2015 – 2016 Plan Vivo Annual Report

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

Submitted by REACH Italia

Prepared by Herman Noppen, CO2logic

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Content

Summary

Project overview	
Reporting period	1st November 2015 – 30th October 2016
Geographical areas	Villages Bossey Etage, Peteldaye, Tadabat, and Gagari I
Technical specifications in use	Rehabilitation and sustainable management by REACH Italia 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 (or individuals) in these community groups	0	438	438
Area under management (ha) where PES agreements are in place	0	376	376
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	153	153
Saleable emissions reductions achieved (tCO_2)	0	612	612
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)	**612**
Plan Vivo Certificates available for future issuance (REDD only)	**0**
Total PVCs issued (including this report)	**612**

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.
- *Jan 2016*: 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.

61 hectares have been replanted by direct seeding before the rainy season out of the 376 ha in 2015 with positive results on the ecosystems: (i) Peteldaye 24 ha; (ii) Gagara I 16 ha; and (iii) Tadabat 21 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 REACH Italia will assist the communities with this activity.
III. REACH Italia need to sell its Plan Vivo certificates to generate the necessary income. Lux Dev will purchase already some certificates from REACH Italia and CO2logic will assist them in monetising the remaining part of 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	*376*		*4*

B2 Project activities in addition to those generating Plan Vivo Certificates

Some herbaceous 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-Reach	161	Reach Italia	NA	327	20	65	262	0

Italia-001								
PV-Reach Italia-002	79	Reach Italia	NA	161	20	32	129	0
PV-Reach Italia-003	42	Reach Italia	NA	85	20	17	68	0
PV-Reach Italia-004	94	Reach Italia	NA	191	20	38	153	0
TOTAL	**376**		**NA**	**765**		**153**	**612**	**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
Lux Dev	500		*Rehabilitation of degraded pastures in the Sahelian zone of Burkina Faso*
CO2logic	112	103000000001419	*Rehabilitation of degraded pastures in the Sahelian zone of Burkina Faso*
TOTAL	**612**		

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	Lux Dev	500				60%
2016	CO2logic	112				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-REACH Italia-001: BOSSEY ETAGE	PV-REACH Italia-002: PETELDAYE	PV-REACH Italia-003: TADABAT	PV-REACH Italia-004: GAGARA I
Density (# tree plants/ha) Min 260	461	885	709	641
Specific species diversity (not applicable in year 1)	7	6	6	7
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-REACH Italia-001: BOSSEY ETAGE	PV-REACH Italia-002: PETELDAYE	PV-REACH Italia-003: TADABAT	PV-REACH Italia-004: GAGARA I
% of households with tin roof	0%	0%	0%	0%
% of households transhumance	42%	97%	63%	67%
% of households purchasing fodder	10%	0%	37%	30%
% of households under the poverty threshold[1]	61%	93%	80%	93%
Average size of the herd (cattle, sheep, goats and donkeys) per household	32	9	4	17
Average yearly crop production per household (kg)	608	559	483	674
Average perceived length of lean period with limited access to food per household (months)	4.5	Not available	3.8	3.4

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

E4: Environmental and biodiversity monitoring

[1] The absolute threshold of monetary poverty is estimated at 153 530 FCFA per capita and per year (250 US$) Source: Rapport

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-REACH Italia-001: BOSSEY ETAGE	PV-REACH Italia-002: PETELDAYE	PV-REACH Italia-003: TADABAT	PV-REACH Italia-004: GAGARA I	Baseline[2]
Number of tree species	7	7	9	8	2.0
Number of herbaceous species	15	3	5	9	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.

Figure 2: rehabilitated site of Tadabat (direct seeding 2014)

[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 3: example of half-moon with more than 7 tree plants per half-moon in Bossey etage (direct seeding 2014)

Figure 4: Comparison between rehabilitated and non-rehabilitated site in Bossey Etage

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 Gagara I 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 Reach Italia rehabilitated in close collaboration with the local communities more than 4000 hectares across 46 villages in the municipalities of Markoye, Gorom-Gorom, Djibo and Arbinda. The approximate number of households in these 46 communities are more

[3] Financed through Indicative Programme for Cooperation II (2011 – 2016) between Luxemburg and Bukina Faso

than 50.000 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.

