

**RUZIZI VALLEY
ENVIRONMENTAL RESTORATION PROJECT:
COMMUNITY-BASED AGRO-FOREST REHABILITATION**

Working Villages International/Villages de l'Avenir

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Ruzizi Valley Project : DR Congo
Luvungi/Itara- Territoire d'Uvira- Sud- Kivu

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CONTEXT AND JUSTIFICATION

1. GEOGRAPHICAL RANGE OF PROPOSED PROJECT

The focus of the proposed project is an area in the eastern section of the Democratic Republic of Congo (DR Congo) located at the northern tip of Lake Tanganyika. The land in this area was deforested by the population nearly a century ago. The area comprises the savannas, mountain valley and high plateaus of Bavira county; the Ruzizi Valley; and the segment of Bafuliru county which lies on the Katogota Road axis. Also included are the Sange (in Ruzizi Valley) and the Makobola littoral (shore) of Lake Tanganyika leading to Fizi land. These areas are agro sylvo-pastoral rural zones.

2. JUSTIFICATION

Currently the lack of vegetative cover in these zones is causing serious problems in multiple spheres including ecological, economic, sociological and political.

The lack of vegetative cover has resulted in a decline in the level of production, along with a decline in the numbers of young people who can be engaged in farming. Thus, the environmental degradation is a significant contributor to the level of poverty in the local community. Readily observable consequences of the insufficient vegetative cover include a range of serious problems, ranging from erosion and desertification of the environment to widespread malnutrition and illness in the local population.

Tragically, the impoverished population suffers from an extremely high level of unemployment, and is forced to engage in short-term survival strategies which further undermine the long-term health of the environment, and also undermine the well-being of the population itself. Some of the most environmentally devastating means of earning desperately needed income include cutting down forests for firewood, lumber, and the production of charcoal.

Indeed, the majority of the forest stands (ecosystems) are being subjected to a severe process of deforestation or degradation. This results in a devastating impact, not only on the ecosystems and the way of life of the autochthones or indigenous populations, but also on humanity as a whole, because degradation in this region such a significant factor contributing to overall climatic change and loss of biodiversity.

PROPOSED RANGE OF ECOLOGICAL REHABILITATION

The project will extend from the Katogota axis (village of Bafuliru) in the Ruzizi valley, to the littoral (shore of Lake Tanganyika) down to the Makobola axis. (Refer to Appendix map.)

Targeted Collectivities:

1. BAFULIRU: with 750 beneficiaries or 30 groups

Katogota: 4 groups
Itara/Luvungi: 4 groups
Lemera : 4 groups
Kigoma (Sange) : 4 groups
Biriba : 4 groups
Kiliba : 8 groups
Kawizi : 4 groups

2. RUZIZI VALLEY : with 750 beneficiaries or 30 groups

Bwegara (Kabamba) : 4 groups
Luberizi : 8 groups
Mutarule : 6 groups
Nyakabere : 6 groups
Ndunda (Sange) : 6 groups
Kagando : 6 groups

3. BAVIRA : 1000 beneficiaries or 40 groups

Rutemba: 8 groups
Kavinvira : 8 groups
Kalundu : 8 groups
Kigongo : 8 groups
Makobola : 8 groups

Notice: 2500 beneficiaries or 100 groups of 25 or more people, including young people and unemployed members (boys, girls with children and unmarried, divorced and widows).

PROJECT OBJECTIVES

Global objective: to promote the restoration of the balance of the ecosystem by reclaiming and restoring land which has been stripped of trees.

Specific objectives:

1. Plant 200 hectares of trees in an agro-forest setting, prefaced by an agricultural extension program to promote awareness and engage the energies of the local authorities and citizens in the proposed environmental rehabilitation zones;
2. Organize 100 groups in the targeted and selected sites;
3. Organize and train 2500 beneficiaries in the techniques for propagating seedlings and creation of agro-forest plantations;
4. Install 50 seedbeds for production of seedlings by the groups established;
5. To plant trees in association with food crops;
6. To educate the population about the laws governing environmental protection, and to insure the enforcement of such laws.

PROMOTING LOCAL AWARENESS

Public Relations with Local Authorities and Notable Persons

The objective of getting trees in the ground must be prefaced with a careful and sensitive process of public relations in order to open their minds and actively engage their interest in the project. Lacking such carefully administered public relations, as the project evolves, it will gradually meet increasing resistance which will pose more difficulties for agents on the ground. Leaders must feel that they have been considerably engaged from the very beginning.

