2015 – 2016 Plan Vivo Annual Report

Rehabilitation and sustainable management by AGED of degraded pastures in the Sahel region of Burkina Faso

Submitted by AGED

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23 April 2017

Content

Summary

Project overview	
Reporting period	1st November 2015 – 30th October 2016
Geographical areas	Villages Djigo, Toukakorno, Toukabayel and Sambonaye
Technical specifications in use	Rehabilitation and sustainable management by AGED of degraded pastures in the Sahel region of Burkina Faso

Project indicators	Historical	Added/ Issued this period (2015-2016)	Total
No. smallholder households with PES agreements	0	0	0
No. community groups with PES agreements (where applicable)	0	4	4
Approximate number of households in these community groups	0	1,053	1,053
Area under management (ha) where PES agreements are in place	0	1,181	1,181
Total PES payments made to participants (USD)	0	0	0
Total sum held in trust for future PES payments (USD)			0
Allocation to Plan Vivo buffer (tCO_2)	0	480	480
Saleable emissions reductions achieved (tCO_2)	0	1,922	1,922
Unsold Stock at time of Submission (PVC)			0
Total Unsold Stock (PVCs including this vintage)			0
Plan Vivo Certificates (PVCs) issued to date			**0**
Plan Vivo Certificates requested for issuance (2016 Vintage)			**1,922**
Plan Vivo Certificates available for future issuance (REDD only)			**0**
Total PVCs issued (including this report)			**1,922**

Part A: Project updates

A1 Key events

Several community meetings have been organized within the different villages:

- *Sept 2015*: sensitization meetings with community leaders, advisors of the villages, religious and customary leaders on the project and the Plan Vivo process in preparation of the community meetings in order to insure the involvement of the whole community.
- *Dec 2015*: information meetings concerning explanation, and planning of activities within the framework of the Plan Vivo process. Realization of focus group meetings in the context of the village's diagnosis (history, major events, transhumance, land, agro-silvopastoral production, etc.) and elaboration of the Plan Vivos in accordance with the local land charters. The priorities of the villages formulated in the PES contracts were adopted by General Assembly of the CVD after some consultation rounds through the focus group approach.
- *April 2016*: socio-economic impact assessments by village through household surveys and opening of the accounts at village level for the management of the Plan Vivo fund.
- *September 2016*: organization of the forest inventories.

The project has been presented on the 22th of April 2016 during the workshop dedicated to Carbon Finance “La finance Carbone, perspective d’avenir au Burkina Faso” organized by the Forest Investment Programme Burkina Faso and financed by the World Bank.

309 hectares have been replanted by direct seeding in 2015 before the rainy season out of the 1,181 ha under PES management with positive results on the ecosystems: (i) Djigo 146 ha; (ii) Toukakorno 102 ha; (iii) Toukabayel 41 ha; and (iv) Sambonaye 20 ha .

A2 Successes and challenges

The Plan Vivo-approved validator confirmed that the communities and village leaders had a good understanding of the Plan Vivo process and good adherence of the different actions to the process. In addition all villages participating in the Plan Vivo project were highly involved in the application of the local land charter through the establishment of monitoring committees per village.

Challenges

I. There are difficulties related to the management of natural resources between transhumant pastoralist that reside next to the sites or on the sites and the village. Some transhumant pastoralist people may not always apply the rules defined in the local land charter of the Plan Vivo. In addition gathering of hay by the populations of the riparian villages for commercial purposes is also a source of conflict. Monitoring committees will enhance their monitoring task. If in case of violation of the local land charter rules the Village Committee on Tenure Conciliation can’t reconcile the conflict, the case is forwarded to the relevant local authority.
II. Half-moons on the rehabilitated sites where trees didn’t establish, need to be replanted by direct seeding before the rainy season. The project coordinator AGED will assist the communities with this activity.
III. AGED need to sell its Plan Vivo certificates to generate the necessary income. CO2logic will assist AGED in monetising the Plan Vivo certificates.

A3 Project developments

Based on the first socio-economic impact assessment the indicators have been specified in the PDD. Nevertheless these will need to be revised during the following annual reporting period.

Table A1: Document updates

PDD (including technical specifications) document version:		
PDD section	**Date change**	**Short description of update**
K2 Socio-economic impacts	*03 2017*	*Specification of the indicators*

The updated PDD is submitted to the Plan Vivo Foundation for approval together with Annual Report 2015-2016.

Table A2: Progress against corrective actions

Document	Corrective action	Activity against this
Validation report	CAR 01: Opening of a special bank account for the Plan Vivo project	Realized
Validation report	CAR 02: Replanting by direct seeding of half-moons without tree plants of the rehabilitated sites	Realized
Validation report	CAR 03: change of inventory method	Realized
Validation report	CAR 04: Revise the socio-economic indicators	Socio-economic indicators have slightly been revised based on the assessment conducted in the first monitoring period. Nevertheless the survey and the choice of socio-economic indicators will be revised in the second monitoring period, as well as the retroactive baseline survey.

A4 Future Developments

The plan is to include other villages in the Plan Vivo project in the coming year.

Part B: Project activities

B1 Project activities generating Plan Vivo Certificates

The Plan Vivo technical specification is applicable to degraded pastures in the Sahelian zone of Burkina Faso. The sites are old degraded grazing lands of which the topsoil is

characterized by a clogged, hardened and impenetrable surface. The responsibilities for and benefits from these activities are shared communally per village.

Table B1: Project activity summary

Name of technical specification	Area (Ha)	No smallholder households	No Community Groups
Rehabilitation of degraded pastures in the Sahelian zone of Burkina Faso	*1,181*	*1,053*	*4*

B2 Project activities in addition to those generating Plan Vivo Certificates

The rehabilitated sites provide additional forage for livestock, like more specifically the herbaceous grass species Alysicarpus ovalifolius, Andropogon gayanus, etc. Well-fed livestock increases the selling price and thus revenues for the household. In addition some grass species growing on the rehabilitated sites allow some income generating activities like *Casia Tora* for the production of Sekko and *Eragrostis tremula* to make brooms.

Figure 1: Different grass species allow income generating activities

Part C: Plan Vivo Certificate issuance submission

C1 Contractual statement

This issuance is based on signed PES agreements with participants complying with all the minimum requirements stated in these agreements.

C2 Issuance request for projects where issuance is made on the basis of ongoing activities on land already managed by the project (e.g. avoided deforestation, calculated *ex-post*)

Table C1: Statement of tCO2 reductions available for issuance as Plan Vivo Certificates based on activity for reporting period 11/2015 – 10/2016

Area ID	Total area (ha)	Tech. Spec	tCO_2 available from previous periods	Total tCO_2 achieved this period*	% Buffer	No. of PVCs allocated to the buffer account	No. PVCs requested for issuance from saleable carbon	tCO_2 available for future issuances
PV-AGED-001	297	AGED	NA	604	20	121	483	0
PV-AGED-002	210	AGED	NA	427	20	85	342	0
PV-AGED-003	119	AGED	NA	242	20	48	194	0
PV-AGED-004	555	AGED	NA	1129	20	226	903	0
TOTAL	**1,181**		**NA**	**2,402**		**480**	**1,922**	**0**

*Number of tCO2 sequestered or avoided emission through participants' activities in previous reporting periods which have not yet been issued as PVCs

** Number of tCO2 sequestered or avoided emission through participants' activities this reporting period.

Table C2: Allocation of issuance request

Buyer name/ Unsold Stock	No. PVCs transacted	Registry ID (if available)	Tech spec
CO2logic	1,921	103000000001419	*Rehabilitation of degraded pastures in the Sahelian zone of Burkina Faso*
TOTAL	**1,922**		

C3 Data to support issuance request

Please refer to Annex 1

Part D: Sales of Plan Vivo Certificates

D1: Sales of Plan Vivo Certificates

Table D1: Sales of Plan Vivo Certificates

Vintage	Buyer	No of PVCs	Price per PVC ($)*	Total sale amount ($)*	Price to participants per PVC ($)*	% Sale price received by participants
2016	CO2logic	1,922				60%

*Pricing reported for internal monitoring purposes only. Pricing information will be removed from the final published document.

