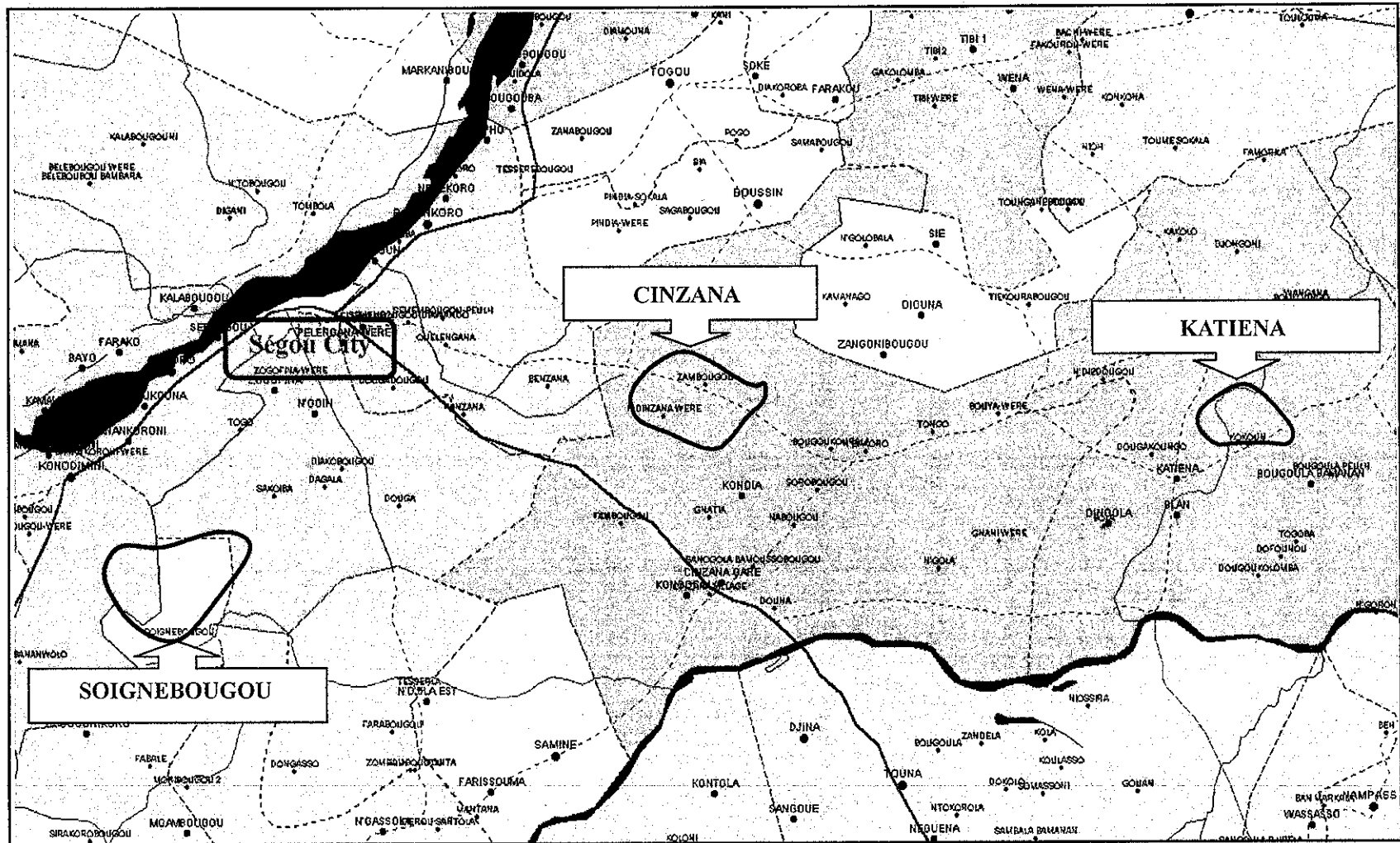
The names of selected districts and Communes and the hours required from Ségou are indicated below. The required hours are based on the traffic conditions in the dry season, but almost doubled in the rainy season.

- ① Soignebougou: Developed district (Consisting of small-scale villages. It covers 3 Communes. About 50 minutes by car from the center of Ségou.)
It consists of 5 villages including Dafinbougou, Sakoibougou, Siradoba, Dougoutiguibougou and Fabougou.
- ② Cinzana: Rain-fed farming district with no wadi (Consisting of average-scale of villages. Cinzana Commune, 1 hour and a half by car from the center of Ségou)
It consists of 5 villages including Dalaba, N'Dinzanawere, Sinebougou, Zambougou, Zangourabougou2.
- ③ Katiena: Rain-fed farming district with wadi (Consisting of large-scale villages. Katiena Commune, 2 hours and a half by car from the center of Ségou)
It consists of 2 villages including Bougan and Kokoun.

The location map of the selected districts for the verification study is shown in Figure 1.2.3.1.



Figure 1.2.3.1 Location map of districts for verification study



1.2.4 Employment and Posting of Local Coordinator

It is necessary to organize the villagers in each village for Terroir Management within the limited period of the verification study. For this purpose, it is needed to build a trusting relationship with residents and to educate the residents on the necessity and importance of Terroir Management through close contact with them. The local coordinator to play this role was posted in villages. The local coordinator also functioned as a mutual liaison between the members of the Study Team and the villagers' side.

A total of 6 local coordinator members, one male and one female, for each of the 3 verification districts, were adopted. All of them lived in individual villages and making daily activities for the smooth implementation of the verification study. A regular meeting once a month was held between the local coordinator and the Japanese members and extraordinary meetings were held as needed from time to time. A 125cc off-road type motorbike was lent to each liaison staff member as a means of transport. The attached material shows the list of local coordinator members by district.

1.2.5 Understanding of Present Status of Verification Districts

The basic indices of all the villages under the verification study are shown in Table 1.2.5.1. The overview of each village is described in Table 1.2.5.2. The characteristic trend of each district or village under the verification study will be summarized below.

(1) Land and access conditions of verification villages

According to the estimated data based on GPS survey, the average area per village was approximately 1,070 ha¹⁾. The smallest village is Dougoutiguibougou Village of 220 ha in Soignebouougou District and the largest is Kokoun Village of 3,840 ha in Katiena District, showing a wide range of dispersions. Seen from the area size of each village, Katiena District is a large district, Cinzana District is a medium district (average scale of villages in the study area) and Soignebouougou district is a small district.

In the form of land use, the farmland including fallow lands occupies about 35% of the total area (statistics of SLACAER). In the traditional form of land use in the Sahel area, a farm product is cultivated for 2 to 3 years in a field, which is laid fallow for 10 to 15 years. During the fallow period, the soil fertility can be naturally restored, ensuring sustainable agriculture. This means that the planting areas should be less than 20% of the entire farmland. From this viewpoint, a relatively excessive land use is in progress in the study area, and it shows soil deterioration and decline of land productivity.

(2) Population and agricultural production unit

The population of all villages for verification study is about 4,700 in 2000 (400 per village in average) and there are 371 agricultural production units (UPA) (31 UPAs per village). For these 5 years the population increased a little less than 10% (annual growth rate of 1.8%). The growth rate of population in the entire study area was not so high compared with the average rate (2 to 3 %) of the entire country of Mali. However, the growth rate in Cinzana and Soignebouougou increased one place

¹⁾ The land is categorized into farmland, grassland and woodland (both include long-term fallow land), village, water area and uncultivated land.

up and that in Katiena 20% up, showing a large difference from other districts.

Table 1.2.5.1 Basic indices and change in all villages for verification (1995-2000)

Year	Population (persons)			Agricultural	Land Use (ha)				INDEX	
	Men	Women	Total	production unit (UPA)	Total Area	Farm-land	Grassland Pasture	Wood land	Cultivated Land per UPA	Household members per UPA
95-96	2,131	2,205	4,336	309	12,850	4,227	656	110	13.7	14.0
96-97	2,178	2,262	4,440	331	12,850	4,288	627	91	13.0	13.4
97-98	2,229	2,310	4,539	346	12,850	4,355	591	85	12.6	13.1
98-99	2,283	2,360	4,643	361	12,850	4,409	555	68	12.2	12.9
99-00	2,332	2,409	4,741	371	12,850	4,543	511	72	12.2	12.8
Growth Rate	109.4%	109.3%	109.3%	120.1%	-	107.5%	77.9%	66.0%	89.5%	91.1%
Annual Rate	101.8%	101.8%	101.8%	103.7%	-	101.5%	95.1%	92.0%	97.8%	98.1%

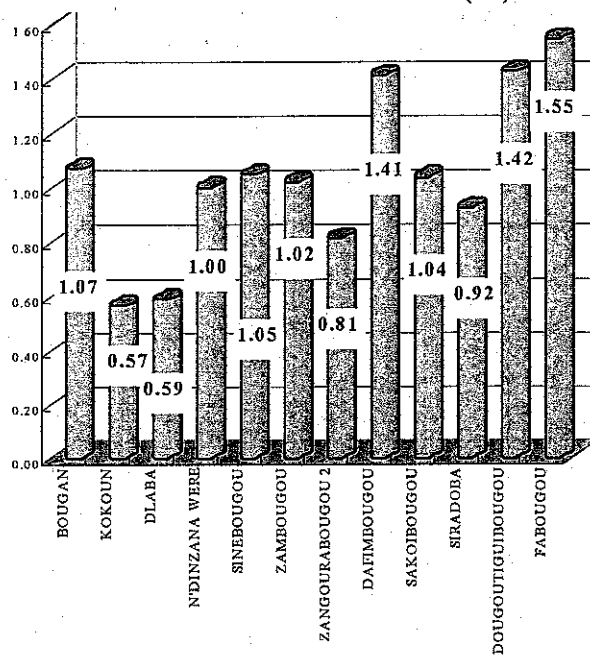
Source: SLACAER study. Total area is estimated on the data of GPS survey made by the Study Team.

Remarks: The data on the grassland pasture and woodland was obtained from the chief of UPA, but it seems that the value of common land was not counted.

The number of UPAs increased 20% (annual rate of 3.7%). As seen by district, the increase of UPAs is inverse to the growth of population. In Katiena, the number of UPAs did not increase, while the other two districts showed a high increase rate of about 30%. In both districts, it is presumed that operational division is making progress because the use of land distant from the stationary fields around the villages is increasing.

The cultivated land for farm products increased 8% with the growth of population, but the grassland pasture and woodland decreased. However, the increase of cultivated land came up with the increase of the population and the number of UPAs, so that the farmland area per UPA or per household member decreased. The increase of population gave a heavy load on the use of land and presumably gave a high pressure to shorten the period of natural soil restoration.

Figure 1.2.5.1 Area of farmland per household member (ha)



Of the 12 villages for verification, the villages with a small farmland per household member are Dlaba (0.59 ha) and Zangourabougou 2 (0.81 ha) in Cinzana District as well as Kokoun (0.57 ha) in Katiéna District (Figure 1.2.5.1). The cereal production in these villages is just in the level of self-supply limit.