Table H1: Details of potential project participants

Wider engagement	
No community groups with plan vivos	46
Approximate number of individuals in these community groups (if known)	58.117

It is foreseen that Lux Dev will continue supporting the Plan Vivo project of Reach Italia 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, specious 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.

Figure 5: Community meeting in the village of Gagara I (PV-REACH Italia-004-Gagara I)

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	Report of the surveillance committee on the adoption the rules defined in the local charters and Plan Vivo. Some issues were discussed concerning the application of the rules: breach of the rules by transhumant pastoralist and the collection of hay for commercial purposes by the population of the riparian villages. Different meetings have been organized to solve these issues. Women and young people are involved in the surveillance team as they are more sedentary than the men.
3	Discussion of	Appearance of new tree and herbaceous species; Return of

	the impacts of rehabilitated sites	wildlife because the recovered sites are a suitable habitat for them
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) water access; (ii) food security; (iii) income-generating activities for women groups; (iv) income-generating activities for the young people.

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		915 €	-	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 REACH Italia 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 and 27th of October 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		PV-REACH Italia-001: BOSSEY ETAGE					PV-REACH Italia-002: PETELDAYE			PV-REACH Italia-003: TADABAT				PV-REACH Italia-004: GAGARA I			
Name of the sites		Site 1 (100 ha)	Site 2 (43 ha)	Site 3 (8 ha)	Site 4 (10 ha)	**Total**	Site 1 (49 ha)	Site 2 (30 ha)	**Total**	Site 1 (24 ha)	Site 2 (13 ha)	Site 3 (5 ha)	**Total**	Site 1 (10 ha)	Site 2 (24 ha)	Site 3 (60 ha)	**Total**
Number of hectares		**100**	**43**	**8**	**10**	**161**	49	30	79	24	13	5	42	10	24	60	94
Number of half-moons with tree plants		92	100	60	80	332	81	80	161	106	67	34	207	97	216	238	551
Number of half-moons without tree plants		11	10	10	16	47	11	12	23	29	14	15	58	22	55	117	194
Number of inventoried half-moons		103	110	70	96	379	92	92	184	135	81	49	265	119	271	355	745
% inventoried half-moons compared to total		0,3%	0,9%	2,9%	3,2%	0,8%	0,6%	1,0%	0,8%	1,9%	2,1%	3,3%	2,1%	4,0%	3,8%	2,0%	2,6%
Fraction of half-moons without tree plants		11%	9%	14%	17%	12%	12%	13%	13%	21%	17%	31%	22%	18%	20%	33%	26%
Total number of inventoried tree plants		270	121	122	70	583	286	257	543	241	335	50	626	337	574	680	1591
Density of tree plants	**Number of tree plants per hectare**	**786 #/ha**	**330 #/ha**	**523 #/ha**	**219 #/ha**	**461 #/ha**	**933 #/ha**	**838 #/ha**	**885 #/ha**	**536 #/ha**	**1241 #/ha**	**306 #/ha**	**709 #/ha**	**850 #/ha**	**635 #/ha**	**575 #/ha**	**641 #/ha**
Specific diversity of tree plants	Acacia nilotica		14	15	4	26 #/ha	27		44 #/ha		55	1	63 #/ha	13	38	48	40 #/ha
	Acacia raddiana	243	100	10	28	302 #/ha	157	128	465 #/ha	228	178	40	505 #/ha	301	467	534	524 #/ha
	Acacia senegal				7	6 #/ha		1	2 #/ha		2	7	10 #/ha	1	4	16	8 #/ha
	Acacia seyel					0 #/ha		26	42 #/ha	2		1	3 #/ha	2	7	14	9 #/ha
	Balanites aegyptiaca	27	7	60	20	90 #/ha	34	3	60 #/ha		58		66 #/ha	11	28	38	31 #/ha
	Bauhinia rufescens					0 #/ha		81	132 #/ha	5			6 #/ha				0 #/ha
	Calotropis procera			20	4	19 #/ha			0 #/ha		1	1	2 #/ha		2		1 #/ha
	Faidherbia albida					0 #/ha			0 #/ha	2			2 #/ha				0 #/ha
	Leptadenia hastata			10		8 #/ha			0 #/ha				0 #/ha	1	3	12	6 #/ha
	Zizyphus mauritiana		0	7	7	11 #/ha	68	18	140 #/ha	4	41		51 #/ha	8	25	18	21 #/ha
	Total:	270	121	122	**70**		**286**	**257**		241	335	50		**337**	**574**	**680**	
	Nombre minimal	2	2	2	2		2	2		3	2	1		2	**5**	**6**	
	Number of species (>5 #/ha)	2	3	6	6	**7**	4	5	**6**	**3**	**5**	**5**	**6**	**5**	**5**	**7**	**7**