Thus, the project envisages many small meetings with the local authorities and notables in the localities of the proposed environmental rehabilitation projects. Project coordinators will set up meetings with various authorities in each territory (administrative, military, and clerical).

Once meetings are set up, project leaders acting as agricultural extension agents can actually carry out the one-on-one or small meetings in order to outline the project's environmental and social objectives to the authorities, to explain our proposed activities, and to ask for their ongoing support for our activities.

Public Relations of 2500 beneficiaries

In addition to working with local community leaders, project leaders will meet with the wider population in each local in order to provide them with a clear explanation of the project, and explain how they can benefit by participating. This way each potential participant can express what capacities he can contribute to a local group. This component of the public relations program is crucial because it will increase enthusiasm for the project. In addition it will set the framework to insure that the project in each area is initiated in a coordinated manner, thus guaranteeing the

optimum co-operation in training sessions, division of labor and appropriation of materials for the project. The public relations component will not be strictly a separate stage, since it will be continuous as the project is being carried out.

Defining the Criteria for Selecting Participants

To avoid repeating past errors, it is important that the criteria for selecting participants be well defined, clearly understood by all. Our invitation for participation will extend to all people, including young people (female and male), widows, and divorced. This is to insure participation of all social sectors. Our objective is that the beneficiaries of the project should be 50% men and 50% of women. We envisage the project as follows:

Designation	Number of beneficiaries	Number of groups	Number of persons per group	Number of AL/Group	Number of girls, widows, girls with children and unmarried, divorced	Number of men
Material kits	2500	100	25	2	50%	50%

Participant selection :

- Public relations outreach by project supervisors and to talk with local authorities
- Identification of participants: (recorded using an index card identification data base)

Examination and Constitution of 100 Groups

Once the participants are selected, they will be organized into appropriate groups, according the needs and projects required in the different sites. This way we can avoid the absences and delays with work in each community. Groups will be coordinated according to their specific work environment.

This work will be done by coordinators who will maintain an index card database of the different participants and divide the local participants into different project teams.

Organization of 2500 beneficiaries

After public relations and selection of participants, the next important step will be training each participant for the module in which he or she will work. It is worthwhile to take the time to have designated training sessions to insure consistent work quality and procedures, and not just rely on haphazard on-the-job training. The extra effort that a good training session for each module requires will be repaid by a smooth, coordinated carrying out of the project.

Document: Module: Organization and the management of groups.

PS:

- Training of coordinators in the process of public relations and module formation.
- Project locations in each locality to be chosen in consultation with local authorities and the local population.
- Furnish water and materials needed for training sessions: copybooks, pens, tables, chalk.

Organizational Follow-up Visit before Plant Distribution

It is important to check each group after the formation and before the distribution to make sure of:

- Fair and representative participation of all beneficiaries;
- Clear understanding of the tasks for each module;
- Commitment to working as a group;
- To judge whether the group in question is ready to receive the kit of work materials

Distribution

Good planning and preparation guarantee that distribution can take place quickly and efficiently.

Training in Eco-Friendly Agricultural Techniques

The agricultural training will be an important component of the project. Once the groups (and sub-modules) are organized for the project, each will receive seeds and agricultural equipment. The work at each site will be managed by two coordinators who will take the role of agricultural extension agents, who have been specially trained to oversee both public relations and training. In turn, these agricultural extension agents can supervise activities, and also remain on site as authorities ready to answer specific inquiries. Apart from the immediate planting project, these agents will look for opportunities to train the local population in various methods of environmentally friendly forestry and agricultural techniques. The long-term goal will be to popularize sound agricultural methods and promote environmental cooperation in the targeted groups.

Note: The organization of local groups into different work modules will be guided by the local agricultural extension agents.

Installation of 50 Seedbeds

In the eighteen sites of the project, a total of 50 seedbeds will be installed. The installation will be mostly done by the agronomists under the guidance of the agricultural extension agents. The location of the seedbeds must be clearly defined in advance of planting, to avoid the loss of work time.

Planting of Trees and Sowing of Rehabilitation Crops

At each of the eighteen sites of the project, a plot ranging in size from 6 to 16 hectares will be established for planting the seedling trees and, where appropriate, the rehabilitation crops associated with them. The combined area of all eighteen sites will be 200 ha. Mowing and ploughing of 200 ha will proceed by the planting method which best assures the effectiveness of maintenance during two cultural seasons (Taungya system or Shamba in agro forestry). The project envisages using various seeds for rehabilitation crops, especially: corn, groundnuts, beans, soy beans, the latter of which can add valuable nitrogen content to the soil, and the former of which can add bulk to the soil, in addition to the function of providing food crops for the local population.