Table 1.2.5.2 Overview of villages for verification study (as of July 2000)

District	Village	Population			Agricultural production unit	Land Area (ha)				Cereal Production (ha, t)			Head of Raised Livestock		
		Men	Women	Total		Total Area	Farmland	Grassland	Woodland	Crop Area	Change Rate	Production	Cow	Sheep	Goat
Katiena	BOUGAN	235	250	485	34	1,780	518.0	173.0		463	136.6%	390	1098	647	1214
	KOKOUN	450	456	906	71	3840	513.0	253.0		452	121.8%	388	496	720	900
	District total	685	706	1,391	105	5620	1,031.0	426.0		915	128.9%	778	1594	1367	2,114
	Change Rate (1995-2000)	122.6%	122.3%	122.4%	100.0%	-	122.1%	73.1%		128.9%	-	147.8%	119.8%	118.9%	118.4%
Cinzana	DLABA	112	120	232	10	300	136.0	27.0	29.3	119	175.0%	79	148	126	289
	N'DINZANAWERE	174	156	330	17	780	330.0	13.0	17.0	321	162.9%	195	30	102	91
	SINEBOUGOU	148	160	308	23	1,460	322.5	10.3	9.0	227	118.8%	138	114	188	220
	ZAMBOUGOU	349	378	727	43	1,020	742.0	20.0	10.0	703	115.2%	423	170	340	150
	ZANGOURABOUGOU 2	196	211	407	26	1,070	330.5	4.0	2.0	327	138.0%	199	223	178	183
	District total	979	1,025	2,004	119	4630	1,861	74	67	1,697	130.2%	1,034	685	934	933
	Change Rate (1995-2000)	108.3%	108.7%	108.5%	132.2%	-	111.0%	58.9%	61.4%	130.2%	-	131.9%	183.6%	180.7%	242.3%
Soignebouougou	DAFIMBOUGOU	115	126	241	15	710	340.0	2.0	1.0	150	113.3%	133	330	103	361
	SAKOIBOUGOU	282	257	539	66	890	558.6	3.0	1.0	471	103.8%	415	65	23	48
	SIRADOBA	85	69	154	34	550	142.1	2.0	1.0	103	106.3%	143	45	20	50
	DOUGOUTIGUIBOUGOU	95	123	218	21	220	310.0	3.0	1.0	158	106.4%	139	320	100	310
	FABOUGOU	91	103	194	11	230	300.0	1.0	1.0	133	113.2%	118	91	150	290
	District total	668	678	1,346	147	2,600	1,651	11	5	1,014	106.9%	948	851	396	1,059
	Change Rate (1995-2000)	106.9%	106.1%	106.5%	128.9%	-	102.4%	100.0%	NA	106.9%	-	110.9%	107.0%	140.4%	122.6%
Total of 3 districts		2,332	2,409	4,741	371	12,850	4,543	511	72	3,626		2,761	3,130	2,697	4,106

Source: SLACAER study. The study team (based on GPS survey data) estimated the total area.

Note: The total area of the land area is an estimated value, which is not equal to the total of the areas of farmland, grassland and woodland.

1.2.6 Establishment of the Terroir Management Committee

The Terroir Management Committees that would be the entities to implement the Terroir Management programs were set up in 12 villages for the verification study. In setting up the Committee in each of the villages, a series of the following works were carried out with sufficient discussions with the villagers within each village:

- ① Awareness of the need for a Terroir Management Committee
- ② Establishment of the rules of the Terroir Management Committee
- ③ Election of managerial personnel
- ④ Registration of the Committee in the Commune

What was considered carefully in setting up the Terroir Management Committee was that no dispute or conflict should arise between various existing traditional organizations such as *Ton*. The Terroir Management Committee should be formed as a modern organization for rural development. Further, the Committee is not only an economic organization in a village, but it should also be an organization having the power to execute various activity programs. In this point, the members of the village assembly who are the political leaders in the village became the members of the village Terroir Management Committee. Thus, it was expected that the decisions of the Committee would have full force and effect. The organization of the Terroir Management Committee consisted of a general meeting, a secretary's office, an accounting section and technical sub-committees. As an example, the list of members and their assignments, and the rules and internal rules of the Committee of Bougan village are described in the attached materials.

To strengthen the role of the Terroir Management Committee, the awareness and education program as listed below was executed before and after for the members of the Committee.

- ① Awareness tour with video shows on the concept of Terroir Management, soil conservation activity and plantation activity, etc.
- ② Visits to developed districts
- ③ Training of leaders
- ④ Training of instructors for literacy education
- ⑤ Literacy education
- ⑥ Training for bookkeeping
- ⑦ Technical training of each of the technical sub-committees for agriculture, stock raising and forestry.

1.2.7 Formulation of Plans of Verification Project

(1) Presentation of criteria for selection of programs

The criteria for the selection of programs were prepared based on the items of programs of the villagers in each village who made the requests for the verification study. The criteria were presented to each village through its local coordinator and the local consultant. The criteria for selection are shown in Table 1.2.7.1, and its basic concept will be described below.

1) Selection of program items

According to the result of the PRA, the requests for rural development as presented from villagers are diverse and different. As it was impossible to respond to all the requests for the reasons of time, technology and budget, the program items were selected from the following points of view:

- ① Items that make a large contribution to the prevention of desertification;
- ② Items that highly contribute to the increase of farmers' incomes;
- ③ Items that the villagers strongly desired; and
- ④ Items that ensure reduced labor of women and an increase in income.

2) Ideas on villagers' share of cost

In promoting the future sustainable development at the villagers' initiative, the villagers will recognize the constructed facilities and the acquired technology as their own property more firmly and use those more effectively if their share of costs is higher. On the other hand, the farmers' low standard of living in the study area makes it difficult for them to start new projects which require from them a high share of costs.

In order to keep the balance between both ideas, the villagers' share of costs on the following program items was therefore determined:

- ① No share of cost would be required for those program items which entailed enhancing the ability of framers (such as training).
- ② Villagers would provide their simple labor, free of charge, for the program items of high public character and construction work by constructors.
- ③ For the items that directly contribute to the income increase of individual UPAs (farmhouses) in the study area, the share rate would be 70% of the costs of the items (fertilizers, seeds) for which the technology had been established, and 20% of the costs of the items (fodder plant seeds, improved fowl houses, materials for production of seedlings) for which the technology had not been established.
- ④ The share rate of the costs of equipment and materials that the villagers would use jointly would be 20%.
- ⑤ For the construction and rehabilitation of water source facilities such as new wells and existing wells, the villagers would share 150,000 Fcfa on cash per site in addition to ② above, such as the case where that the villagers themselves had constructed their traditional type wells in the study area.
- ⑥ For construction of any building, the villagers would provide the materials such as sun-dried bricks, free of charge, in addition to ② above, as far as the villagers could manufacture them or procure them locally.

3) Policies for implementation of the verification project

The verification project is the project to be implemented by the villagers themselves, and after the study is completed, the Terroir Management should proceed in a sustainable way. Thus, the verification project was implemented on the following policies:

- ① As many materials that are locally available will be used as possible.
- ② The Study Team will provide the materials that the villagers cannot procure

- (manufacture) by themselves or will offer assistance for those.
- ③ The constructors will undertake the construction of facilities that could not be dealt with in the villagers' technical level, but the villagers will contribute labor.
 - ④ The assistance from the Study Team will be offered only once in the first work for each program item, but no assistance will be offered for the running costs (for operation and maintenance costs of each program).
 - ⑤ The technical support for the operation and maintenance of each program will be provided by the local coordinator or the consultant during the period of the study.

4) Requirements for selection

The requirements for selecting the program items in the framework of the verification project are considered as follows:

- ① To obtain the villagers' agreement to sharing the costs.
- ② To organize the maintenance group for the construction of facilities and define the maintenance rules.
- ③ To select individual UPAs for agricultural programs under the responsibility of Terroir Management Committee. (If the Study Team selected UPAs at its discretion, some complaints might have arisen among villagers so the selection of UPAs was made through mutual discussions among villagers.)

5) Discussions at each Terroir Management Committee

The criteria for the selection of program items as described above were examined at each Terroir Management Committee with the local coordinator's support. The necessity for each program and the villagers' share of costs were discussed in various aspects and the requests of villagers were arranged.

For constructions of ① wells, ② roads and ③ meeting halls which especially took a time and should be implemented during dry season, wishes were organized with priority after December 2000

For other project items, wishes were organized after January 2001 in the order of ① mills, ② cereal warehouses, ③ nurseries and ④ others. A project plan was then determined. The total volume of projects in the verification study determined through such progress is shown in Table 2.2.1 of Section 2.1, Chapter 2

Table 1.2.7.1 List of verification projects, standards of adoption and the ratio of beneficiaries' burden

Field	Item	Description	Standards of adoption	Ratio to be borne by the study team	Ratio to be borne by beneficiaries
Improvement of the project operating ability of residents	Establishment of support system for Terroir Management Committee	<ul style="list-style-type: none"> - Assignment of local coordinators and improvement of accommodations - Arrayal of accommodations and motorcycles for local coordinators 	<ul style="list-style-type: none"> - Two each from 3 verification districts for a total of 6 - The village with the best living conditions in each district - The villages in which the provision of sun-dried bricks and simple labor for the construction of accommodations by the residents is possible 	<ul style="list-style-type: none"> - Costs to employ local coordinators - Materials necessary for the construction of accommodations (those that cannot be procured in the village) 	<ul style="list-style-type: none"> - Provision of housing lots, sun-dried bricks, simple labor
	Support for organizing residents	<ul style="list-style-type: none"> - PRA training to extension workers and Commune representatives - Inspection of developed villages by the authorities in villages - Information for the residents regarding the needs of Terroir Management using audio-visual equipment - Formulation of Terroir Management rules, selection of officers, submission to Commune - Implementation of PRA survey - Support of the formulation of Terroir Management Plan 			
	Improvement of literacy rate	<ul style="list-style-type: none"> - Training of lecturers for literacy education in villages - Literacy education to Terroir Management Committee - Holding of residents' assembly for the construction as well as maintenance and management of meeting hall and literacy center by the residents 	<ul style="list-style-type: none"> - There shall be no meeting hall or substitute facility at present. - Establishment of maintenance and management system 	<ul style="list-style-type: none"> - Costs for designing and constructing the meeting hall (excluding the costs borne by the residents) 	<ul style="list-style-type: none"> - Expenses for stationary and lecturers - Provision of sun-dried bricks and simple labor
	Improvement of the project implementation ability of residents	<ul style="list-style-type: none"> - Implementation of leadership training and accounting training 	<ul style="list-style-type: none"> - All 12 villages covered by verification (to be referred to as the "verification villages") 		
	Fulfillment of the demand for the agricultural village development funds	<ul style="list-style-type: none"> - Establishment of management rules of small-scale financial system, selection of officers - Accounting training 	<ul style="list-style-type: none"> - The staff in charge of accounting shall be already selected. - Eleven villages, excluding Zambougou Village in which the small-scale financial system already exists. 	<ul style="list-style-type: none"> - Expenses for the inspection of developed villages - Expenses for establishing the small-scale financial system 	<ul style="list-style-type: none"> - 20% of the costs for purchasing cash boxes

Field	Item	Description	Standards of adoption	Ratio to be borne by the study team	Ratio to be borne by beneficiaries
Fulfillment of BHIN	Improvement of modern wells	<p>Construction:</p> <ul style="list-style-type: none"> - Holding of residents' assembly for the construction of wells and the establishment of maintenance and management system - Training of the use of water (effective and sanitary use plan of water) - Designing and construction of new wells by special contractor 	<ul style="list-style-type: none"> - Approximately one well for every 500 residents in each village (including the existing deep wells and modern shallow wells) - Establishment of management system (staff in charge of management, fee) 	<ul style="list-style-type: none"> - Costs for designing and constructing new wells (excluding the costs borne by the residents) 	<ul style="list-style-type: none"> - Provision of labor for simple works - Payment of 150,000 Fcfa for one well by cash
		<p>Repair:</p> <ul style="list-style-type: none"> - Holding of residents' assembly for the repair of wells and establishment of maintenance and management system - Designing for the repair and construction of wells by special contractor 	<ul style="list-style-type: none"> - Approximately one well per 500 villagers (including the existing deep wells and modern shallow wells) - Establishment of maintenance and management system (manager, fee) 	<ul style="list-style-type: none"> - Costs for designing and constructing the repair of wells (excluding those borne by the residents) 	<ul style="list-style-type: none"> - Provision of labor to simple works - Payment of 150,000 Fcfa per a well by cash
	Road improvement	<p>Construction:</p> <ul style="list-style-type: none"> - Holding of residents' assembly for the construction of roads and establishment of maintenance and management system - Entrustment to special contractor to design and construct roads - Provision of equipment for the maintenance and management of roads (shovel, pickax, cart, wheelbarrow) 	<ul style="list-style-type: none"> - Villages which are isolated from nearby villages during the rainy season and in which construction by the residents is difficult (as determined by the study team) - Establishment of maintenance and management system 	<ul style="list-style-type: none"> - Costs for designing and constructing the repair of roads (excluding those borne by the residents) 	<ul style="list-style-type: none"> - Provision of labor to simple works - Bearing of 20% of the procurement cost of road management equipment
		<p>Repair:</p> <ul style="list-style-type: none"> - Holding of residents' assembly for the construction of roads and establishment of maintenance and management system - Designing and construction of road repair by special constructor or government specialist - Provision of equipment and materials (lateritic soil) for the maintenance of roads 	<ul style="list-style-type: none"> - Villages which are isolated from nearby villages during the rainy season (as determined by the study team) - Establishment of maintenance and management system 	<ul style="list-style-type: none"> - Costs for designing and constructing the repair of roads (excluding those borne by the residents) 	<ul style="list-style-type: none"> - Provision of simple labor - Bearing of 20% of the procurement cost of road management equipment
	Provision of seeds for rain-fed products and fertilizers	<ul style="list-style-type: none"> - Training of cultivation (inspection of developed villages, rotation, continuous cropping, inter-cropping, mixed cultivation, fertilization, soil conservation, management of fallow land) - Construction of compost tank by the residents - Establishment of enclosed land for collecting compost - Provision of chemical fertilizers - Provision of phosphate rocks - Provision of improved seeds 	<ul style="list-style-type: none"> - Farmers approved by the Terroir Management Committee - Agreement on the bearing 70% of the materials to be provided - Agreement on the recording of the agricultural works - Agreement on the participation in training - Establishment of management rules by the special cultivation subcommittee 	<ul style="list-style-type: none"> - Purchasing and distribution of fertilizers, phosphate rocks, and seeds (excluding those borne by the residents) - Technical instruction on using materials 	<ul style="list-style-type: none"> - Bearing of 70% of the market prices of fertilizers, phosphate rocks, and seeds - Recording of agricultural works