D2: Unsold stock available for sale

Table D2: Unsold stock of Plan Vivo Certificates

Vintage	No of PVCs	Price to participants (please indicate if this can be included in public version)
2016	0	

Part E: Monitoring results

E1: Ecosystem services monitoring

Monitoring results that support the request for new issuances are presented in the table below, whereas more detailed information can be found in annex 1. Monitoring targets were met for all activity areas in the period 2015/2016.

Table E1: Overview of performance indicators

Performance indicator	PV-AGED-001: DJIGO	PV-AGED-002: TOUKA KORNO	PV-AGED-003: TOUKA BAYEL	PV-AGED-004: SAMBONAYE
Density (# tree plants/ha) Min 260	431	435	316	417
Specific species diversity (not applicable in year 1)	8	7	7	9
TARGET MET	100%	100%	100%	100%

E2: Maintaining commitments

No participants have resigned from the project this year.

E3: Socioeconomic monitoring

The table below presents an overview of the socioeconomic indicators based on the first conducted assessment and will serve as a baseline. These socioeconomic indicators will be monitored each five years. New indicators related to land tenure, local job creation or community payouts that will be measured annually will be identified in the second annual report. As an example the measurement of the impact of the local land charters on land & tenure security (e.g. perception around tenure security of community members and resource access rights and the number of conflicts related to natural resource management.) The baseline for these new identified annual indicators will be retroactively determined in the following assessment for the villages included in the Plan Vivo project

Table E2: Overview of socioeconomic indicators

Socio-economic indicator	PV-AGED-001: DJIGO	PV-AGED-002: TOUKA KORNO	PV-AGED-003: TOUKA BAYEL	PV-AGED-004: SAMBONAYE
% of households with tin roof	0%	10%	6%	0%
% of households transhumance	23%	3%	6%	20%
% of households purchasing fodder	47%	20%	16%	40%
% of households under the poverty threshold[1]	43%	43%	45%	13%
Average size of the herd (cattle, sheep,	20	18	12	40

[1] The absolute threshold of monetary poverty is estimated at 153 530 FCFA per capita and per year (250 US$) Source: Rapport Enquête multisectorielle continue (EMC) 2014: Profil de pauvreté et d'inégalités (p.27)

goats and donkeys) per household				
Average yearly crop production per household (kg)	1229	630	621	851
Average perceived length of lean period with limited access to food per household (months)	3.9	4.9	3.6	3.0

More details about the socio-economic assessment can be found in annex 4.

E4: Environmental and biodiversity monitoring

The table below presents an overview of the environmental and biodiversity indicators. Annex 5 gives an overview of the herbaceous species present on the rehabilitated sites with their usage for the local communities. The baseline has been determined based on a study of INERA within the framework of the BKF/017 programme.

Table E3: Overview of environmental and biodiversity indicators

Environmental/biodiversity indicators	PV-AGED-001: DJIGO	PV-AGED-002: TOUKA KORNO	PV-AGED-003: TOUKA BAYEL	PV-AGED-004: SAMBONAYE	Baseline[2]
Number of tree species	11	12	8	12	2.0
Number of herbaceous species	12	8	12	14	4.5

More detailed information in annex 5.

Part F: Impacts

F1: Evidence of outcomes

There are various impacts associated with this Plan Vivo project in terms of ecosystem and livelihood improvements. The rehabilitation of degraded pastures through replanting by direct seeding of herbaceous and woody species affects the food and agricultural production. Local communities depend on livestock, a few crops and wild plants for survival. In daily life, these communities complement the diet through the collection of wild fruits and leaves for sauce, which are important supplements of vitamins and minerals to another wise monotonous diet (see Annex 5 for more details). The rehabilitated sites have also a positive impact on forage production. In addition, the usage of tree and herbaceous species as pharmacopoeia are important for the Sahelian communities, as most of the population relies almost entirely on traditional remedies for health care.

The *Acacia Tortilis Subsp. Radianna* is the main specie (see Annex 1), as it is a pioneer specie which easily regenerate from seed and contribute to the rehabilitation of pasture sites through nitrogen fixation in the soil.

[2] Baseline based on external study from other sites which are situated in other villages than the Plan Vivos included in the project. These figures are rather indicative figures. Source: INERA (2014) : Rapports techniques d'état d'avancement du Protocole d'accord entre l'INERA et le Projet Azawak : Suivi scientifique des sites de récupération de terres dégradées réalisées par le Projet BKF/017 « Azawak Ressources Pastorales » notamment dans les communes de Gorom Gorom, Markoye, Dori et Bani.

Figure 2: rehabilitated site of Touka-Korno with increased vegetation production in half-moons(direct seeding 2015)

Figure 3: importance of rehabilitated pastures for livestock in Sambonaye (direct seeding 2014)

Figure 4: Comparison between rehabilitated and non-rehabilitated pasture in Djigo

Part G: Payments for Ecosystem Services

G1: Summary of PES by year

No payments made so far.

Part H: Ongoing participation

H1: Recruitment

The village Sambonaye has been added to the project as fourth Plan Vivo and has signed the PES agreements. The technical specifications apply to this new Plan Vivo and has been confirmed by the Plan Vivo approved validator (see validation report).

H2: Project Potential

Within the framework of BKF/017 programme[3] mainly financed by Lux Dev between 2011 and 2016 AGED rehabilitated in close collaboration with the local communities more than 3000 hectares across 25 villages in the municipalities of Dori, Yalgo and Bani. The approximate number of households in these 25 communities are more than 30.000 individuals. The Plan Vivos have been developed through the introduction of local land charters focusing on sustainable land-use management of pastures. PES agreements have not been signed yet. From these 25 villages 4 communities are already included in the Plan Vivo project.

Table H1: Details of potential project participants

Wider engagement	
No community groups with plan vivos	21
Approximate number of individuals in these community groups (if known)	33,873

It is foreseen that Lux Dev will continue supporting the Plan Vivo project of Aged as the new Indicative Programme for Cooperation PIC III 2017 – 2021 foresees sustainable management of natural resources through innovative mechanism as PES.

H3: Community participation

The project has been developed through a participatory and inclusive approach. Through local meetings, all members of the community have been involved in the decision-making process in terms of site selection, speciies selection, benefit sharing and land use management. They decided which trees and grasses to seed and how the sites should be managed based on the local land charters. The sharing and awareness sessions helped local communities to understand the objectives of the rehabilitation of degraded pastures and to get involved in making decisions and to be responsible for the selection of species and management of these sites.

Different community meetings have been organized during the reporting period. A summary of what has been discussed during these meetings is presented in the table below.