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 376 ha. Based on these figures:

- Allocation to Plan Vivo buffer (tCO_2): (61 tCO_2/ha * 376 ha * 0,2)/30 = 153 tCO_2
- Saleable emissions reductions achieved (tCO_2): (61 tCO_2/ha * 376 ha * 0,8)/30 = 612 tCO_2

Annex 2. Ongoing monitoring results for all participants

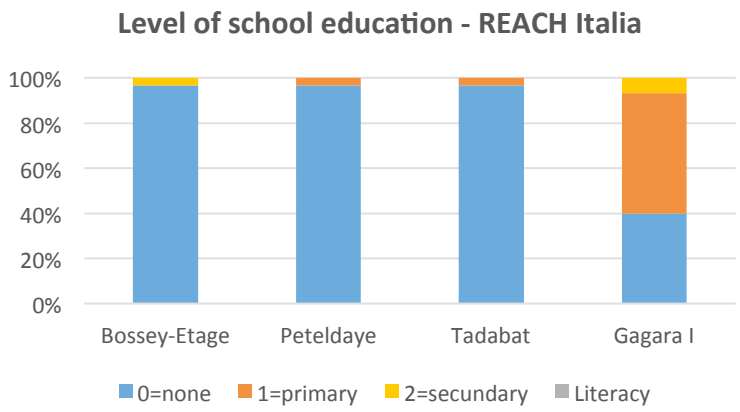
Not applicable

Annex 3. Reallocation of commitments

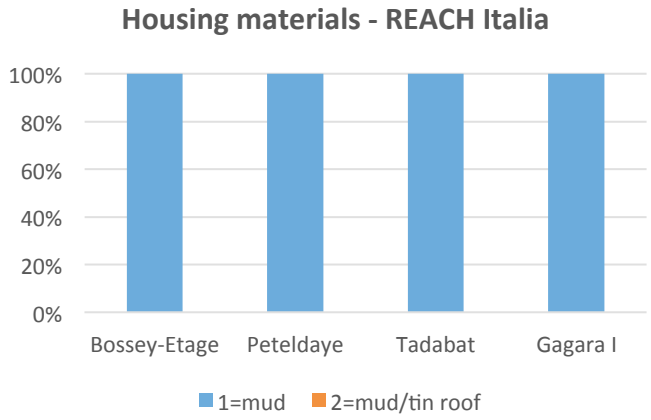
Not applicable