Field	Item	Description	Standards of adoption	Ratio to be borne by the study team	Ratio to be borne by beneficiaries
Increase of farmers' income (improvement of agricultural, stock raising, and sylvicultural productivity)	Small-scale vegetable cultivation	<ul style="list-style-type: none"> - Training of cultivation (inspection of developed villages, rotation, continuous cropping, inter-cropping, mixed cultivation, fertilization, soil conservation, agroforestry, etc.) - Training of water management (inspection of developed villages, collection of water fee, formulation of rules including penalty) - Entrustment to local contractor to improve water resource facilities (well, marsh) - Provision of seeds and seedlings 	<ul style="list-style-type: none"> - Securing of water resource facilities - Farmers approved by the Terroir Management Committee - Agreement on the bearing of 70% of the materials to be provided - Agreement on the recording of agricultural works - Agreement on the participation in training 	<ul style="list-style-type: none"> - Designing and construction of water resource facilities (excluding those borne by the residents) - Bearing of 30% of the materials to be borne - Costs for training 	<ul style="list-style-type: none"> - Bearing of 70% of the materials to be provided - Payment of 300,000 Fcfa by cash for the improvement of water resource facilities
	Construction of cereal bank	<ul style="list-style-type: none"> - Holding of residents' assembly for the construction and maintenance of cereal bank by the residents themselves - Construction of cereal bank by the residents themselves by providing materials that cannot be procured in the village such as roof or door - Operation of cereal bank by the residents 	<ul style="list-style-type: none"> - Establishment of maintenance system (staff in charge of accounting, formulation of regulations on use) 	<ul style="list-style-type: none"> - Costs for designing and construction of cereal bank (excluding the costs borne by the residents) 	<ul style="list-style-type: none"> - Provision of sun-dried bricks and simple labor - Bearing of 20% of the equipment - Bearing of 50% of the initial stock
	Construction of vaccination facility	<ul style="list-style-type: none"> - Training of disease prevention - Improvement of vaccination facilities 	<ul style="list-style-type: none"> - Farmers approved by the Terroir Management Committee - Agreement on the recording of disease management - Agreement on the participation in training - Agreement on the bearing of vaccine cost - Agreement on the bearing of 20% of the equipment costs for vaccination facilities 	<ul style="list-style-type: none"> - Provision of the equipment for vaccination facilities (excluding the one borne by the residents) - Designing and construction of vaccination facilities - Training cost 	<ul style="list-style-type: none"> - Bearing of total costs for vaccines - Bearing of 20% of the equipment for vaccination facilities - Provision of simple work related to the establishment of vaccination facilities
	Livestock fattening	<ul style="list-style-type: none"> - Training on stock raising method - Monitoring of farmers that introduced improved breeding stocks 	<ul style="list-style-type: none"> - Farmers approved by the Terroir Management Committee - Agreement on the participation in training 		
	Construction of improved poultry house	<ul style="list-style-type: none"> - Introduction of improved poultry houses - Construction of improved poultry houses 	<ul style="list-style-type: none"> - Farmers approved by the Terroir Management Committee - Agreement on the participation in training - Agreement on the bearing of 20% of the equipment costs for improved poultry houses 	<ul style="list-style-type: none"> - Arrangement for the purchasing of improved poultry breed - Designing and construction of improved poultry houses (excluding those borne by the residents) - Training cost 	<ul style="list-style-type: none"> - Bearing of the entire costs for purchasing the improved poultry houses (to be loaned) - Bearing of 20% of the costs for the materials of improved poultry houses

Field	Item	Description	Standards of adoption	Ratio to be borne by the study team	Ratio to be borne by beneficiaries
	Introduction of improved fodder plant	<ul style="list-style-type: none"> - Training on the production of stock feeds (soil conservation, improved fodder plants, leguminous crops, fodder trees, nutritional blocks, formulation of regulations to control grazing, etc.) - Provision of improved seeds for fodder plants - Provision of fodder trees - Provision of materials to manufacture nutritional blocks 	<ul style="list-style-type: none"> - Farmers approved by the Terroir Management Committee - Agreement on the bearing of 20% of the equipment cost - Agreement on the recording of agricultural works - Agreement on the participation in training 	<ul style="list-style-type: none"> - Expenses for purchasing the equipment (excluding the one borne by the residents) - Training cost 	<ul style="list-style-type: none"> - Bearing of 20% of the costs for purchasing the equipment (including the seeds for fodder plants)
	Mini nursery.	<ul style="list-style-type: none"> - Training of seedling production technique - Improvement of the foundation for seedling production 	<ul style="list-style-type: none"> - Farmers approved by the Terroir Management Committee - Agreement on book keeping - Agreement on the participation in training 	<ul style="list-style-type: none"> - Designing and construction of nursery facilities (excluding the ones borne by the residents) - Provision of equipment 	<ul style="list-style-type: none"> - Bearing of 20% of the equipment cost - Bearing of 20% of the nursery equipment
	Afforestation	<ul style="list-style-type: none"> - Training on the needs for forestry conservation - Vegetation of trees 	<ul style="list-style-type: none"> - Farmers approved by the Terroir Management Committee - Agreement on book keeping - Agreement on the participation in training 		
Preservation and management of natural resources	Formulation of rules on land use	<ul style="list-style-type: none"> - Formulation of the agreement on land use specifying the rules on firewood cutting and grassland use based on the agreement of residents - Acquisition of the approval of related administrative organs on the agreement on land use - Publicity of the contents of the agreement on land use through radio - Installation of signboards 	<ul style="list-style-type: none"> - Establishment of Inter-Terroir Management Committee - Agreement on the bearing of 20% of the equipment cost 	<ul style="list-style-type: none"> - Expenses necessary for the formulation of agreement 	<ul style="list-style-type: none"> - None - 20% of the equipment
	Soil conservation	<ul style="list-style-type: none"> - Training of soil conservation technology - Provision of the equipment for soil conservation - Implementation of soil conservation activities 	<ul style="list-style-type: none"> - Agreement on the participation in training - Bearing of 20% of the equipment cost 	<ul style="list-style-type: none"> - Holding of training - Provision of equipment 	<ul style="list-style-type: none"> - Participation in the training - Bearing of 20% of the equipment
Reduction of women's burden	Construction of mill and training of the management and operation	<ul style="list-style-type: none"> - Holding of residents assembly for the construction and maintenance and management of mill by the residents themselves - Provision of materials that cannot be procured at site such as milling machine, roof, and door - Operation of mill by the residents 	<ul style="list-style-type: none"> - Establishment of maintenance and management system (staff in charge of accounting, formulation of regulations on use, maintenance and repair plan) 	<ul style="list-style-type: none"> - Costs for designing and constructing the mill (excluding those borne by the residents) 	<ul style="list-style-type: none"> - Provision of sun-dried bricks and simple labor, bearing of 20% of the equipment to be provided
	Extension of the manufacturing of improved oven	<ul style="list-style-type: none"> - Training on the effectiveness of improved oven - Training on the manufacturing of improved oven - Introduction of the production equipment of iron oven 	<ul style="list-style-type: none"> - Farmers approved by the Terroir Management Committee - Agreement on book keeping - Agreement on the participation in training 	<ul style="list-style-type: none"> - Provision of equipment 	<ul style="list-style-type: none"> - Bearing of 20% of the equipment cost
	Extension of the manufacturing of handicrafts	<ul style="list-style-type: none"> - Training on the manufacturing of handicrafts - Manufacturing of handicrafts by the residents 	<ul style="list-style-type: none"> - Farmers approved by the Terroir Management Committee - Agreement on book keeping - Agreement on the participation in training 	<ul style="list-style-type: none"> - Provision of equipment 	<ul style="list-style-type: none"> - Bearing of 20% of the equipment cost

6) Conclusion of joint investment agreement

For the verification study project that was agreed upon by the Terroir Management Committee of each village for verification (CGTV) and the Study Team, the joint investment agreement was prepared to confirm the responsibilities of both parties in writing. In the discussions on this agreement, the chief of each Commune participated and the responsibilities of its administrative organization were also stipulated. The responsibilities of each organization as specified in the agreement are shown in Table 1.2.7.2.

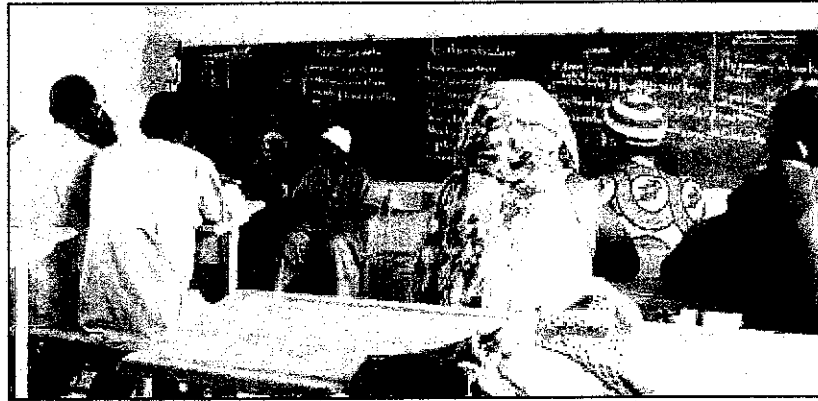
The agreements with 12 Terroir Management Committees and their respective competent Communes were concluded and executed prior to February 1, 2001.

Table 1.2.7.2 Major items of joint investment agreement

Item	Description	Remarks
① Purpose of the agreement	To implement the verification project at CGTV's initiative. To clarify responsibilities of CGTV and Study Team in the implementation of the project.	
② CGTV's responsibilities	Details of the costs, materials and labor for which CGTV is responsible in the implementation of the project.	Arranged per village in separate table per village.
③ Study Team's responsibilities	Details of responsibilities that the Study Team assumes.	
④ Purpose of use of CGTV's share of costs	CGTV's share of costs is to be fed back to the fund of management and operation of CGTV. This fund is to be used for the management and operation of the project under CGTV's responsibility.	
⑤ Commune's responsibilities	Technical support to CGTV and follow-up of CGTV's activities	
⑥ Maintenance of facilities	CGTV is responsible for good maintenance of the facilities constructed in the project.	
⑦ Valid period of the Agreement	The period from February 1, 2001 to February 2002 will be effective.	

7) Designing and execution of verification projects

After the progress mentioned above, the verification projects are now in the stage of design and execution from December 2000. Study and training (for the leading members and in accounting) to strengthen functions of each Terroir Management Committee and technical study and training for members of the expert commission members taking charge of operation and management of each project, which has been established in the Terroir Management Committee, are being executed now. In parallel with these, various kinds of concrete measures to combat desertification in the fields of agriculture, stock raising and forestry are being carried out on the village level, including construction of infrastructure for living, such as roads, wells and assembling facilities. After October 2002, all verification projects have been operated and managed under the responsibilities of each Terroir Management Committee.



1.2.8 Method of Execution of Monitoring

The monitoring of the verification projects allowed to follow and understand the activities of verification projects in the following two phases.