[3] Financed through Indicative Programme for Cooperation II (201

Figure 5: Community meeting in the village of Touka-Bayel (PV-AGED-003-Touka-Bayel)

Table H2: Topics discussed during the community meetings

No	Topics	Content
1	Forest Inventory	Explanation for the realization of the forest inventory and link with PES contract and payments
2	Management of rehabilitated pasture sites	In all the four villages the surveillance committee has been put in place and is composed of 5 to 6 persons of which at least two women. The surveillance committee is responsible for the adoption of the rules defined in the local charters and the Plan Vivo. Several meetings have already been organized to discuss the application of the rules. No conflicts have been reported between pastoralists and farmers. Nevertheless livestock is increasing the pressure on pastures due to population growth and transhumance. Close surveillance of the rehabilitated sites will be important in the coming years.
3	Discussion of the impacts of rehabilitated sites	Appearance of new tree and herbaceous species; Return of wildlife because the recovered sites are a suitable habitat for them. In addition the half-moons retain enough water during the first years after their establishment and this allows the animals to drink on the pasture sites. This helps to reduce the number of animals at the boreholes.
4	Identification of the priorities of the village	After reminder of the PES mechanism and the benefit sharing mechanism foreseen in the project, each village or Plan Vivo identified its priorities. Among others were identified: (i) warehouse for storage of mil and cattle feed; (ii) borehole repair; (iii) income-generating activities for women groups; (iv) equipment for the surveillance committee.

An example (in French) of meeting minutes can be found in Annex 7.

Part I: Project operating costs

I1: Allocation of costs

All expenditure this year was met with funds coming from the BKF/017 programme not from

PVC sales.

Table I1: Allocation of costs

Expense	Narrative	Amount	Contribution from sale of PVCs	Contribution from other sources
Direct seeding		4635 €	-	BKF/017 financed by Lux Dev
Organization of inventories		450 €	-	BKF/017 financed by Lux Dev
Organization of community meetings		360 €	-	BKF/017 financed by Lux Dev
Support of local consultant (car rental, fuel, etc)		1427 €	-	BKF/017 financed by Lux Dev

Annexes

Annex 1. Monitoring results for issuance request

The chosen performance indicators to evaluate the state of the project intervention are tree density and specific species diversity. As shown in the technical specifications these indicators are directly linked to the delivery of climate services, i.e. CO_2 sequestration. The *Acacia Tortilis Subsp. Radianna* is a pioneer species in rehabilitated pasture sites, but has a lower biomass production than other species planted by direct seeding by the local communities, like *Balanites Aegyptiaca, Ziziphus Mauritiana, Acacia Nilotica, Acacia Sénégal and Acacia Seyal*. The indicator "specific species diversity (min. 5 tree plants per specie / ha)" will foster tree species other than the invasive pioneer specie *Acacia Tortilis*, and contribute to the CO_2 sequestration. According the technical specifications a minimum tree density of 300 tree plants/ha and specific species diversity of 3 (min. 5 tree-plants per specie / ha) will deliver after 30 years at least 61 tCO2e.

The indicators density and specific species diversity are monitored annually by AGED in close collaboration with the local communities. In order to cover the diversity of the rehabilitated site, the number of tree plants according specie and the number of half-moon shaped micro-basins will be counted along two diagonal transects on each site. As the reference number of half-moon shaped micro-basins per hectare is on average 300 per hectare, the tree density is calculated accordingly. This approach allows to take into account the variation across the different sites. The intention is to inventory at least 1% of the half-moon shaped micro-basins. In addition the number of half-moon shaped micro-basins without tree plants will be counted in order to evaluate the necessity of reseeding activities. The average of the different monitoring plots of all rehabilitated sites managed by the CVD are considered as the result of the performance indicators of the corresponding Plan Vivo for a specific monitoring year.

The monitoring activities have been realized between the 10th of October and 11th of November 2016 at the end of the rainy season. The table below presents the monitoring results for the 4 Plan Vivos included in the project. One can see that all 4 Plan Vivos reach the minimum requirements specified in the PES contracts of 260 tree plants per hectare and of 3 species per hectare.

Name of the village		DJIGO				TOUKA KORNO					TOUKA BAYEL				SAMBONAYE							
Name of the sites		Site 1 (103 ha)	Site 2 (57 ha)	Site 3 (137 ha)	Total	Site 1 (102 ha)	Site 2 (42 ha)	Site 3 (43 ha)	Site 4 (23 ha)	Total	Site 1 (42 ha)	Site 2 (55 ha)	Site 3 (22 ha)	Total	Site 1 (130 ha)	Site 2 (55 ha)	Site 3 (108 ha)	Site 4 (98 ha)	Site 5 (36 ha)	Site 6 (21 ha)	Site 7 (107 ha)	Total
Number of hectares		103	57	137	297	102	42	43	23	210	42	55	22	119	130	55	108	98	36	21	107	555
Number of half-moons with tree plants		225	158	173	556	270	133	154	130	687	101	145	64	310	335	143	203	216	161	102	168	1328
Number of half-moons without tree plants		136	91	74	301	85	45	61	71	262	95	87	74	256	132	77	66	134	63	31	103	606
Number of inventoried half-moons		361	249	247	857	355	178	215	201	949	196	232	138	566	467	220	269	350	224	133	271	1934
% inventoried half-moons compared to total		1,2%	1,5%	0,6%	1,0%	1,2%	1,4%	1,7%	2,9%	1,5%	1,6%	1,4%	2,1%	1,6%	1,2%	1,3%	0,8%	1,2%	2,1%	2,1%	0,8%	1,2%
Fraction of half-moons without tree plants		38%	37%	30%	35%	24%	25%	28%	35%	28%	48%	38%	54%	45%	28%	35%	25%	38%	28%	23%	38%	31%
Total number of inventoried tree plants		469	404	357	1230	497	353	324	201	1375	169	280	147	596	515	268	515	380	357	311	340	2686
Density of tree plants	Number of tree plants per hectare	**390 #/ha**	**487 #/ha**	**434 #/ha**	**431 #/ha**	**420 #/ha**	**595 #/ha**	**452 #/ha**	**300 #/ha**	**435 #/ha**	**259 #/ha**	**362 #/ha**	**320 #/ha**	**316 #/ha**	**331 #/ha**	**365 #/ha**	**574 #/ha**	**326 #/ha**	**478 #/ha**	**702 #/ha**	**376 #/ha**	**417 #/ha**
Specific diversity of tree plants	Acacia nilotica	42	104	45	67 #/ha	42	16	15	0	23 #/ha	17	44	10	38 #/ha	33	12	28	35	16	112	62	46 #/ha
	Acacia raddiana	280	192	211	239 #/ha	318	183	145	73	227 #/ha	127	123	95	183 #/ha	324	204	278	226	149	105	203	231 #/ha
	Acacia senegal	11	15	8	12 #/ha	12	1	7		6 #/ha	11	3	1	8 #/ha	6		20	4	2	5	4	6 #/ha
	Acacia seyel	15	16	17	17 #/ha	1		12	2	5 #/ha	7	1	5	7 #/ha	14	2		7	7	13	6	8 #/ha
	Balanites aegyptiaca	39	20	19	27 #/ha	53	30	38	55	56 #/ha	4	44	18	35 #/ha	71	14	57	5	37	23	16	35 #/ha
	Bauhinia rufescens				0 #/ha					0 #/ha				0 #/ha								0 #/ha
	Calotropis procera	6	2		3 #/ha		5			2 #/ha		1		1 #/ha	5		6	13	3	4	17	7 #/ha
	Combretum glutinosum				0 #/ha					0 #/ha				0 #/ha							1	0 #/ha
	Faidherbia albida	16	27	5	17 #/ha	6	5		8	6 #/ha				0 #/ha	5	4	10	15	1	7	1	7 #/ha
	Leptadenia hastata	27	5	31	22 #/ha	32	79	45	23	57 #/ha		22	10	17 #/ha	33	22	75	64	61	12	15	44 #/ha
	Maerua crassifolia				0 #/ha	2				1 #/ha				0 #/ha	6							1 #/ha
	Piliostigma reticulatum	2			1 #/ha	2				1 #/ha				0 #/ha								0 #/ha
	Prosopis sp	1			0 #/ha	1	1			1 #/ha				0 #/ha		1				17		3 #/ha
	Tamarindus indica			2	1 #/ha					0 #/ha				0 #/ha								0 #/ha
	Zizyphus mauritiana	30	23	19	25 #/ha	28	33	62	40	52 #/ha	3	42	8	28 #/ha	18	9	41	11	81	13	15	29 #/ha
	Total:	469	404	357		**497**	**353**	**324**	**201**		169	280	147		**515**	**268**	**515**	**380**	**357**	**311**	**340**	
	Nombre minimal	7	5	5		6	3	4	4		4	4	3		8	4	5	6	4	3	5	
	Number of species (>5 #/ha)	**8**	**8**	**8**	**8**	**7**	**7**	**7**	**5**	**7**	**5**	**5**	**6**	**7**	**6**	**6**	**8**	**7**	**6**	**10**	**7**	**9**