Dissemination of Project Information

All sites will benefit from large scale dissemination of project information. Included in public relations and training sessions will be dissemination of the law governing the environment. This must be further publicized by the local Media and by a booklet explaining the environmental law which can be distributed to targeted groups.

RESOURCES

▶ Human resources

- Agricultural Extension Agents;
- Agronomists;
- Public Relations Agents;
- Module-leaders;
- Field preparation/Field maintenance (agricultural workers)

Material resources

▶ Local transport

- Vehicles (rented);
- Motor bikes (purchased);
- Bicycles(purchased);
- Maintenance;
- Engine oil;
- Fuel (petrol and gas-oil);
- Customs duty;
- Insurance/ diverse taxes;
- Spare exchange/motorbike and bicycle services;

▶ Seedbed activities/Materials

- Seeds (agro forestry and food);
- Compound materials
 - Rope;
 - Wood sticks;
 - Papyrus;
 - Nails;
 - Hammer

- Polyethylene bags
- Agricultural equipment;
 - Pick;
 - Water can;
 - Hoes;
 - Machete, panga;
 - Shovel;
 - Post-hole digger;
 - Wheelbarrow;
 - Buckets;
 - Spraying equipment;
 - Rakes;
 - Shears;
 - Knife.

▶ Plantation activities

- Hoes;
- Machetes;
- Picks;
- Decameter (tape measure);
- Rope of alignment;
- Basket to carry seedlings;
- Agricultural Boots.

▶ Financial resources

- a) Physical Financing of beneficiaries (local participation);
- b) External financing requested.

PROJECT BENEFICIARIES - GENERAL INFORMATION

ACTIVITIES	Number of groups	Number of beneficiaries	Number/ Percentage of men		Number/ Percentage of women	
			Number	Percentage	Number	Percentage
Tree Planting	100	2500	1250	50%	1250	50%

GROUPS DISTRIBUTION ACCORDING TO THE SITES

COLLECTIVITY	SITES	Number of groups	Number of beneficiaries	Number of men in %	Number of women in %
BAFULIRU	KATOGOTA	4	100	50	50
	LUVUNGI	4	100	50	50
	LEMERA	4	100	50	50
	KIGOMA/S	4	100	50	50
	BIRIBA	4	100	50	50
	KILIBA	6	150	75	75
	KAWIZI	4	100	50	50
	Total	30	750	375	375
RUZIZI VALLEY	BWEGERA	4	100	50	50
	LUBERIZI	8	200	100	100
	MUTRARULE	3	75	35	40
	NYAKABERE	3	75	40	35
	NDUDA/S	6	150	75	75
	KAGANDO	6	150	75	75
	Total	30	750	375	375
	UVIRA	RUTEMBA	8	200	100
KAVIMVIRA		8	200	100	100
KALUNDU		8	200	100	100
KIGONDO		8	200	100	100
MAKOBOLA		8	200	100	100
Total		40	1000	500	500
TOTAL		100	2500	1250	375

SEEDBED DISTRIBUTION ACCORDING TO SITE

COLLECTIVITY	SITES	Number of groups	Number of seedbeds	Quantity per seedbed	Total seedling production
BAFULIRU	KATOGOTA	4	2	6,000	12,000
	LUVUNGI	4	2	6,000	12,000
	LEMERA	4	2	6,000	12,000
	KIGOMA/S	4	2	6,000	12,000
	BIRIBA	4	2	6,000	12,000
	KILIBA	6	3	6,000	18,000
	KAWIZI	4	2	6,000	12,000
	Total	30	15	42,000	90,000
RUZIZI VALLEY	BWEGERA	4	2	6,000	12,000
	LUBERIZI	8	4	6,000	24,000
	MUTRARULE	3	1,5	6,000	9,000
	NYAKABERE	3	1,5	6,000	9,000
	NDUDA/S	6	3	6,000	18,000
	KAGANDO	6	3	6,000	18,000
	Total	30	15	3,6000	90,000
UVIRA	RUTEMBA	8	4	6,000	24,000
	KAVIMVIRA	8	4	6,000	24,000
	KALUNDU	8	4	6,000	24,000
	KIGONDO	8	4	6,000	24,000
	MAKOBOLA	8	4	6,000	24,000
	Total	40	20	30,000	120,000
TOTAL	100	50	118,000	300,000	