- ① Monitoring of the execution
- ② Monitoring of the influence

(1) Monitoring of the execution

The monitoring collected the information on the inputs to projects, timing of activities, and participation state and understanding of the training. Furthermore, it also collected the data related to the achievements of CGTV in the project.

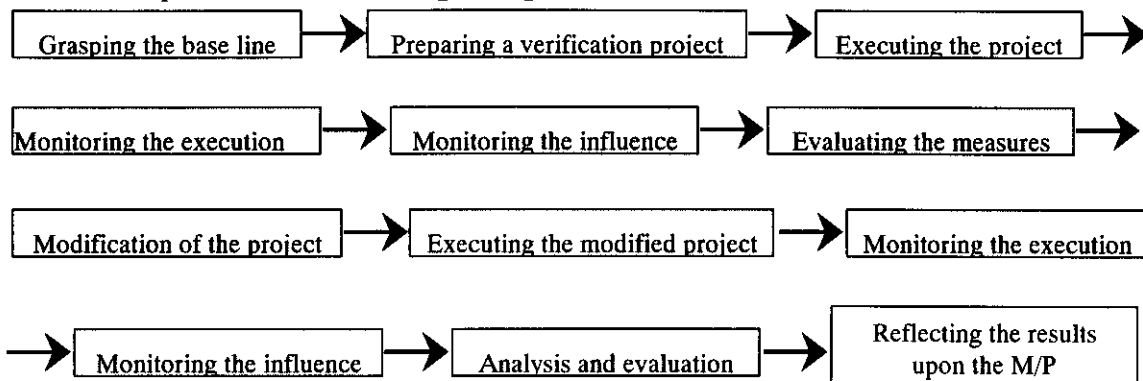
(2) Monitoring of the influence

After the implementation of the verification project, the data on the effects and influence of each project were collected by exchanging opinions with the residents, from the results of questionnaire, and monitoring.

The results of the above mentioned monitoring were reflected on the implementation of continuous projects by changing the adoption technology or examining the additional projects as well as used as the materials for the final analysis and evaluation. Furthermore, they were reflected on the formulation of Master Plan.

(3) Steps and the method of monitoring

The whole procedure of monitoring is diagrammatized as follows:



Verification projects are roughly divided into software projects (e.g. improvement of villagers' ability to accept projects, extension of technique of agricultural operation, micro-credit etc.) and hardware projects (e.g. infrastructure construction for improvement of the living conditions = BHN, and construction of facilities for agricultural operation).

1) Monitoring of software projects

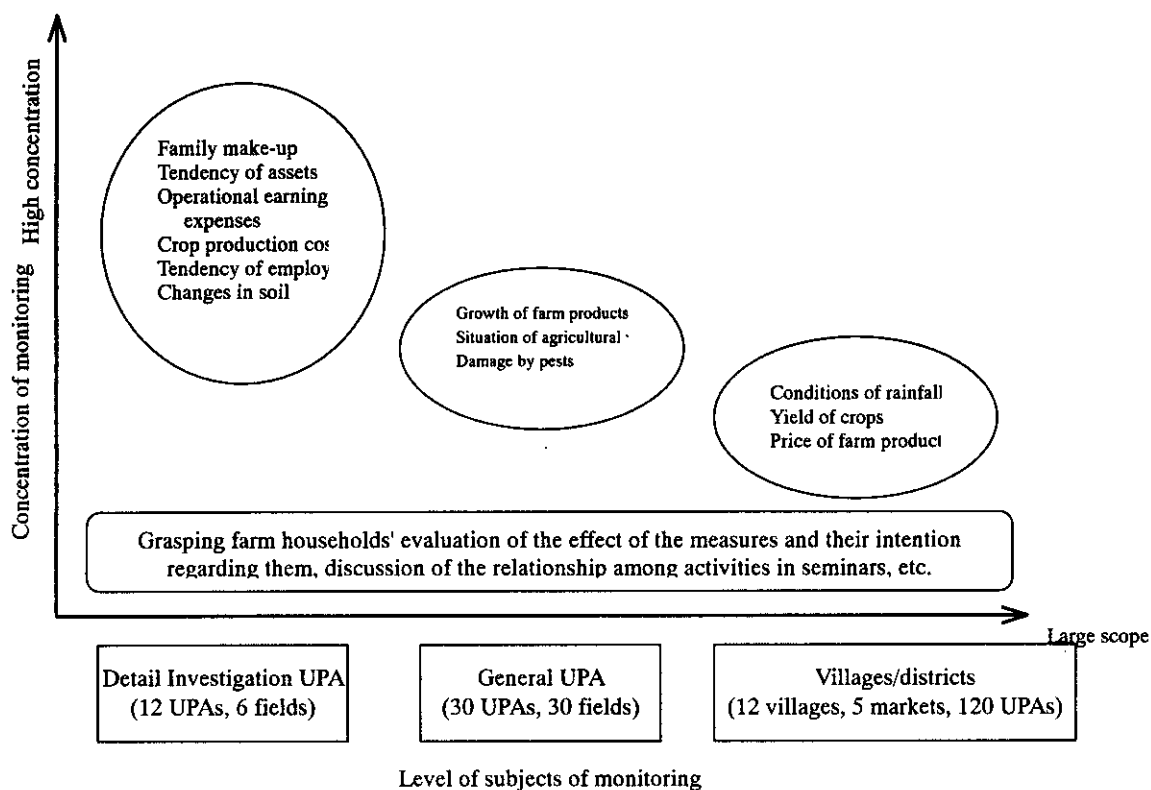
For software projects, monitoring data is collected on three levels (the Detail Investigation UPA, the general UPA and villages/districts)(See Figure 1.2.8.1). Data is collected in the following way:

- ① Entry by constituent members of the Detail Investigation UPA
- ② Investigation and recording by local coordinator member
- ③ Collection of data by the use of results of investigation directly controlled by the CP and the Study Team
- ④ Guidance on agricultural operation technique and collection of data by the DRAMR and the DRCN
- ⑤ Guidance on entry and collection of data by the SLACAER
- ⑥ Questionnaire to UPAs by the study team at the completion of verification projects

As the scope of activities of verification projects and organizations concerned range widely, a liaison meeting of organizations in charge of monitoring shall be organized and exchange of information on activities shall be made regularly (once a month in principle).

Seminars for evaluation of results of monitoring shall be held jointly among fields of agriculture, stock raising and forestry twice a year (at the peak time in the raining season and after harvesting crops). Verification shall be made regarding propriety, economic effectiveness and sustainability of local application of measures and techniques employed. The results shall be reflected upon the Master Plan (M/P).

**Figure 1.2.8.1 Scope of subjects and concentration or accuracy of monitoring
(example of farming field)**



2) Monitoring of hardware projects

To monitor hardware projects, data shall be collected with the following three points emphasized: ① the way of residents' participation should be during construction/improvement of facilities, ② effect of respective facilities (before and after the project) and ③ the facilities maintenance and management system (its mechanism and technique). Then, the execution method of projects of the Master Plan proposed by the Study Team shall be verified. Table 1.2.8.1 summarizes monitoring items and viewpoints of each of the above-mentioned points.

Table 1.2.8.1 Points of monitoring of hardware projects

Classification	Monitoring items	Viewpoint of monitoring
① The way of residents' participation should be during construction/improvement of facilities	Number of participating villagers Details of works	To judge propriety of the execution by villagers in the technical aspect. To judge CGTV's ability to secure labor.
② effect of respective facilities (before and after the project)	Quality and uses of water Volume of traffic Situation of the use of assembling facilities Situation of price of self-sufficient cereal crop within the village <i>Time of milling</i> Degree of villagers' satisfaction	To confirm the effect of construction/improvement of respective facilities by measuring it before and after the project. To measure the degree of villagers' satisfaction. To judge propriety of the level of construction/improvement of respective facilities.
③ Facilities maintenance and management system (its mechanism and technique)	Maintenance and management system Maintenance and management activities Observance of management rules Operational ability	To grasp problems related to the system for villagers' maintenance and management. To grasp problems related to maintenance and management technique. For Cereal Banks and mills, to grasp operational subjects and those related to the method of guidance on study and training

In the evaluation based on monitoring, the effect and the execution method of the project were confirmed mainly in light of the following standards, and the obtained results were reflected upon the M/P. The evaluation results are described in Chapter 3 in detail.

- ① To be technical and sustainable management.
- ② To be economically appealing to villagers.
- ③ To be acceptable socially and culturally.
- ④ For methods of both extension and villagers' burden to be appropriate

As some examples, concrete contents of the monitoring in the field of organization of residents are shown in Table 1.2.8.2 and the implementation process is shown in Figure 1.2.8.2. Descriptions of other sectors are shown in ANNEXE V1.2.8.1.

Table 1.2.8.2 Monitoring plan in the field of organization of the villagers

Project	Project items	Monitoring items	Monitoring target	Monitoring frequency	Person(s) implementing the monitoring	Data collection method
1. Establishment of support system for Terroir Management Committee	Assignment of local coordinators	Facilitating ability of local coordinators	Local coordinators	Once a month	Japanese specialist	Report of local coordinator
	Array of motorcycle and accommodations	States of motorcycles and accommodations	Motorcycles and accommodations	Once a month for motorcycles, as necessary for accommodations	Japanese specialist	Regular inspection, visual check
2. Support for organizing residents	MARP training	Understanding of extension workers on the MARP training	Extension workers, Commune representatives	December 2001	PROMAVI (consultant)	Results of the evaluation test to the participants of training
	Extension and clarification of the combat of desertification activities	Change of residents' consciousness	All hamlets	October 2000	Counterpart	Report of counterpart
	Inspection of developed villages	Change of residents' consciousness	All hamlets	December 2000, January 2001	Local coordinator	Report of local coordinator
	Participatory rural appraisal survey	Change of residents' consciousness	All hamlets	June 2000	CADIS (consultant)	Report of the Participatory rural appraisal survey
	Formulation of rules and regulations, registration, selection of officers	Formulation state of rules and regulations	All hamlets	September 2000	BEAGGES (consultant)	Report of the study on the support of CGTV establishment
	Formulation of Terroir Management Plan	Contents of Terroir Management Plan	All hamlets	October 2000	BEAGGES (consultant)	Report of the study on the support of CGTV establishment
3. Improvement of literacy rate	Construction of meeting hall	Construction record (contents of works, number of participated farmers)	Villages constructing the meeting halls	June to July 2001 November to December 2001	Local coordinator	The local coordinator visits the construction site everyday during the construction period and takes the record.
		Record of the use of meeting hall	All villages	Once a month	Local coordinator	Hearing from the management group
		Record of the management of meeting hall	Villages constructing the meeting halls	Once a month	Local coordinator	Hearing from the management group
		Questionnaire	All villages	January 2001	Local coordinator	Hearing from the UPA
	Training of the lecturers of literacy education	Degree of literacy improvement	Participants of training	January to February 2001	BEAGGES (consultant)	Report of the training of literacy education to lecturers

Project	Project items	Monitoring items	Monitoring target	Monitoring frequency	Person(s) implementing the monitoring	Data collection method
	Literacy training	Degree of literacy improvement	Participants of training	February to April 2001	BEAGGES	Report of literacy training
	Training of women's literacy	Degree of literacy improvement	Participants of training	September 2001	Local coordinator	Report of literacy training
4. Improvement of residents' project implementation ability of	Training of accounting and leaders	Change of consciousness as the leaders	Participants of training	May 2001	BEAGGES	Report of accounting and leader training
	Study of the existing organization activities	Change of the roles of existing organizations	All hamlets	July 2001	Local coordinator	Hearing from villagers
	Study on the understanding of the roles of CGTV officers	Understanding of the roles of CGTV officers	CGTV officers	July 2001	Local coordinator	Hearing from CGTV officers
	Instruction on the recording of minutes of CGTV meeting	Improvement of the recording ability of minutes	Minutes of the CGTV clerk	Once a month	Local coordinator	Record of CGTV clerk
	Preparation of the ledger of CGTV officers	Transition of the change of officers	CGTV officers	July and August 2001	Local coordinator	Hearing from CGTV officers
	Training of female leaders	Change of the consciousness of leaders among women	CGTV female officers	October 2001	Local coordinator	Results of evaluation test
	5. Small-scale financial system	Distribution of cash boxes	Installation place	CGTV chief	July 2001	Japanese specialist, local coordinator
Payment of costs		Payment state of costs	CGTV chief	Once a month	BEAGGES	CGTV accounting record
Establishment of small-scale financial fund		Number and amount of people depositing money	Manager of cash box	Once a month	BEAGGES	Record of the staff in charge of CGTV fund
Training at the developed districts of small-scale finance		Understanding of the operating state of fund	Manager of cash box	September 2001	BEAGGES	Hearing from the participants of training
Training of the staff in charge of fund		Improvement of managerial ability	Manager of cash box	September 2001	BEAGGES	Results of evaluation tests before and after the training
Confirmation of the loan and payment state		Number, amount, and payment rate of loans	Manager of cash box	Once a month from March 2002	BEAGGES	Record of loan and payment

Chapter 2 Study Results

2.1 Baseline Study

The baseline study was performed by the members of the study team or entrusted to the local consultants.