The carbon uptake for the restoration of degraded pastures is estimated to be 61 tCO_2/ha for a crediting period of 30 years with a risk buffer of 20%. The total number of hectares that adhered to the performance indicators defined in the PES agreements is 1,181 ha. Based on these figures:

- Allocation to Plan Vivo buffer (tCO_2): (61 tCO_2/ha * 1,181 ha * 0.2)/30 = 480 tCO_2
- Saleable emissions reductions achieved (tCO_2): (61 tCO_2/ha * 1,181 ha * 0.8)/30 = 1,921 tCO_2

Annex 2. Ongoing monitoring results for all participants

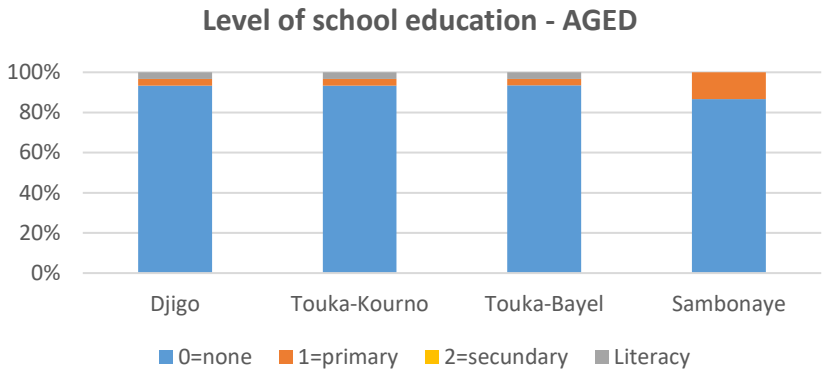
Not applicable

Annex 3. Reallocation of commitments

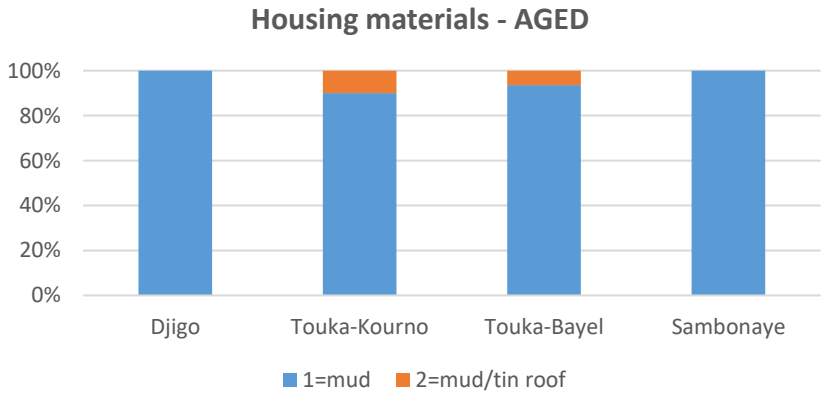
Not applicable

Annex 4. Socioeconomic monitoring results

A. Profile of the household

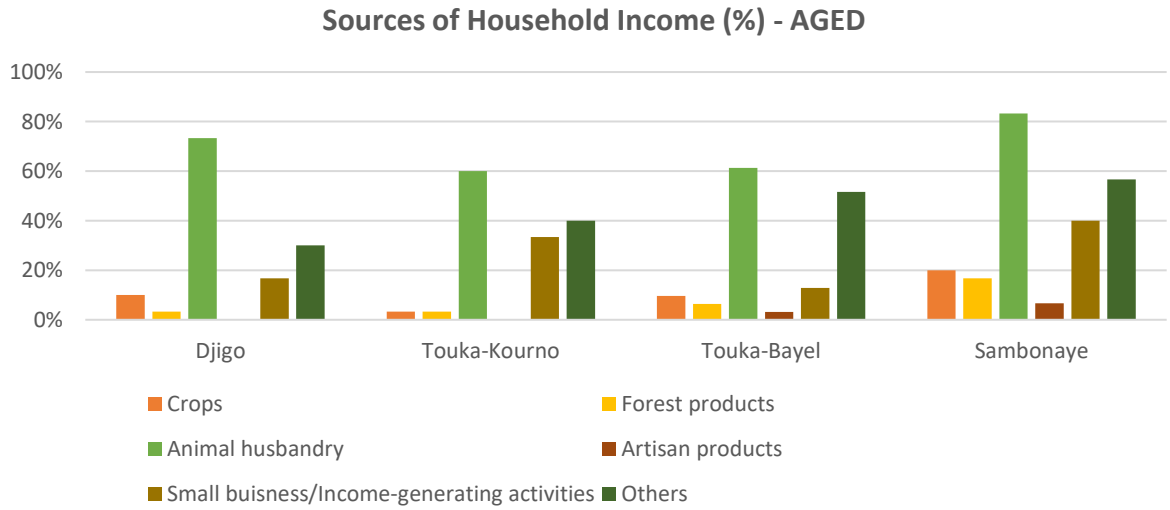


In most cases the head of the household doesn't have any education. In the village of Sambonaye 13% of the head of the household had only primary education, which is till much lower than the average adult literacy rate of Burkina Faso of 38% in 2015[4].



In the villages of Djigo and Sambonaye there are no houses with a tin roof whereas in Touka-Korno and Touka-Bayel 10% and 6%.