HECTARES PER SITE

COLLECTIVITY	SITES	Number of groups	Number of beneficiaries	Size in Ha	Number of plants/Ha	Total plants
BAFULIRU	KATOGOTA	4	100	8	1112	8,896
	LUVUNGI	4	100	8	1112	8,896
	LEMERA	4	100	8	1112	8,896
	KIGOMA/S	4	100	8	1112	8,896
	BIRIBA	4	100	8	1112	8,896
	KILIBA	6	100	12	1112	13,344
	KAWIZI	4	100	8	1112	8,896
	Total	30	750	60	1112	66,720
RUZIZI VALLEY	BWEGERA	4	100	8	1112	8,896
	LUBERIZI	8	200	16	1112	17,192
	MUTRARULE	3	75	6	1112	6,672
	NYAKABERE	3	75	6	1112	6,672
	NDUDA/S	6	150	12	1112	13,344
	KAGANDO	6	150	12	1112	13,344
	Total	30	750	60	1112	66,720
UVIRA	RUTEMBA	8	200	16	1112	17,192
	KAVIMVIRA	8	200	16	1112	17,192
	KALUNDU	8	200	16	1112	17,192
	KIGONDO	8	200	16	1112	17,192
	MAKOBOLA	8	200	16	1112	17,192
	Total	40	1000	80	1112	88,960
TOTAL		100	2500	200		222,400

DETAILED COST OF THE PROJECT

DESIGNATION	QUANTITY	UNIT PRICE	TOTAL
1. <u>MATERIALS</u>			
Rope (Sisal)	500 pcs	\$ 3	\$ 1,500
Wood Sticks	3000 pcs	\$ 4	\$ 12,000
Papyrus	3000 bot	\$ 4	\$ 12,000
Polyethylene bags	273 kgs	\$ 10	\$ 2,730
Food seed	6000 kgs	\$ 0.50	\$ 30,000
Agro- forestry seed	18 kgs	\$ 5	\$ 90
		ST	\$ 58,320
2. <u>MATERIAL</u>			
Wheelbarrow	50 pcs	\$ 60	\$ 3,000
Shovels	250 pcs	\$ 7	\$ 1,750
Jeri cans for transporting water	250 pcs	\$ 10	\$ 2,500
Hoes	2500 pcs	\$ 3	\$ 7,500
Buckets water	50 pcs	\$ 3	\$ 150
Machetes	2500 pcs	\$ 3	\$ 7,500
water can	150 kgs	\$ 10	\$ 1,500
Râteaux (Rakes)	50 pcs	\$ 3	\$ 150
Nails	250 kgs	\$ 4	\$ 1,000
Hammers	50 pcs	\$ 3	\$ 150
Sprayers equipment	50 pcs	\$ 30	\$ 1,500
Shears	50 pcs	\$ 5	\$ 250
Picks	500 pcs	\$ 7.50	\$ 3,750
Decameter (Tape measure)	52 pcs	\$ 35	\$ 1,820
Nylon rope	100 pcs	\$ 7.50	\$ 750
Agricultural Boots	52 pairs	\$ 8	\$ 416
Basket to carry seedlings	2500 pcs	\$ 2	\$ 5,000
Knife	50 pcs	\$ 3	\$ 150
		ST	\$ 38,836
3. <u>TRAVELLING EQUIPMENT</u>			
Vehicles (rental)	1	\$ 50/day	\$ 1,200
Motorbike (purchased)	2	\$ 4,500	\$ 9,000
Bicycles (purchased)	50	\$ 70	\$ 3,500
		S/T	\$ 13,700
4. <u>MAINTENANCE</u>			
Engine Oil	9 futs	\$ 200	\$ 1,800
Petrol (gasoline)	36.6 futs	\$ 300	\$ 10,980
Spare parts motorcycle		Forfait	\$ 1,000
Spare exchange bicycle		Forfait	\$ 500
Wheel spare exchange motor bike	8	\$ 25	\$ 200
Wheel spare exchange bike.	8	\$ 5	\$ 40
		S/T	\$ 14,520
		TOTAL	\$ 93,466