(1) Participatory rural appraisal survey (PRA survey)

This study is divided into ① a study with a village as a unit and ② a study with a farm household as a unit, the purpose of both of which is to gather quantitative numerical values from questionnaires aimed at villages covered by the verification study, and ③ a participatory rural appraisal survey to gather qualitative data through conversations and group talking. The purpose of ③ the participatory rural appraisal survey, is to understand, in line with the villagers' recognition system, the situation of the use of natural resources, the present social and economic conditions, the present conditions of techniques for agricultural operation and cultivation, problems related to them, and measures against them, in the verification study villages. The study also aims at improvement of the will and ability to recognize and improve the situation that the villagers themselves are put in.

The PRA survey was carried out by entrusting a consultant. In order to assist the consultant and to promote the study with villagers' trust obtained, the local coordinator consisting of one man and one woman, explained in Chapter 1, Section 1.2.4, "Posting of the Local coordinator," cooperated with the consultant.

① Study with a village as a unit

Interviewees were chiefs and seniors of villages. Study items were as follows: the present situation of racial constitution, the number of family members; population; area of agricultural land; area of grazing land, forests, and planted crops; the amount of livestock, the foundation of production, the bedrock upon which the livelihoods of the villagers in the area depend and the social foundation; questions about the present situation of food self-sufficiency and agricultural production, stock-raising and forestry; and demands for promotion of agricultural villages. Grasping the regional characteristics was strived for particularly by comparing the present planting area, grazing area and forest area with those of ten years ago, by examining reasons of difference between them, by making a comparison with those before droughts, and by studying recognition of desertification, the situation of food self-sufficiency, means of cash income, literacy and organizations inside a village. In the study, by asking questions about the present situation of agricultural production, stock raising and forestry and in the examination of requests regarding promotion of agricultural villages, we endeavored to recognize their values.

② Study with a farm households as a unit

Interviewees were the heads of households (paterfamilias). Study items were as follows: questions on the present situation of races; population; area of agricultural land, grazing land, forests and planted crops; the amount of livestock, the foundation of production, the bedrock upon which the livelihoods of the villagers in the area depend and the social base; and questions about the present situation of production of agriculture, stock raising and forestry; and requests related to promotion of agricultural villages. Although many of the study items are in common with those for village chiefs, there was addition of items peculiar to UPAs such as common sectors, private land, housekeeping expenses in a month and work away from home.

③ Descriptions of the participatory rural appraisal survey

Descriptions of the participatory rural appraisal survey are as shown in Table 2.1.1.

Table 2.1.1 Items of participatory rural appraisal (PRA)

PRA Item	Description
Matrix classification diagram	To classify the trees and livestock, and give points according to the importance of utilization, then clarify the preference of the villagers by totaling the given points.
Seasonal labor calendar	To draw a diagram which shows the seasonal labor change in labor amount by each type of labor.
Resources diagram	To produce a map of agricultural, stock raising and forestry resources, natural ecological resources such as rivers and swamps, physical resources such as roads, dams, irrigation facilities in the village.
Social diagram	To produce a map of social infrastructure such as clinic, school, mosque, shop, market, well, grain storage in the village.
Transect diagram	To sketch the features of the followings by passing a village walk which includes the main agro-ecological system of the village. (surface land use, soils, crops, livestock, other features, problems)
Production cycle diagram	To draw production diagrams of principal crop and livestock, and add necessary inputs (labor hiring fee, materials etc.), outputs and problems.
Organization relation diagram (Venn diagram)	To draw circles which represent organizations in the village. The size of the circle indicates importance and the overlap indicates the degree of relations.
Flow diagram	To draw the inflow and outflow of natural resources, goods, and people.
Daily routine work diagram	To draw diagrams which show the daily work volume on the basis of the work type both in the rainy season and in the dry season.
Priority and feasibility diagram	To draw diagrams which show necessary measures for the solution of the problems by priority and feasibility

The field survey was carried out in the three-group system and one week was spent for each village. When speaking with the questionees, we felt that it was extremely difficult to obtain accurate answers of area of agricultural land, the yield and the number of livestock. The survey was sometimes made during the night because the period of the survey was the rainy season and farmers' attendance was small in the daytime as they took preferred going out for agricultural work in the daytime.

(2) Results of the survey for other sectors

The social and economic conditions of target villages on the basis of three types of rural appraisal are described in ANNEXE V2.1.1. The summary of the results of various studies to grasp the present situation is shown in Table 2.1.2.

Table 2.1.2 General situation of each district obtained from the results of the surveys to grasp the present situation

1) Land ownership and land use

Study Item	Katiena District	Cinzana District	Soignebouougou District
Actual status of village boundary	Definite boundary by roads and forests	Definite boundary by roads, footpaths in cultivated land, and forests	Definite boundary by roads, forests and hills.
Traditional land distribution to farmers	Joint use of land changed into ownership of each concession 20 years ago.	Same as left	Same as left
Terrain	Has 'fara', a kind of wadi, but entirely flat with little undulation.	Relatively flat, but with undulation in about 3 to 6 m of height difference	Basin-like terrain enclosed with small hills with several 10 to 10 meters high.
Present status of vegetation and land use	The central part of a village includes permanent fields, its surrounding area consists of fields. There are relatively many forests around wadis. Rich land resources. For rotational fields, the fallow periods are maintained.	Land resources are less than in other Districts. Rotational fields are changed into permanent fields. There are few large forests, but a few coarse woodlands are at the circumference of a village.	The central part of a village includes permanent fields, its surrounding area consists of fields. The rotational fields are spread about 2km away from villages. The land conditions of the boundary area with adjacent villages are poor, only with bushes, used as grazing pastures.
Condition of infrastructure equipment	Roads between villages are sandier than Cinzana district, but silty, apt to be muddy and weak. Access to the central part of Katiena is good, but many road sections are inaccessible in the rainy season. Access to Ségou City is distant.	Roads between villages are silty and apt to be muddy and weak. Access to Ségou City is relatively good, but access to the national highway is difficult in the rainy season.	Roads between villages are sandy and weak. Literacy education facilities are relatively well provided. Access to Ségou City is relatively short.

2) Agriculture

Study Item	Katiena District	Cinzana District	Soignebouougou District
Crop varieties (typically millet)	About 10 varieties are cultivated. Boboni and Troniou are cultivated in a large area of fields. As seeds are little renewed, but mostly homemade, they may be degenerated.	Same as left. The varieties are similar to those in Katiena because this district is near Katiena.	Same as left. However, Benkadi introduced in the JGRC study is prevailing in this district.
Cultivating system	Fields are plowed by cows. No chemical fertilizers are used, but animal excrement manure is partly used. Farming tools are used in a lower level than in other districts.	Same as left. The unit yield is the highest in a normal year.	Same as left. The unit yield is the lowest in 3 districts due to terrain. This district requires more labor than others.
Growth and damages due to pests	The cereal production in this year is much lower than the previous year because rainfall was delayed and was irregular and low. (The yield decreased 40%.) Damages due to pests were lower due to the lower rainfall than in the average year.	Same as left. The yield rate decrease was the highest (more than 85%). Damages of Striga (parasite weeds on millet and sorghum) appeared partly.	Same as left. The yield rate decrease was low (less than 30%), but millet was partly damaged due to downy mildew and weeds. Owing to the JGRC's activity, animal excrement manure is prevailing. This may be the cause of the low yield decrease.
Factors of lower production	The largest factors were change in yearly rainfall and irregular, low	Same as left. The rainy days and rainfall were 20 - 30%	Same as left. The rainfall was the lowest in this district (67% lower

	rainfall. The rainfall was about 6% lower than the previous year. Farming tools (cow-towed plows and carts) were less used than in other districts, resulting in difficulty in timely farming work. Access to fields in the rainy season was bad due to muddy roads with bad draining.	lower than the previous year. The largest impact on lower production was maybe the start delay and the early end of the rainy season.	than the previous year). This district is located in the extension of the Koutiala plateau, having relatively steep slopes and shallow subsoil. For higher productivity in this district, soil conservation and use of organic materials are indispensable.
Working conditions of family members	In the selected UPA, the average number of a family was 22 and 43% of the working population who were agricultural workers	Average no. of family members: 15 40% was agricultural workers	Average no. of family members: 29 50% was agricultural workers.

3) Stock raising

Study Item	Katiena District	Cinzana District	Soignebougou District
Number of heads of raised livestock	The number of heads of raised livestock per UPA was the highest in three districts, 16.8 UBT because this district is rich in fodder resources.	The increase rate of raised livestock since 1995 was the highest in 3 districts, doubled in UBT owing to rainfall and stable agricultural production. The number of heads of raised livestock was 6.8 UBT.	The number of heads of livestock was only 6.0 UBT due to poor fodder resources, but increased slightly this year.
Species	Peul cows, Sahel sheep and Sahel goats are mostly raised. Fowl is the traditional species.	Peul and Maure cows, Sahel and Djalonké sheep and Sahel goats are mostly raised. Fowl is the traditional species.	Besides Peul and Maure species, Azawak cows are raised. Azawak was introduced from Niger by JGRC. Sheep and goats are the Sahel species. For fowl, improvement of the traditional species by the introduction of Rhode Island Red species is under progress.
Conditions of livestock diseases	There is no vaccination facility. Most diseases include cowpox, anthrax and cow pest for cows, pest for sheep and goats, and Newcastle for fowl. The mortality of calves reached 15% and that of sheep and goats was more than 20%.	There is no vaccination facility and the conditions of livestock diseases are the same as in Katiena district. Besides the diseases, damages due to internal and external parasites are large. Fowl had been annihilated due to infectious diseases.	Vaccination facilities are installed in 2 villages and the hygiene conditions are the best in 3 districts. In JGRC study, it is necessary to install vaccination facilities for the higher vaccination rate. The vaccination of fowl has also been started.
Fodder resources	The total area of natural grasslands and woodlands is more than 4,600 ha, and is so rich in fodder resources. The fodder demand and supply is balanced on estimation base on this district.	The total area of natural grasslands and woodlands is lower. Main fodder resources are grasses in fallow fields and residuals of crops in cultivated fields. The demand and supply balance is different from village to village, but there is a surplus of supply in the entire district. Fodder plants such as niébé are cultivated.	The total area of grasslands and woodlands is low and the area of cultivated fields is low. The fodder demand and supply balance is a minus in this district, the poorest in fodder resources in 3 districts. The soil erosion is high in the natural grasslands on slope lands, which are becoming bare lands. In the JGRC verification project, improved fodders such as stylosanthes were introduced to expand the fodder production.
Stock raising management	Transhumance is not carried out. Only daily grazing is done during the farming period in the rainy season. Deposit management for Peul tribe is carried out. Fowl is left at large.	Transhumance outside the Terroir is carried out during the cultivating period. Livestock fattening is made under IFAD's support in some villages. For manure production, animal excrements are gathered in an enclosure installed in the	Transhumance is carried out as in the Cinzana district. In the JGRC's verification project, higher productivity was actually experienced, resulting in the expansion of fowl raising. Another result of JGRC efforts was sheep fattening, which

		premises of each farmhouse. In link with farming, livestock are used for plowing and weeding.	farmers are also dealing with.
Distribution of livestock products	The Katiéna market is in the Katiéna district. Access to the consumer areas in large cities such as Ségou is the farthest in 3 districts.	The distances to Cinzana and Ségou markets are more than 20km. A market is opened once a week in Zambougou village.	Access to Ségou, a large consumer city, is the easiest. There is a market in Konodmini.