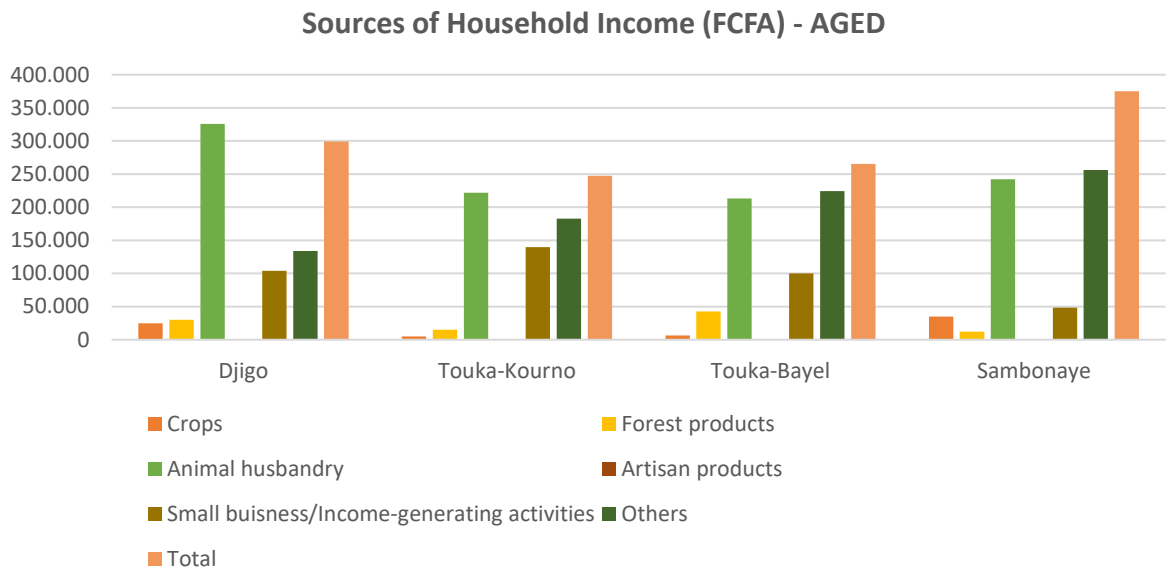
B. Sources of household income



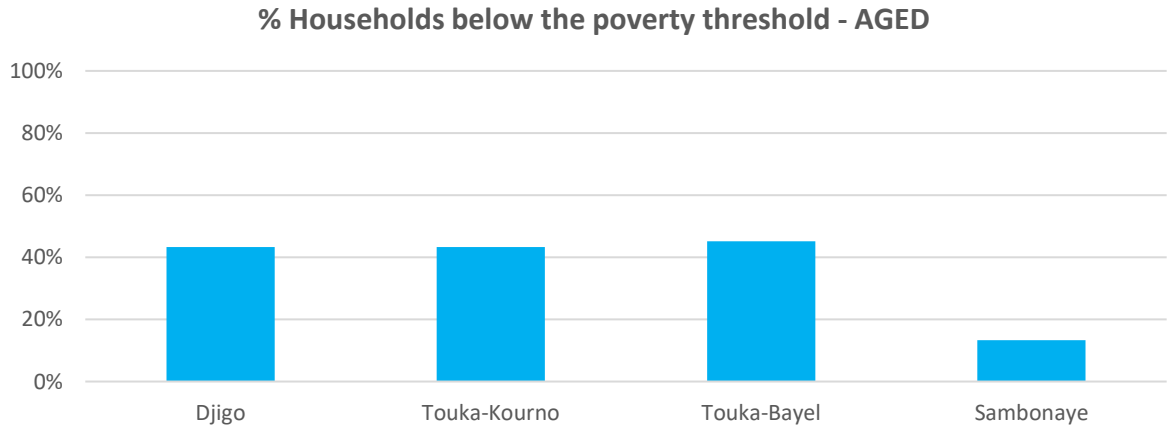
More than 50% of the households have animal breeding as source of income. Other revenue sources

[4] http://data.worldbank.org/indicator/SE.ADT.LITR.ZS?locations=BF

include masonry, artisanal gold mining and “maraboutage” (esoteric and magic practices). Note that small business is another important source of revenue and crops rather limited.



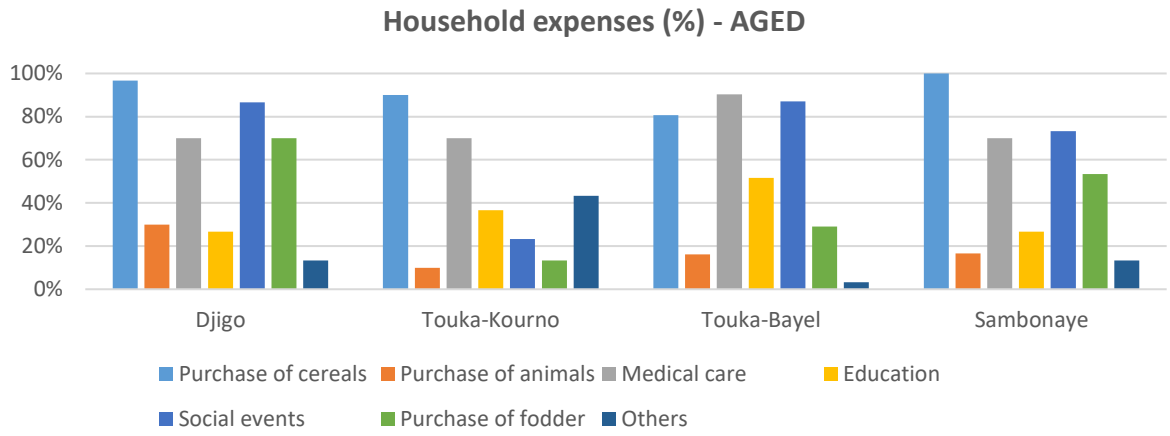
The total average household income is comparable between the four villages. It appears that the average income is the highest in Sambonaye followed by Djigo. In Sambonaye almost half of the households do have important revenues from artisanal gold mining.



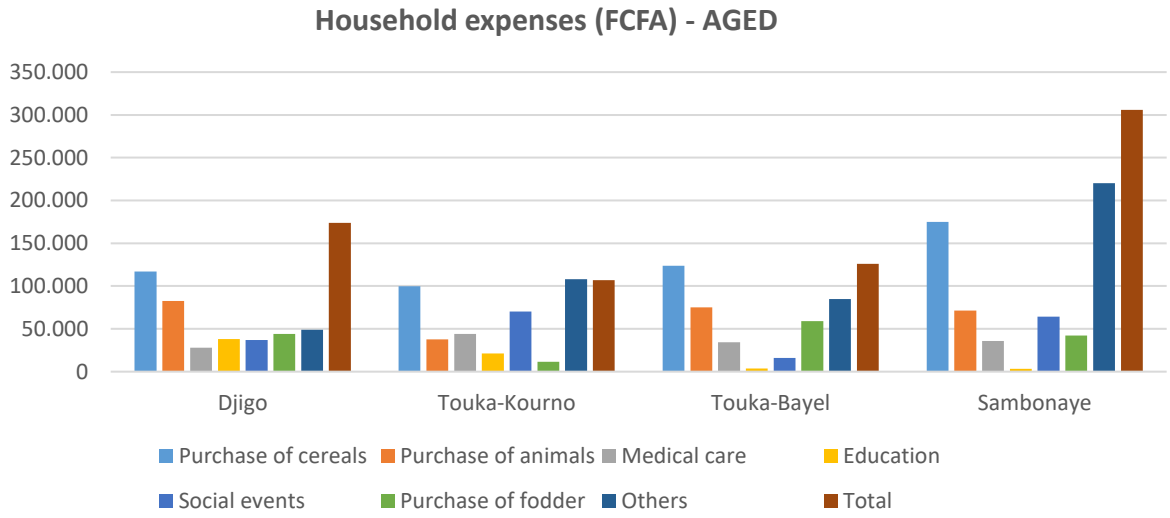
The absolute threshold of monetary poverty is estimated at 153 530 FCFA per capita and per year (250 US$)[5]. The figure above presents the % of households that live below the poverty threshold for the different villages. It seems that the villages Djigo, Touka-Kourno and Touka-Bayel have a value around the 40%, whereas only 13% of the households of the village of Sambonaye live below the poverty threshold. This observation might be related to the artisanal gold mining activities.