Annex 4. Socioeconomic monitoring results

A. Profile of the household

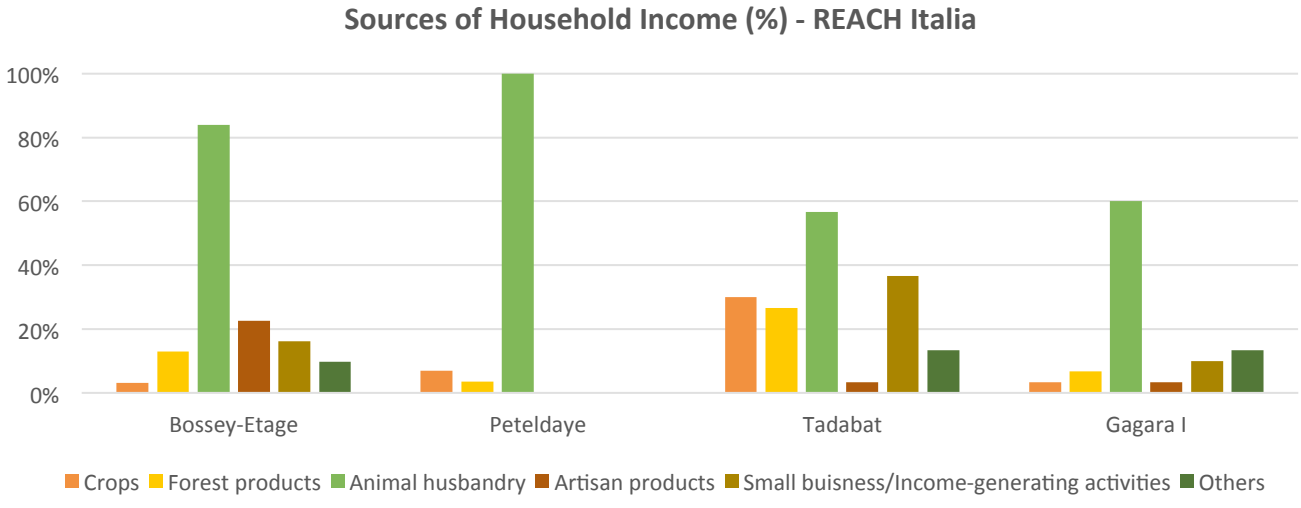


In most cases the head of the household doesn't have any education, except for Gagara I. As the difference with the other villages is high, this needs to be reassessed during the following household survey.

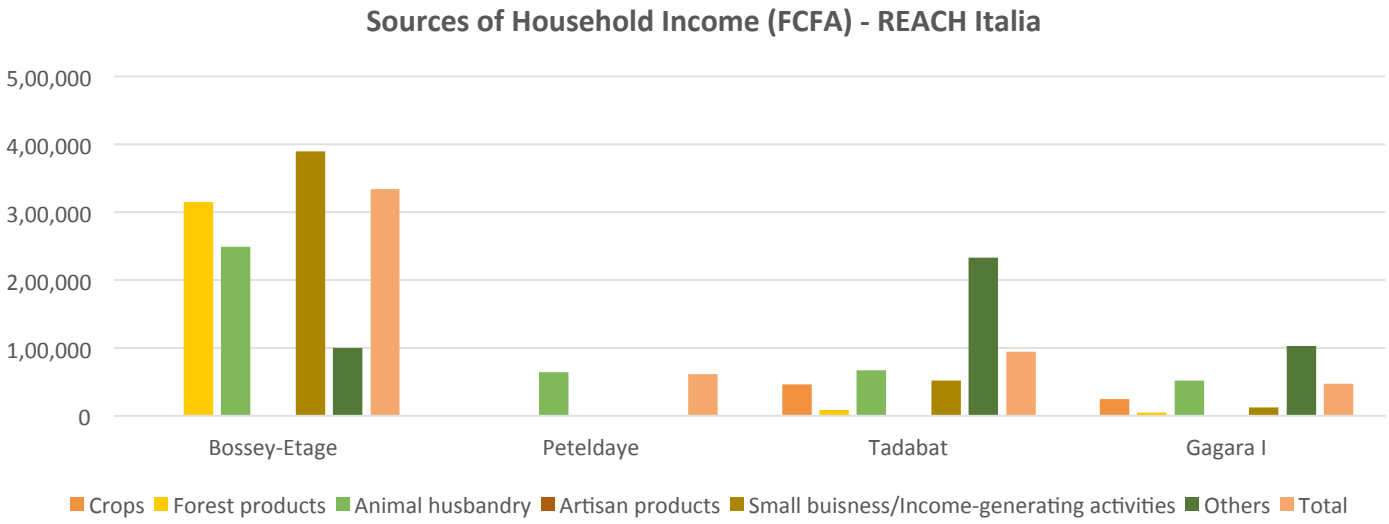


There are on the contrary to other villages in the province of Oudalan no houses with a tin roof.