5. INSURANCE/TAXES			
Vehicle	1	\$ 1000	\$ 1,000
Motorbike	2 Suzuki	\$ 300	\$ 600
		ST	\$ 1,600
6. CUSTOMS DUTY			
Motorbike	2	\$ 2000	\$ 4,000
		ST	\$ 5,600
7. PLANTING ACTIVITIES (200 Ha)			
Delimitation (demarcation)	800	\$ 2.50	\$ 2,000
Mowing	20000	\$ 2.50	\$ 50,000
Labour	40000	\$ 2.50	\$ 100,000
Earthwork and perforating	9000	\$ 2.50	\$ 22,500
Seedling transport	9000	\$ 2.50	\$ 22,500
Plantation	9000	\$ 2.50	\$ 22,500
Sowing	20000	\$ 2.50	\$ 50,000
Regarnissage (compensatory planting)	8000	\$ 2.50	\$ 20,000
Fire prevention	3200	\$ 2.50	\$ 8,000
2 weedings	80000	\$ 2.50	\$ 200,000
		ST	\$ 497,500
8. SEEDBEDS ACTIVITIES (50 BEDS)			
Compound building	1250	\$ 2.50	\$ 3,125
Tray of shade building	1250	\$ 2.50	\$ 3,125
Humus transport	1250	\$ 2.50	\$ 3,125
Sorting	1250	\$ 2.50	\$ 3,125
Bagging	1250	\$ 2.50	\$ 3,125
Parking in cultural space	1250	\$ 2.50	\$ 3,125
Repiquage in poly bag (transplanting)	1250	\$ 2.50	\$ 3,125
Watering	1250	\$ 2.50	\$ 3,125
		ST	\$ 25,000

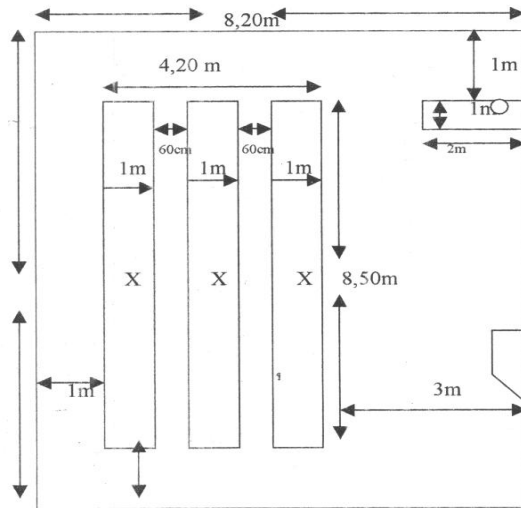
9. SERVICE DE GESTION GENERALE DU PROJET			
<u>Data processing equipment</u>			
Computer/Printer	4	\$ 875	\$ 3,500
Photocopier	1	\$ 2500	\$ 2,500
Calculators	106	\$ 25	\$ 2,630
Duplicator papers (reams)	250	\$ 5	\$ 1,250
Sorter	100	\$ 5	\$ 500
Cases	2000	\$ 0.045	\$ 90
Bales	100	\$ 0.18	\$ 18
Envelops	50	\$ 1	\$ 50
Pen	100	\$ 4,5	\$ 450
Carbon pencil	10	\$ 8	\$ 80
Tracers	5	\$ 8	\$ 40
Correcting ink	10	\$ 1,8	\$ 18
Staplers	5	\$ 15	\$ 75
Staples	100	\$ 0.45	\$ 45
Attache-tout	100	\$ 0.45	\$ 45
Office perforator	5	\$ 15	\$ 75
Portfolio	152	\$ 15	\$ 225
		ST	\$ 22,111
10. PUBLIC RELATIONS AND TRAINING			
Megaphons	50	\$ 15	\$ 750
Batteries	50	\$ 2	\$ 100
Books	10	\$ 2,16	\$ 216
Pen	20 boxes	\$ 4,5	\$ 91
Black board	50	\$ 50	\$ 2,500
Allowance of ground	102	Forfait (fixed price)	\$ 10,200
Chalks	50	\$ 2	\$ 100
Per diem	2500	\$ 1,5	\$ 3,750
Bloc notes	152	\$ 3	\$ 456
		ST	\$ 18,161
12. TRAVEL OF PERSONNEL			
Mission fees	5	\$ 50	\$ 250
		ST	\$ 250
13. WORK CONTRACTS			
Work Inspection			
Payment of social security	55	\$ 120.00	\$ 67,080
Allowance end of carrier	55	\$ 254.20	\$ 124,145
	559	TOTAL	\$ 209,225