C. Household expenses

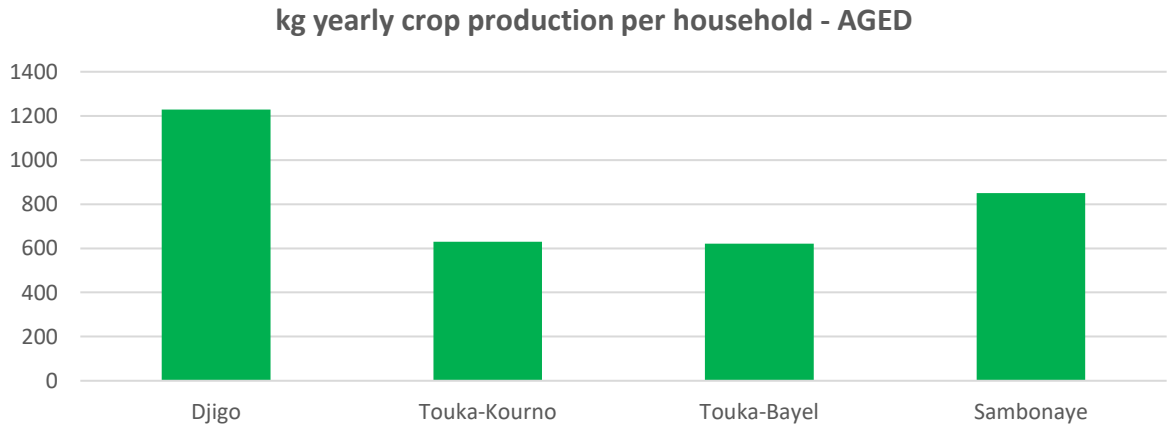
[5] Rapport Enquête multisectorielle continue (EMC) 2014: Profil de pauvreté et d’inégalités (p.27)



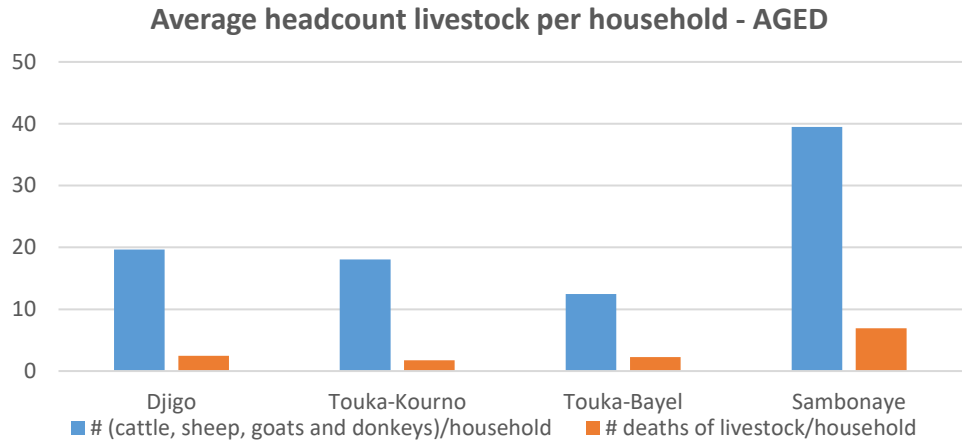
More than 80% of the households spend their income to the purchase of cereals and other food items. Between 70% and 90% of the households spend money for medical care, but also for social events (e.g. funerals, etc) with the exception for Touka-Korno. The figure below shows that the total average expenditure is the highest for the village of Sambonaye in accordance with the highest average income per household.



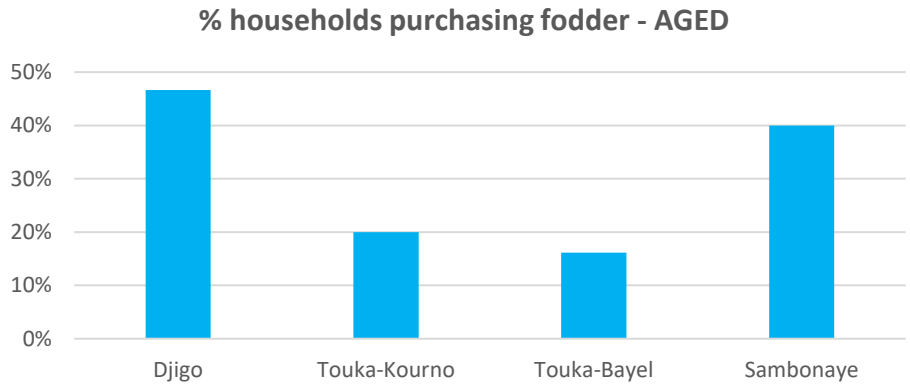
D. Crop-livestock production per household



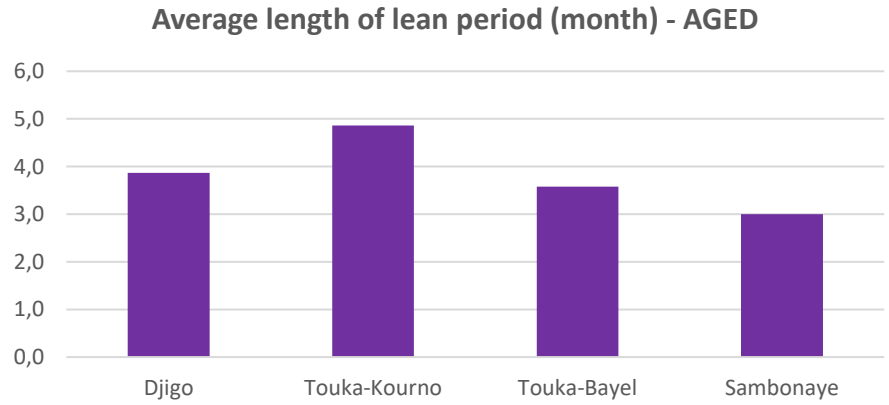
The yearly crop production per household and per year is much higher in Djigo compared to the village Touka-Bayel and Touko-Korno. In accordance with the income per household the average size of livestock is much higher in Sambonaye compared to the other villages.



The figure below shows that almost half of the households in Djigo and Sambonaye purchase fodder for their cattle. For Sambonaye this can be explained by their higher number of livestock compared to the other villages.