4) Forestry

Study Item	Katiéna District	Cinzana District	Soignebougou District
Monitoring of forest resources	This district has a forest area and favorable forest resources compared to other districts. Total area of woodlands: 1,143 ha Average tree diameter at breast height: 8.6 cm	The conditions of forest resources are in the medium level in 3 districts. Total area of woodlands: 471 ha Average tree diameter at breast height: 7.0 cm	This district is nearer the urban area, resulting in a drastic depletion of forest resources. Total area of woodlands: 189 ha Average tree diameter at breast height: 4.3 cm
Use of forest resources	Newly developed fields are seen here and there.	One of the villages in this district has no forest, and some villages have depleted forest resources. Firewood collection is carried out in adjacent villages with their permits.	Three of five villages have no forest in this district. Firewood collection on an overnight trip is not unusual.
Promotion of improved ovens	The promotion rate of improved ovens is very different in 2 villages in this district. Bougan: 49.6% Kokoun: 2.7%	The promotion rate of improved ovens is low on average. DLABA : 9.6% N'Dinzana were : 0.8% Sinebougou : 10.1% Zambougou : 5.7% Zamgourabougou : 10.2%	The promotion rate of improved ovens is high on average. Dafimbougou : 48.2% Sakoibougou : 19.7% Siradoba : 37.2% Dougoutiguibougou : 39.3% Fabougou : 34.8%
Actual conditions of distribution	Only charcoal is produced and sold in the regular market in Katiéna.	Only charcoal is produced and sold in the regular market in Cinzana.	As this district is near the urban area, woodworked goods such as hand mills are manufactured in some villages, bringing cash income.
Raising seedling facilities, plantation area and seedling growth conditions	No facilities	No facilities Several ten trees of eucalyptus are planted in each plantation area.	Three of five villages (Siradoba, Dougoutiguibougou and Fabougou) have raising seedling facilities. The activity of planting precocious varieties such as eucalyptus is made.

5) Soil conservation

Study Item	Katiéna District	Cinzana District	Soignebougou District
Soil properties	In Alfosol, watery soil 'Dian', relatively fertile silty soil 'Boi' and less fertile gray sandy soil 'Tientienfin' are seen. In a year with low rainfall, plant growth is higher in the Tientienfin soil than in Boi, while it is the contrary with high rainfall.	In addition to Dian, Boi and Tientienfin, red sandy soil 'Tiantianble' is seen.	As there is little soil sediment due to rivers, Dian is not seen. At relatively low lands, Boi is seen and Tientienfin and Tiantianble are seen at slope lands. As influence of soil accumulation by rivers is small, Dian is not seen. There are observations of Boi in the relatively low land, Naran in sandy clay loam whose soil layer is thin at the foot of hills, Tiantianfin and Tiantianble in inclined land, and Ganganble, a kind of Ultisol whose fertility is the lowest of laterite soils.
Soil erosion/environmental problems	The terrain in this district is flat and the soil erosion problem is not so serious. The soil of Dian and Boi is hard in the dry season,	The terrain is relatively flat but subject to sheet erosion due to water and winds. Tiantianble is	The terrain in this district has relatively large slopes, so that soil erosion due to water flows is seen. Because of decrease of fallow years and lack of

	but expands and softens. There are a few soil problems, especially wind erosion in this district.	especially liable to wind corrosion, so that care is required. (Also the same in Soignebouyou.)	income-generating activity, firewood trees are cut for cash incomes, aggravating the soil more.
Soil conservation measures in operation	The conventional soil conservation methods are not adopted, but the necessity for plantation to suppress the mud and sand inflow into wadi is recognized.	Farmers came to recognize the effect of planting hedges of euphorbia.	As one of the JGRC activities, stone piles on contour lines and brushwood fences were installed for soil conservation, having successful results.

6) Agricultural and rural livelihood infrastructure

① Water resources

Study Item	Katiena District	Cinzana District	Soignebouyou District
Ponds	There are 6 ponds that are used for agriculture, fish farming, drinking water sites for livestock and soil dig-out sites for banco blocks. Most of these ponds are temporary and are not available all year. However, the dam construction in the Bani River is in progress in the vicinity of this district, and it is expected that the water level in wadi will rise so high that the wadi swamps can be used all year.	There are 12 ponds that are used for agriculture, fish farming, drinking water sites for livestock and soil dig-out sites for banco blocks. Most of these ponds are temporary water sites and are not available all the year.	There are 16 ponds that are used for agriculture, fish farming, drinking water sites for livestock and soil dig-out sites for banco blocks. Most of these ponds are temporary water sites and are not available all year. Of these ponds, the pond located between Dougoutiguibougou and Fabougou is being rehabilitated in the JGRC verification project.
Conditions of use of wells	17 traditional wells; 1 modern large-diameter well. Pumped volume: 26 – 28 liters/person/day. Drinking water is obtained from traditional wells.	18 traditional wells; 5 modern large-diameter wells; 6 boreholes. 3 boreholes are unusable due to failure of pumps. Pumped volume: 10- 28 liters/person/day	18 traditional wells; 4 modern large-diameter wells; 4 boreholes. One borehole cannot be used due to pump failure.
Underwater recharge storage	Underwater level: GL –15 to –18m The aquifer is mainly a CT layer. There may be a large underwater recharge storage in a thick alluvium deposit along wadi.	Underwater level: GL –31 to –35m This district is distant from large rivers, so that the underwater reserve capacity is relatively low and the underwater level is low.	Underwater level: GL –25 to –31m The aquifer is mainly a CT layer. This district is distant from large rivers, so that the underwater reserve capacity is relatively low and the underwater level is low.
Well water quality	As the underwater level is shallow and there is only one modern well for drinking water, quality drinking water is not easy to obtain.	Many of the wells are contaminated with coliform bacilli. The water obtained from modern wells is of a little better quality than water from traditional wells.	There are some wells contaminated with coliform bacilli, but the contamination with nitrogen and bacilli is less than in other districts.

② Road improvement

Study Item	Katiena District	Cinzana District	Soignebouyou District
Roads to a central village or to villages where a market is opened	The road to Katiena is paved with laterite and accessible even in the rainy season.	The road to Zambougou village where a market is opened is paved with laterite, but its maintenance is bad. It is not accessible partly in the rainy season, so a roundabout route has to be taken through adjacent fields along the road.	The road to Konodmini village where a market is opened is not yet maintained, but it is accessible even in the rainy season, requiring a lot of time.
Inter-village roads	All inter-village roads are not maintained. Especially the road from Bougan village to Koukon village is impassable in the rainy season. So a roundabout route through a wagon road has to be taken.	Not maintained at all.	Not maintained at all.

③ Livelihood facilities

Study Item	Katiena District	Cinzana District	Soignebouyou District
Mosques	1	4	5
Literacy centers	1 (decrepitude)	4 (decrepitude)	3 (decrepitude)
Primary schools	1 (under construction)	1	0
Storehouses	1	5	0
Others	Islamic school: 1	Market: 1 Free clinics: 2	Christian church: 1 Mill: 1

Table 2.1.3 shows the combined results of studies mentioned above which are organized as a list of "evaluation of the base line conditions that may influence evaluation of verification projects."

Table 2.1.3 Evaluation of the base line conditions which may influence evaluation of verification projects

District name	Village name	Natural conditions				Social and economic conditions						Conditions of input of projects			Other
		Topography	Soil	Water source	Area	Population	Degree of education	Democratic system	Democratic	Market location	Religion	Leadership	Ability of the local coordinator	Experience of receiving aid	Recognition of desertification by the residents
		Dip	Scientific analysis	Underground water level	ha	Population	Literal ability	AB	AB	Distance from the market	Fact	Study Team	Actual results	Total evaluation of the items written left	PRA survey
Katiena	Bougou	○	○	17	1780	485	△	○	○	×	M	○	△	×	×
	Kokoun	○	△	16	3840	906	△	○	△	△	MA	△	△	×	×
	Whole district	○	○	17	5620	1391	△	○	○	×	M	○	△	×	×
Cinzana	Dlaba	×	×	32	300	232	○	○	○	△	M	⊙	○	○	○
	N' dinzana were	○	△	32	780	330	×	×	×	×	M	△	○	△	△
	Sinebougou	○	△	32	1460	308	○	○	○	△	M	○	○	⊙	△
	Zambougou	○	△	32	1020	727	○	△	○	△	M	△	○	○	△
	Zangourabougou2	×	×	23	1070	407	○	○	○	△	M	△	○	○	○
	Whole district	△	△	32	4630	2001	○	○	○	△	M	○	○	○	△
	Whole district	△	△	32	4630	2001	○	○	○	△	M	○	○	○	△
Soignebougou	Dafinbougou	×	×	28	710	241	×	○	○	○	M	△	×	○	△
	Sakoibougou	×	×	28	890	539	○	○	×	○	MC	×	×	○	○
	Siradoba	×	×	27	550	154	×	○	○	○	M	△	×	○	○
	Dougoutigoubougou	×	×	30	220	218	×	○	○	○	M	△	×	○	○
	Fabougou	×	×	28	230	194	×	○	×	○	M	×	×	○	○
	Whole district	×	×	28	2600	1346	×	○	△	○	M	△	×	○	○

*1. "AB" in the column of determination indicates that the determination and evaluation are made by the local coordinators. "Study team" indicates that the determination is made by the study team.

2. The topography is determined based on the gradient of slope and the amount of rubbles.

3. In the column of religion, "M" stands for Muslim, "C" for Christian, and "A" for Animism.

4. A double circle (⊙) is used for evaluating the remarkably favorable condition. A circle (○) means good, a triangle (△) means normal, and x means poor. All are relative evaluations.

2.2 Monitoring of Verification Projects

The number of projects in the verification villages is shown in Table 2.2.1. The process and results of the verification projects are indicated in table format for each project and shown in Tables 2.2.1.1 to 2.2.6.3.

Terroir Management Committees were established in 12 villages almost simultaneously in a short term from November to December 2000. The background of smooth establishment of the Committees in all villages is that awareness of the villagers through the participatory rural appraisal survey advanced satisfactorily partly because facilitators' experience and ability were high. It is presumed that there was expectation, as another reason, that if a receiver of aid was clarified by organizing a Terroir Management Committee on the villagers' side, succeeding aid and things would be able to be obtained more easily.

The Study Team anticipated that problems would appear in the aspects of project operation and management including provision of simple labor, payment of the allotted money and establishment of rules of the Specific Activity Group in the stage of the full-scale execution of the verification projects in villages where the Committee had been established easily with "expectation of physical supply" as the main motivation at that time.

However on the contrary to the anticipation, although some problems were observed at the beginning of the projects, efforts at the verification projects were good in each village. Big troubles have not occurred in operation during or after the execution of the projects. Problems which took place at the beginning of the projects are improving as a result of consultation with the villagers' side through the local coordinator.

Although the implementation and operating state of project differ for each district or village, there was no village in which the CGTV operation was interrupted during the study period. All projects were implemented successfully under the leadership of CGTV.

2.2.1 Improvement of the project operating ability of residents

The fields of the improvement of the project operating ability of residents are classified into the following five ones.

- ① Establishment of support system for Terroir Management Committee
- ② Improvement of residents' project implementation ability
- ③ Improvement of literacy
- ④ Support for organizing residents
- ⑤ Support for the establishment of small-scale financial system

1) Establishment of support system for Terroir Management Committee

For the Master Plan, the extension workers must participate in training to play the roles of facilitators to the residents in fields such as ① improvement of extension tools including motorcycles and ② training as facilitators. However, the verification projects adopted a method

for recruiting experienced experts (local coordinators) from the public and assigned them in the villages when applying the Terroir Management Method due to time restriction. As for the training to the existing extension workers, only the training of participation-type study method was implemented on a trial basis. Therefore, a verification on whether the extension workers could sufficiently play the roles of facilitators was not made in this study.