COST OF THE PROJECT

a) Cost of investment	
Materials	\$ 58,230
Seedbeds activities	\$ 25,000
Plantation activities	\$ 247,500
Material	\$ 38,836
TOTAL=	\$ 619,566
b) Cost of operation	
Traveling equipment	\$13,700
Maintenance	\$ 93,466
Insurance and diverse taxes	\$ 1,600
Customs duty	\$ 4,000
Data treatment equipment	\$ 22,111
Formation – publicity	\$ 18,163
Salaries	\$ 795,900
Travel of personnel	\$ 250
Work contract	\$ 209,225
TOTAL=	\$ 1,158,415
c) Unforeseen (5%)	\$ 76,461
d) Local participation	
- Plantation activities divided by 2 or \$ 497,500.00 : 2 = \$ 248,750 thus 248,750 ;public relations and 248,750 local participation	\$ 248,750
e) Total cost of project	
Cost of investment	\$ 370,816
Cost of operation	\$ 1,158,415
Unforeseen	\$ 76,461
TOTAL=	\$ 1,605,693
Local participation	\$ 248,750
TOTAL GENERAL	\$ 1,854,443

LAYOUT OF SEEDBED

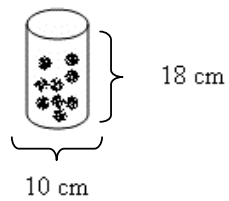
Diagram



Legend:

- : Nursing space: 2 m x 1 m
- X : cultural space is of 8.5 x 1 m
- : Entry cultural space and the compound: 1 m of large

Dimension of polyethylene bags to buy: 18 cm x 10 cm



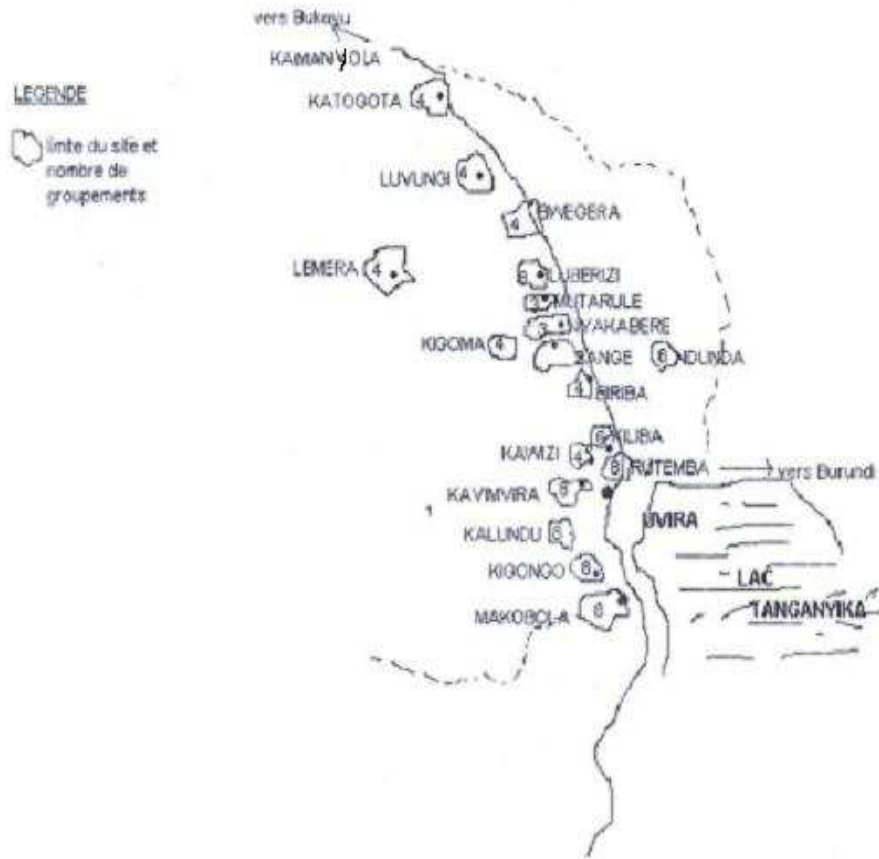
Number of bags by cultural space: 850 bags by cultural space

Number of seedlings by hectare: 1,112 seedlings or legs/ha

Spacing in fields: 3m x 3m

APPENDIX

GROUP DISTRIBUTION FOR THE TARGETED SITES



PHOTOS

- A. Example of deforested terrain
- B. Example of a forested hillside (remote village of Kutoba)
- C. Example of agro-forestry cropping