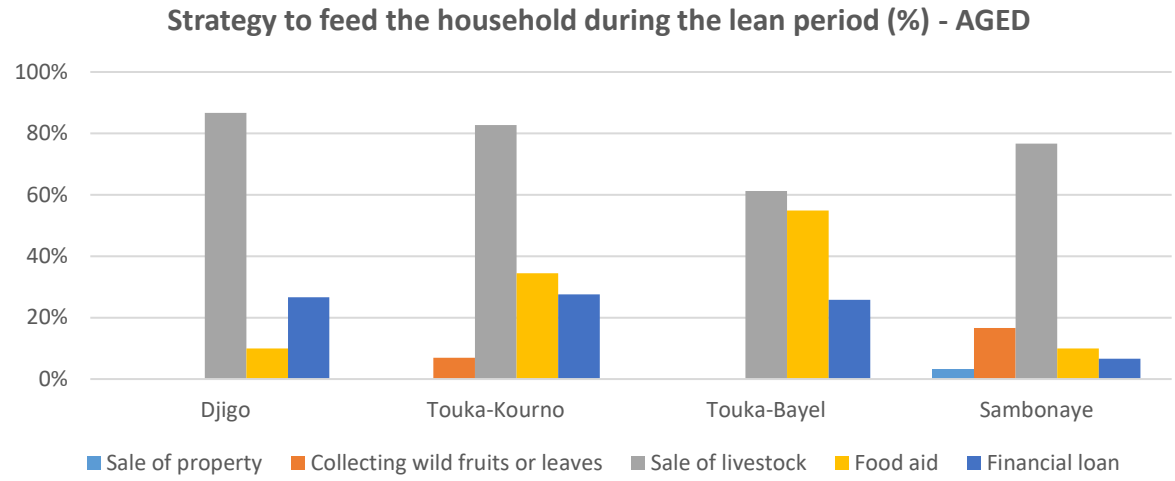


E. Household food supply

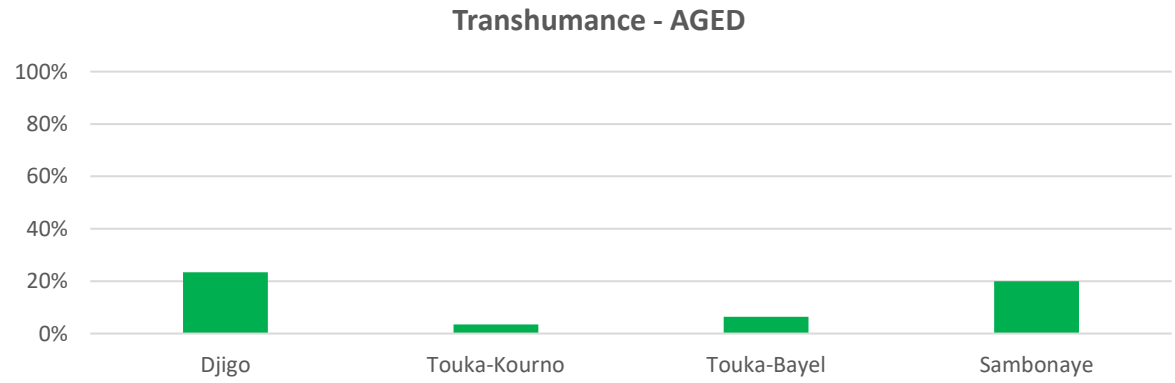


The average length of the lean period (period between end of food stock in household and start of harvesting) varies between 3 and 5 months. In accordance with the source of income and the number of households living below the poverty line, the households of the village of Sambonaye experience a shorter length of lean period compared to the other villages. The main approach to feed the members of the household during the lean season is selling livestock. This shows that livestock are an

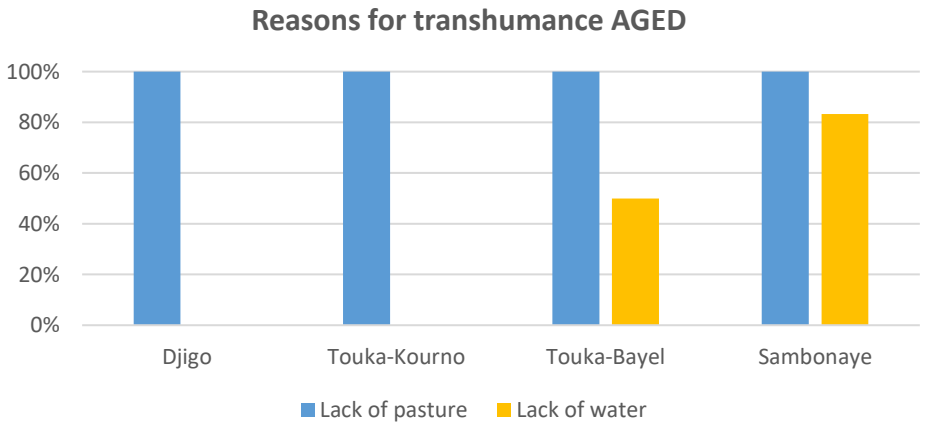
important survival mechanism during the lean period. Other ways to cover the lean season is food, financial loan and the collection of wild fruits and leaves.



F. Impact of rehabilitated sites



The figure above shows that only 20% or less of the pastoralists practice transhumance. The figure below shows that when transhumance or migration is practiced, it is in search for fodder for the cattle and water.



Annex 5. Conservation and monitoring results

Overview of the environmental and biodiversity monitoring results

Name of the village		PV-AGED-001: DJIGO				PV-AGED-002: TOUKA KORNO					PV-AGED-003: TOUKA BAYEL				PV-AGED-004: SAMBONAYE							
Name of the sites		Site 1 (103 ha)	Site 2 (57 ha)	Site 3 (137 ha)	**Total**	Site 1 (102 ha)	Site 2 (42 ha)	Site 3 (43 ha)	Site 4 (23 ha)	**Total**	Site 1 (42 ha)	Site 2 (55 ha)	Site 3 (22 ha)	**Total**	Site 1 (130 ha)	Site 2 (55 ha)	Site 3 (108 ha)	Site 4 (98 ha)	Site 5 (36 ha)	Site 6 (21 ha)	Site 7 (107 ha)	Total
Number of hectares		103	57	137	297	102	42	43	23	210	42	55	22	119	130	55	108	98	36	21	107	555
Tree diversity	Acacia nilotica	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	Acacia raddiana	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	Acacia senegal	x	x	x	x	x	x	x		x	x	x	x	x	x		x	x	x	x	x	x
	Acacia seyel	x	x	x	x	x		x	x	x	x	x	x	x	x	x		x	x	x	x	x
	Balanites aegyptiaca	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	Bauhinia rufescens																					
	Calotropis procera	x	x		x		x			x		x		x	x		x	x	x	x	x	x
	Combretum glutinosum																				x	x
	Faidherbia albida	x	x	x	x	x	x		x	x					x	x	x	x	x	x	x	x
	Leptadenia hastata	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x
	Maerua crassifolia					x				x					x							x
	Piliostigma reticulatum	x			x	x				x												
	Prosopis sp	x			x	x	x			x						x				x		x
	Tamarindus indica			x																		
	Zizyphus mauritiana	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	Number of species	**11**	**9**	**9**	**11**	**11**	**9**	**7**	**7**	**12**	**6**	**8**	**7**	**8**	**10**	**8**	**8**	**9**	**9**	**10**	**10**	**12**
Herbaceous diversity	Alysicarpus ovalifolius	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			x
	Boreria diffusa																		x			x
	Cassia occidentalis	x	x	x	x		x	x	x	x	x	x	x	x								
	Cassia tora	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x
	Cenchrus biflorus	x	x	x	x	x	x			x	x	x	x	x	x	x	x	x				x
	Corchorus tridens														x	x	x	x	x			x
	Corchorus olitorius	x	x	x	x	x	x			x		x	x	x		x		x	x			x
	Dactyloctenium aegyptium														x		x					x
	Eragrostis tremula	x	x	x	x						x	x	x	x	x		x					x
	Leptadenia																				x	x
	Mollugo nudicaulis	x	x	x	x	x	x	x		x	x	x	x	x	x						x	x
	Panicum laetum	x	x	x	x	x		x		x	x	x	x	x	x	x	x				x	x
	Schoenefeldia gracilis	x	x	x	x						x	x	x	x	x		x				x	x
	Setariapallidefusca	x	x	x	x						x	x	x	x								
	Tribulis terrestris	x	x	x	x	x				x	x	x	x	x	x	x		x		x	x	x
	Zornia glochidiata	x	x	x	x						x	x	x	x							x	x
	Nombre d'espèce (#)	**12**	**12**	**12**	**12**	**7**	**6**	**5**	**3**	**8**	**11**	**12**	**12**	**12**	**10**	**7**	**8**	**6**	**5**	**2**	**6**	**14**