Table 2.2.1 List of verification projects in each village

District name	Village name	Improvement of residents ability			Fulfillment of BHN		Stabilization of farmers' income (improvement of agricultural, stock raising, and silvicultural productivity)										Management of natural resources			Reduction of women's burden			
		Support for the establishment of CGTV	Improvement of literacy ability	Small-scale financial system	Well	Road	Provision of fertilizer	Provision of seeds	Small-scale irrigation (well)	Small-scale irrigation (marsh)	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 erosion of field soil	Mill	Improved oven	Handicraft manufacturing
	Unit	Number of villages	Number of houses	Number of villages	Number of wells	km	ha	ha	ha	ha	Number of locations	ha	Number of houses	Number of locations	Number of locations	Number of locations	Number of locations	Number of villages	Number of villages	Number of villages	Number of locations	Number of villages	Number of villages
Katiëna	Bougou	1	1	1	1	2.3	44	20	2	-	1	2	5	4	1	1	○	○	-	○	1	○	○
	Kokou	1	1	1	2	2.3	91	20	1	-		5	2	5	1	1	○	○	○	○	1	○	○
	Subtotal	2	2	2	3	4.6	135	40	3	-	1	7	7	9	2	2	2	2	1	2	2	2	2
Cinzana	Dlaba	1	1	1	1	-	25	20	0.25	0.4	-	1	4	1	-	1	○	○	-	○	-	○	○
	N' Dinzana were	1	1	1	1	-	26	20	0.25	-	-	3	4	1	1	1	○	○	-	○	1	○	○
	Sinebougou	1	1	1	-	2.1	31	20	-	-	-	6	2	1	-	1	○	○	○	○	1	○	○
	Zambougou	1	1	-	2	2.1	86	20	0.25	0.5	-	4	2	2	-	1	○	○	○	○	1	○	○
	Zangourabougou2	1	1	1	-	-	48	20	-	-	1	2	2	1	1	1	○	○	○	○	-	○	○
	Subtotal	5	5	4	4	4.2	216	100	0.75	0.9	1	16	14	6	2	5	5	5	3	5	3	5	5
Soignebougou	Dafinbougou	1	1	1	-	-	25	20	-	-	-	2	-	1	1	1	○	○	○	○	1	○	○
	Sakoibougou	1	1	1	-	3.5	29	20	-	-	-	1	2	-	-	1	○	○	○	○	-	○	○
	Siradoba	1	1	1	-	-	23	20	-	-	1	-	2	-	-	-	○	○	○	○	-	○	○
	Dougoutiguibougou	1	1	1	-	3.5	28	20	-	-	-	-	2	1	-	-	○	○	○	○	1	○	○
	Fabougou	1	1	1	-	-	24	20	-	-	-	-	-	1	-	-	○	○	○	○	-	○	○
	Subtotal	5	5	5	-	7	129	100	-	-	1	3	6	3	1	2	2	5	5	5	2	5	5
Total		12	12	11	7	15.8	480	240	3.75	0.9	3	26	27	18	5	9	9	12	9	10	7	12	12

Table 2.2.1.1 Monitoring Summary [Deployment of Local Coordinators (Accommodation, Motorbikes)]

Item		Content			
Purpose		<ul style="list-style-type: none"> To build a relationship of trust between the JICA Study Team and the villagers, and to boost residents' desire to participate in projects. To fulfill the role of facilitator for residents with regard to various activities. To facilitate contact between residents and the JICA Study Team. 			
Background		<ul style="list-style-type: none"> The villagers do not express their real views to outsiders. In past cases, their participation in development projects has tended to be only superficial. To ensure smooth execution of projects, there is an urgent need to build a relationship of trust with residents. The JICA Study Team cannot be permanently stationed in the villages. The JICA Study Team cannot speak Bambara, the local language. 			
Verification Item		<ul style="list-style-type: none"> Effective implementation and management of projects through the deployment of local coordinators (accommodation, motorbikes) 			
Planning Implementation Content	Selection Requirements	<ul style="list-style-type: none"> Agreement of residents to the deployment of one male and one female local coordinator in each district at the discretion of the JICA Study Team. Deployment of coordinators in the village with the best living conditions in each district. Provision of sun-dried bricks and labor by residents to build lodgings for the local coordinator. 			
	Request Status	<ul style="list-style-type: none"> Requests were received from all 12 villages. 			
	Selection Decision	<ul style="list-style-type: none"> 2 villages were selected in each district based on the proposed number of local coordinators to be assigned. 			
	Standards/ Structure	Local Coordinator	<ul style="list-style-type: none"> Can speak Bambara At least 3 years' experience in PRA surveys or terroir management Has motorbike licence Can reside in village 		
		Accommodation	<ul style="list-style-type: none"> Sun-dried bricks and cement mortar 1 bedroom, 2 offices, 1 storehouse, 1 guest room, 1 kitchen, 1 toilet 		
		Motorbike	<ul style="list-style-type: none"> 125cc off-road type 		
	Method/System	<ul style="list-style-type: none"> Appointment after recruiting through adverts in newspapers, screening and interviews Adequate briefing in aims of JICA survey Selection of villages through discussion with village, and deployment to selected villages Provision of materials, equipment and masons to build lodgings by Study Team, and provision of labor and sun-dried bricks by residents Purchase and loan of motorbike to local coordinator by Study Team 			
Results (Costs)	<ul style="list-style-type: none"> 6 motorbikes: 2 million Fcfa x 6 Fuel + maintenance costs: 50,000 Fcfa/month x 33 months x 6 				
Human Input	<ul style="list-style-type: none"> Study Team checks local coordinators' activities and provides guidance (4-5 days/month) 				
Anticipated Effect		<ul style="list-style-type: none"> Organization of CGTV and smooth implementation of projects by CGTV 			
Activities Condition	Implementation Process	<ul style="list-style-type: none"> Local coordinators were appointed in May 2002 and after discussions with residents, were deployed in each village in June. Since then, they have duly fulfilled their role in building a relationship of trust with residents and liaising between the Study Team and residents. 			
		Village	Local Coordinator	Lodging	Motorbike
		Kokoun	1 (Woman)	1	1
		Bougan	1	1	1
		Sinébouyou	1 (Woman)	1	1
		Zambouyou	1	1	1
		Sakoibouyou	1 (Woman)	1	1
	Dougoutiguibouyou	1	1	1	
Management	Local Coordinator	Managed by JICA Study Team	<ul style="list-style-type: none"> Regular monthly meetings with Study Team Attendance at projects Enlightenment of residents about projects 		

Item		Content	
		Accommodation	<p>Managed by local coordinator</p> <ul style="list-style-type: none"> The local coordinator's lodging is used to accommodate Japanese specialists, Mali C/P, consultants, etc. in the village. The outside walls and windows of some of the lodgings are broken and need repair. Due to delay in providing labor in Sakoibougou, construction of the lodging was 1 year later than in other villages.
		Motorbike	<p>Regular maintenance by local coordinator/mec hanic</p> <ul style="list-style-type: none"> Maintenance is performed regularly at the monthly meetings. Most damage is caused by the rider falling off.
Beneficial Impact Seen		<ul style="list-style-type: none"> Verification projects were implemented smoothly based on the relationship of trust built up between the local coordinator and residents. 	
Evaluation	Evaluation by Residents	<ul style="list-style-type: none"> The local coordinator is highly evaluated by residents because their views can be promptly and reliably conveyed to the Study Team and they can easily consult the local coordinator about various matters. The system of having the local coordinator live in the village is highly appraised by residents. 	
	Evaluation by Study Team	<ul style="list-style-type: none"> Deploying local coordinators is an extremely effective way of enabling the JICA Study Team to know the state of progress of the verification project and hear the views of the villagers. The performance of the villagers differs depending on the quality of the local coordinator. It is important that the local coordinator fully understands the aims and methods of JICA surveys at the initial stage of the verification project. 	
		<ul style="list-style-type: none"> As well as providing a stable base for the local coordinator in the village, the lodgings are also effectively used to accommodate outside visitors to the village. The labor provided in Sakoibougou was not sufficient to build the lodgings, but in other villages it was provided as promised. The motorbike is effective in enabling the local coordinator to get around, including to neighboring villages. 125cc off-road type motorbikes are too big for the local coordinators to handle and they often fall off. 	
Feedback to M/P	Local Coordinator	<ul style="list-style-type: none"> In the M/P extension workers will play the role of local coordinators in the verification project. Enlightenment and training will be provided for extension workers in the philosophy, content and methods of the M/P when starting a project. Advance explanation, with examples, of the style and number of reports to be submitted to the project office will be incorporated in the training. 	
	Motorbike	<ul style="list-style-type: none"> As 125cc off-road type motorbikes are hard to handle, resulting in frequent accidents, they will be replaced with 80cc on-road type motorbikes. By implementing a purchase system using payment in monthly installments, the user is responsible for maintaining the bike. 	

Table 2.2.1.2 Monitoring Summary [Training of Extension Workers in Participatory Social Surveys]

Item		Content
Purpose		<ul style="list-style-type: none"> To improve the ability of extension workers and commune representatives to act as facilitators for residents.
Background		<ul style="list-style-type: none"> In order to promote terroir management, the residents themselves must analyze the present state of the region and draw up plans, but there are no trained facilitators to support these activities. Extension workers and commune employees have virtually no knowledge or experience as facilitators, including participatory social survey methods.
Verification Item		<ul style="list-style-type: none"> Provision of training in participatory social survey methods for extension workers and commune representatives and confirmation of the degree of understanding.
Planning Implementation Content	Selection Requirements Request Status	<ul style="list-style-type: none"> Extension workers and commune representatives who perform extension activities in villages covered by the verification project.
	Selection Decision	<ul style="list-style-type: none"> Same as above
	Standards/ Structure	<ul style="list-style-type: none"> Implementation of 6-day training for 10 extension workers and 5 commune representatives.
	Method/ System	<ul style="list-style-type: none"> Commissioned to NGO PROMAV
	Results (Costs)	<ul style="list-style-type: none"> 2 million Fcfa
	Human Input	<ul style="list-style-type: none"> <Study Team> Planning of training <Mali> Participation in training
Anticipated Effect		<ul style="list-style-type: none"> Implementation of participatory rural appraisal surveys in the vicinity of villages covered by the verification project
Activities Condition	Implementation Process	<ul style="list-style-type: none"> Theoretical and practical training was held from 19 to 23 December 2001.
	Management/ Use	<ul style="list-style-type: none"> Some extension workers have utilized the methods that they learned through the training in other villages, but most have not.
Beneficial Impact Seen		<ul style="list-style-type: none"> The extension workers in charge of Katiena district utilized the methods that they learned.
Evaluation		<ul style="list-style-type: none"> The system for applying the methods learned through the training (materials, equipment, transport, necessary awareness, enlightenment, staff) is inadequate, so the methods are not fully applied.
Feedback to M/P		<ul style="list-style-type: none"> The conditions for applying the methods must be established at the same time as the training in participatory rural appraisal survey methods. Tools (audio-visual equipment, textbooks, motorbikes) must be provided.

2) Improvement of the Ability of Residents to Implement Projects

Improvement of the ability of residents to implement projects was promoted by the following projects: ① participatory rural appraisal surveys, ② formulation of development plans (land use plan (SAT), development project plan (PAT)) and support for monitoring PAT, ③ inspection of developed villages, and accounting and leadership training.