Overview of herbaceous species present of the rehabilitated sites

Herbaceous specie	Picture	Main characteristics
Alysicarpus ovalifolius		- Annual specie; - Protein-rich fodder valuable for all types of livestock; - Available during the rainy season and in early stages of drought periods; - Used as bush straw or bush hay in sheep diets
Cassia tora		- The plant and seeds are edible; - Leaves can be cooked as a vegetable; - The roasted seeds are a substitute for coffee; - Used to make tea; - Natural pesticide; - The seeds and leaves are also used to treat skin disease; - The seeds can be utilized as a laxative; - Whereas the rods are used for the construction of roofs, doors and fences and are also used as fuel.
Cenchrus biflorus		- Food consumption: good help for food security; - Used to foster rural development; - Used to support sustainable land management.

Corchorus tridens		- Food consumption: vegetable, soup and sauce; - Used for medecine
Dactyloctenium aegyptium		- Forage plant; - Food consumption in period of scarcity; - The seeds can be fed to poultry or used to make alcoholic beverages; - Used for medicine; - May be used as a fish poison.
Eragrostis tremula		- Livestock fodder; - Famine food.

Leptadenia		- Used for medicine for men and livestock: (i) diarrhoea; (ii) vermifuge; and (iii) fever.
Panicum laetum		- Also called “wild fonio”; - Used in the rehabilitation of degraded pastures green pastures - Food consumption; - Livestock fodder.
Schoenefeldia gracilis		- Livestock fodder; - Medicine; - Construction.

Setariapallidefusca		- Common weed; - Food for men and livestock; - Important role in stabilising bare soil to protect it from erosion.
Tribulis terrestris		- Used for medicine: (i) arterial pressure; (ii) blood circulation; (iii) anti-stress; and (iv) sexual virtue.
Zornia glochidiata		- Annual plant; - Food consumption: vegetable, sauce; - Soil fixation, soil binder; - Livestock forage; - Medicine: Laxative.

Annex 6. Impacts

These are described in the main report and are mainly focus on the advantages of the diversity of tree and herbaceous species for the local communities.

Annex 7. Community meeting records

Example (in French) of Community meeting records for the Plan Vivo PV-AGED-004 Sambonaye.

Région des : SAHEL
Province du : Séno
Commune de : Dori
Villages de : Sambonaye (7 sites)

CONTRE RENDU DE L'ASSEMBLEE GENERAL DU VILLAGE DE SAMBONAYE

L'an deux mil seize et le 18 octobre 2016, s'est tenue dans le village de Sambonaye, une Assemblée Générale Villageoises de sensibilisations et de mobilisation communautaires sur les activités du Projet Plan Vivo. Cela a permis d'avoir plusieurs informations sur le village et sur l'impact et la gestion des sites récupérés.

Pour ce qui est de l'évolue de la population du village, il est ressorti que la population est en forte augmentation et cela est dû à la forte natalité, à la baisse de la mortalité infantile avec l'amélioration des conditions sanitaire et l'installation définitive des transhumants.
Les rendements agricoles dans le village est moyen et cela s'il n'y a pas des attaques des oiseaux et l'insuffisance des pluies.
Les populations pensent que les pâturages pourraient suffire aux animaux du village s'il n'y avait pas une forte pression du cheptel de transhumants. Cependant, les animaux sont bien nourrit et rapportent beaucoup à la vente et cela améliore leurs conditions de vie.

Il ressort des entretiens que les sites récupérés ont un impact sur l'accès à l'eau car en saison pluvieuse, les animaux pâturent dans les sites et en même temps ils s'abreuvent grâce à l'eau que stockent les demi-lunes.

La présence des sites a améliorée l'abondance de la végétation avec une augmentation de la diversité végétale et faunique. On a le retour de Ziziphus mauritiana, des lièvres, des perdrix et des pintades sauvages.

Au regard des avantages, les populations réaffirment leur engagement sans faille à tout mettre en œuvre pour la réussite du projet Plan Vivo. Un comité de surveillance et de supervision a été mis en place composé de 05 personnes dont deux(02) femmes pour assurer la bonne gestion des sites en fonction des règles de la charte foncière locale. Sept (07) réunions ont été organisées par le comité de gestion.

Liste de présence

1

Liste de Presence AG de Sambonaye.

1)	Bourcima	Amadou	Harandé
2)	Naïga	Hamadou	Hamidou
3)	Ly	Moussa	Yakouba
4)	Diallo	Mamoudou	Amadou
5)	Barry	Bourcima	Moussa
6)	Diallo	Mamoudou	Amadou
7)	Naïga	Amadou	Hamidou
8)	Diallo	Hamadou	Djibrilla
9)	Diarra	Hamadou	Abdoulaye
10)	Diallo	Bourcima	Mamoudou
11)	"	Amadou	Kadri
12)	"	Boubacar	Djibrilla
13)	Dicko	Oumarou	Bourcima
14)	Diallo	Hamidou	Garba
15)	Dicko	Bourcima	Kadri
16)	Diallo	Souleymane	Oumarou
17)	"	Hamidou	Abdoulaye
18)	Dicko	Abou	Hamma
19)	"	Moussa	Hamma
20)	Naïgo	Moussa	Hama CVD

21) Dicko Amadou Boureima
22) Diallo Amadou Ousmana
23) Dicko Hamafi Hama
24) Diana Aissa Ousmana
25) Dicko Hawa Hama
26) Diallo Hadjatou Amadou
27) Dicko Hadjatou Hamoudou
28) Dicko Hadjatou Hama
29) Maiga Amatou Houdeichi'
30) Dicko Aissa Hama
31) Dicko Mariama Issa
32) Maiga Fadima Ama
33) Diallo Fatimata Hamoudou
34) Dicko Ramata Issiaka
35) Dicko Djeneba Hama
36) Maiga Fatimata Ousmana
37) Mariama Hama
38) Dicko D Hadjatou Hama
39) Diallo Ramata Gorba Goula Yigata
40) Diallo Hadjatou Hama
41) Dicko Fatimata Adama
42) Ly Fatimata Amadou

43) Hadjatou Amadou
44) Meïjia Mariama Hama
45) Diarra Hadjatou Hassane
46) Rouki Hama
47) Diallo Ali Hama.

QUELQUES PHOTOS

Balanites aegyptiaca

Présence d'animaux sur un site

Annex 8. Household survey

Survey – see document “Azawak Fiches F1 enquetes plan vivo_Ménage v1.0 »

Analysis of the household survey – see document “Résultats socio-économiques 2016 v6”