Table 2.2.1.3 Monitoring Summary [Participatory Rural Appraisal Survey]

Item		Content
Purpose		<ul style="list-style-type: none"> To enable the Study Team to acquire the necessary environmental, social and economic information on the village. To improve the ability of residents to analyze the actual situation and enhance their desire to participate in projects through the survey.
Background		<ul style="list-style-type: none"> There is a lack of environmental, social and economic information on villages. There has been no clear analysis of the actual situation by residents or awareness of the problem of deterioration of natural resources.
Verification Items		<ul style="list-style-type: none"> Verification of the ability of local consultants to implement PRA Verification of the possibility of actually acquiring the necessary information through PRA Verification of the ability of the residents themselves to analyze the environmental, social and economic conditions
Planning Implementation Content	Selection Requirements Request Status	<ul style="list-style-type: none"> Implemented at the suggestion of the Study Team (No requests were sought)
	Selection Decision	<ul style="list-style-type: none"> 12 villages covered by the verification project
	Standards/ Structure	<ul style="list-style-type: none"> Interviews with village leaders in groups according to sex and age were carried out for one week in each village.
	Method/ System	<ul style="list-style-type: none"> Commissioned to local consultant (CADIS) Attendance and supervision by Japanese specialist and local coordinator
	Costs	<ul style="list-style-type: none"> 57 million Fcfa (Costs include questionnaires)
	Human Input	<ul style="list-style-type: none"> <Study Team> Planning and commissioning <Mali> Accompaniment on PRA
Anticipated Effect		<ul style="list-style-type: none"> Acquisition of basic data for drawing up development plans, and improvement of villagers' ability to analyze the actual situation and their desire to implement projects.
Activities Condition	Implementation Process	<ul style="list-style-type: none"> Implemented for one week in each village from June through July 2000.
	Management	<ul style="list-style-type: none"> The survey results are managed and kept by the Study Team and CGTV.
	Use	<ul style="list-style-type: none"> The materials kept by the Study Team are utilized in many sectors. The materials kept by CGTV are not adequately utilized by the villagers themselves.
Beneficial Impact Seen		<ul style="list-style-type: none"> Effective in fostering the desire of residents to implement projects. Used as basic material for drawing up village development plans.
Evaluation		<ul style="list-style-type: none"> It was an effective means of acquiring the necessary information in a short time. It is not clear whether it was effective in improving the ability of the villagers to analyze the actual situation. Ways need to be found of using the material. As the project was implemented during the rainy season, the busiest time of year for farmers, it was difficult to hold at the planned time and obtain the participation of the required number of people. It was judged to be an essential project for implementing the M/P.
Feedback to M/P		<ul style="list-style-type: none"> Residents should be contacted beforehand and their promise to attend and keep a stock of their produce obtained in advance. The busiest farming season should be avoided when implementing surveys. There are plans for extension workers to study how to implement PRA by OJT in the first stage, and in the second stage to implement PRA themselves.

Table 2.2.1.4 Monitoring Summary [Formulation of Development Plans (Land Use Plan (SAT), Development Project Plan (PAT)) and Support Monitoring of PAT]

Item		Content			
Purpose		• To draw up a land use plan and development project plan for the village			
Background		<ul style="list-style-type: none"> • There is no clear agreement among the villagers about how to use the land. • No project implementation plan has been drawn up in line with the priorities of the village. • A systematic development plan needs to be drawn up in order to manage natural resources. 			
Verification Items		<ul style="list-style-type: none"> • Drawing up of a land use plan and development project plan • Signing of a project implementation agreement (pledge between the Study Team and CGTV) • Monitoring and evaluation by residents 			
Planning Implementation Content	Selection Requirements	• No land use plans or project implementation plans have been drawn up for the village.			
	Request Status	• 12 villages (Implemented according to a proposal by the Study Team as part of the support for establishing CGTV)			
	Selection Decision	• 12 villages			
	Standards/ Structure	• The land use plan (SAT) and development project plan (PAT) are drawn up in Bambara			
	Method/ System	Formulation of Plan	<ul style="list-style-type: none"> • The plans are drawn up following discussion with residents of the results of the PRA survey carried out beforehand. • Commissioned to local consultant (BEAGGES) • Content is checked by local coordinator and JICA Study Team 		
		Monitoring	• CGTV advises the C/P and local coordinator to grasp the state of progress of PAT and review the timing of projects not yet implemented.		
Participatory Evaluation		• After begin taught how by Japanese specialists, the local coordinator acts as a facilitator and jointly implements the project with the villagers.			
Results (Costs)		• Included in the project to support the establishment of CGTV			
Anticipated Effect		• Improvement of the ability of residents to manage and run projects			
Activities Condition	Implementation Process	Village	Period		
			Drawing Up of SAT/PAT	Monitoring of PAT	Evaluation of Verification Project
		Kokoun	2000/9-10	2002/2/19	
		Bougan	2000/9-10	2002/3/19	2002/7/2
		Dlaba	2000/9-10	2002/3/20, 4/14, 5/23	2002/8/18
		N'Dinzanawere	2000/9-10	2002/5/8	
		Sinébougou	2000/9-10	2002/4/14, 5/25	2002/8/16
		Zambougou	2000/9-10	2002/3/20, 4/13, 4/17, 5/19	2002/6/29
		Zangourabougou2	2000/9-10	2002/3/21, 4/15	2002/8/18
		Dafimbougou	2000/9-10	2002/3/6, 5/22	2002/7/3
		Sakoibougou	2000/9-10	2002/5/22	
		Siradoba	2000/9-10	2002/5/18	
		Fabougou	2000/9-10	2002/5/16	
	Dougoutiguibougou	2000/9-10	2002/3/5, 5/15		
Project costs (Fcfa)		Expenditure in support costs for establishment			
Management/ Use	Item	Management System	Management/Use		
	SAT	CGTV	• No occasional reviews have been conducted under the leadership of CGTV.		
	PAT	CGTV	• CGTV controls the progress of individual projects, but overall monitoring as PAT is insufficient.		

Item	Content	
Beneficial Impact Seen	<ul style="list-style-type: none"> The majority of projects were carried out smoothly by improving overall project management. 	
Evaluation	Drawing Up of plan	<ul style="list-style-type: none"> Simply drawing up a land use plan (SAT) does not lead to moves to formulate an agreement in the district concerned for land use regulations. Further enlightenment activities are needed. The development project plan (PAT) is effective in enhancing the awareness of residents with regard to autonomy.
	Monitoring	<ul style="list-style-type: none"> The ability of residents to plan and run projects is constantly being improved by regularly confirming the implementation status of the land use plan and development project plan in the village.
	Participatory Evaluation	<ul style="list-style-type: none"> It was effective for grasping which projects were highly appraised by residents. (The results of participatory evaluation are described in 3.2)
Feedback to M/P	<ul style="list-style-type: none"> Extension workers should advise that the land use plan, project implementation plan and project implementation agreement be drawn up first in Bambara in the initial stage of the project and distributed to residents. When drawing up land use plans, extension workers also teach the necessity of drawing up a land use agreement by inter-terroir in future. As for the project implementation plan, an overall plan should be created for the village including improvements already made through existing projects and future plans to be implemented by other agencies, and projects supported by the project office should be clearly defined. Extension workers should advise that it be decided in advance that CGTV regularly monitor and evaluate the progress of the plans. 	

Table 2.2.1.5 Monitoring Summary [Inspection of Developed Villages]

Item		Content					
Purpose		<ul style="list-style-type: none"> To enable residents to feel that they can implement development projects themselves through inspection of developed villages. To enable them to understand that a systematic response is necessary when implementing terroir management. 					
Background		<ul style="list-style-type: none"> Residents acknowledge the deterioration of natural resources and the lack of social infrastructure, but they do not know how to combat it in a concrete manner. Residents listen enthusiastically to success stories arising from the same ethnic group. 					
Verification Item		<ul style="list-style-type: none"> Inspection of other districts where measures have been implemented to conserve natural resources or improve living standards, and boosting of residents' desire and insight regarding implementing projects 					
Planning Implementation Content	Selection Requirements	<ul style="list-style-type: none"> A briefing session is held in the village after the inspection (at the suggestion of the JICA Study Team) 					
	Request Status	<ul style="list-style-type: none"> 12 villages 					
	Selection Decision	<ul style="list-style-type: none"> 12 villages 					
	Standards/ Structure	<ul style="list-style-type: none"> The members of the inspection group includes women and they are selected by the villagers. Katiena and Cinzana districts inspect Soinebougou district and Teryabougou village. Soinebougou district inspects CMDT district (N'gorokura, Falakura) and Teryabougou village in BLA Cercle. 					
	Method/System	<ul style="list-style-type: none"> The local coordinator and JICA Study Team CP are present at the inspection of developed villages. 					
	Results (Costs)	<ul style="list-style-type: none"> The cost of the bus etc. is included in support for the establishment of CGTV. 					
	Human Input	<ul style="list-style-type: none"> <Study Team> Planning and implementation of inspection <CP> Accompaniment on inspection, advice 					
Anticipated Effect		Residents feel that they "too can succeed through projects" and choose a development method.					
Activities Condition	Implementation Process	Year/District	Village	Period	Participants		
					Total	Women	Men
		2000/ Katiena	Kokoun	12/15~12/16	10		
			Bougan	12/15~12/16	10		
		2001/ Cinzana	Dlaba	1/5~1/7	8	5	3
			N'Dinzanawere	1/5~1/7	8	5	3
			Sinébougou	1/5~1/7	8	5	3
			Zambougou	1/5~1/7	8	4	4
			Zangourabougou2	1/5~1/7	8	5	3
			Dafimbougou	1/28~1/30	6	4	2
	2001/ Soignebougou	Sakoibougou	1/28~1/30	6	6	0	
		Siradoba	1/28~1/30	6	5	1	
		Fabougou	1/28~1/30	6	5	1	
	Dougoutiguibougou	1/28~1/30	6	6	0		
	Total			90			
Management/ Use	Equipment	<ul style="list-style-type: none"> 20-seater microbus 					
	Management System	<ul style="list-style-type: none"> Local coordinator contacts participants in advance 					
Beneficial Seen	Impact	<ul style="list-style-type: none"> The participants visit other districts where the villagers themselves have implemented projects, boosting their desire to implement projects in their own village. 					
Evaluation	Evaluation by Residents	<ul style="list-style-type: none"> According to the results of a questionnaire directed at CGTV officials, nearly all the respondents who participated in the inspection of developed villages said that the inspection was effective. 					
	Evaluation by Study Team	<ul style="list-style-type: none"> Seeing projects that are implemented by residents is an extremely effective means of promoting projects. 					
Feedback to M/P		<ul style="list-style-type: none"> Evaluation of the inspection by the residents themselves and reporting the results of the meeting with the other residents of the village after the inspection are obligatory requirements for selection. 					

Table 2.2.1.6 Monitoring Summary [Project for Accounting and Leadership Training]

Item		Content			
Purpose		• To improve the ability of CGTV officials to run organizations			
Background		• Officials in newly established CGTV have no previous systematic education in the role of leaders or accounting rules.			
Verification Item		• Implementation of study and training in the duties and role of leaders and in basic accounting techniques for CGTV officials.			
Planning/Implementation Content	Selection	• Implementation in all villages where CGTV have been established (proposed by the Study Team)			
	Standards	• The participants are CGTV officials			
	Method	• Commissioned to a local consultant. The participants gather in one village in each district and the training is held for 7 days.			
	Results	Year/District	Village	No. of Participants (Women)	Degree of understanding of over 75%
		2001/5/16~5/22 Katiéna	Kokoun	9(2)	3 out of 7 persons
			Bougan	9(2)	1 out of 9 persons
		2001/5/9~5/15 Cinzana	Dlaba	6(0)	2 out of 5 persons
			N'Dinzanawere	4(0)	1 out of 4 persons
			Sinébougou	5(0)	3 out of 5 persons
			Zambougou	8(0)	5 out of 8 persons
Zangourabougou2			5(0)	3 out of 5 persons	
2001/1/20~2/3 Soignebougou		Dafimbougou	7(0)	0 out of 7 persons	
		Sakoibougou	5(0)	4 out of 5 persons	
	Siradoba	4(0)	0 out of 4 persons		
	Fabougou	4(0)	0 out of 4 persons		
Dougoutiguibougou	7(0)	1 out of 7 persons			
Costs	• 1,326,300 Fcfa (excluding meals) (including cost of establishing CGTV)				
Human Input	<Study Team> Planning of training and commissioning 1 M/M <CP> Advice				
Anticipated Effect		• Improvement of leadership ability of CGTV officials			
Activities Condition	Management/Use	• The officials who underwent training are for the most part making good progress and directing CGTV activities overall, but none of the officials has achieved the necessary level with regard to clerical work or accounting.			
Beneficial Impact Seen		• The CGTV are for the most part well run by officials who underwent training.			
Evaluation	Evaluation by Residents	• According to the results of a questionnaire directed at the officials, almost all the participants in the leadership and accounting training said the training was useful. • Although the participants rated the content of the training highly, on the other hand two-thirds replied that they did not understand the role of officials.			
	Evaluation by Study Team	• There was not enough participation by women. • It is not clear how effective the training was for participants with a low literacy level. At the very least, the evaluation test at the end of the training produced poor results. • The percentage of participants with a good degree of understanding was low. • Judging from the poor results of the leadership training, it would be preferable for participants with a low literacy level to attend a literacy training beforehand.			
Feedback to M/P		• A system will be introduced where participants in the accounting and leadership training must have a literacy level of II or higher, and those with a lower level attend a literacy training first. • The degree of understanding should be grasped and extension workers should implement repeated leadership trainings.			