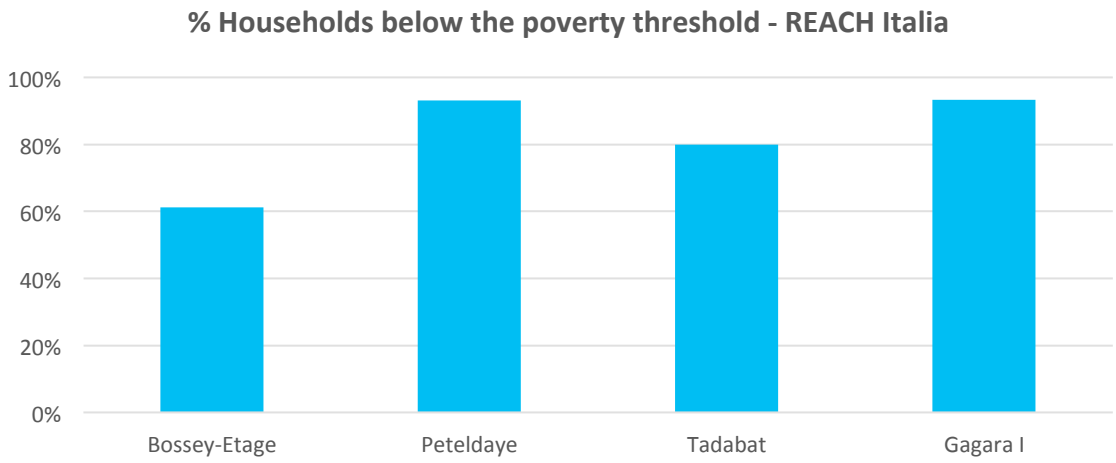
B. Sources of household income



More than 50% of the households have animal breeding as source of income. Other revenue sources include masonry, artisanal gold mining and “maraboutage” (esoteric and magic practices). Note that small trade is another important source of revenue.



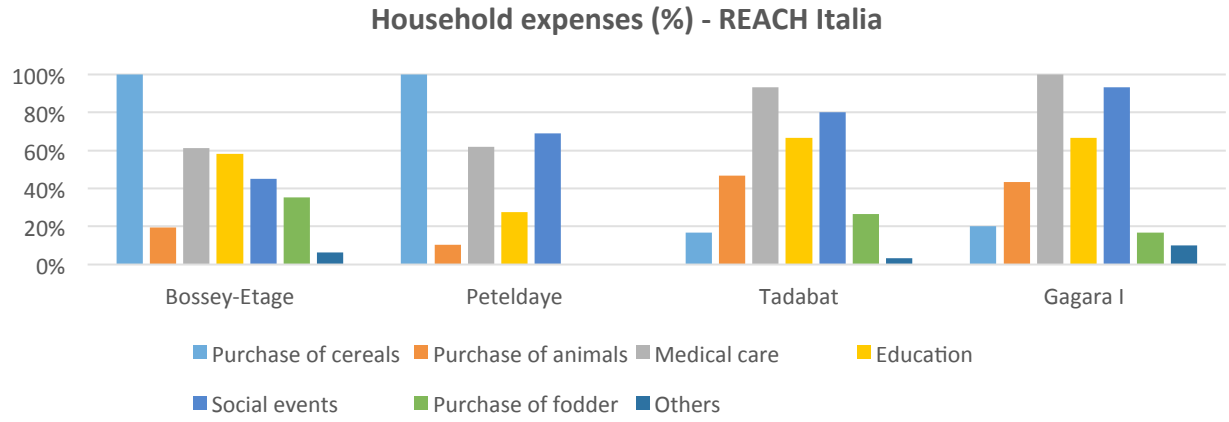
The total average household income highly differ from village to village. It appears that the average income is much higher in Bossey Etage compared to the other villages. In Tadabat some households have important revenues from artisanal gold mining.



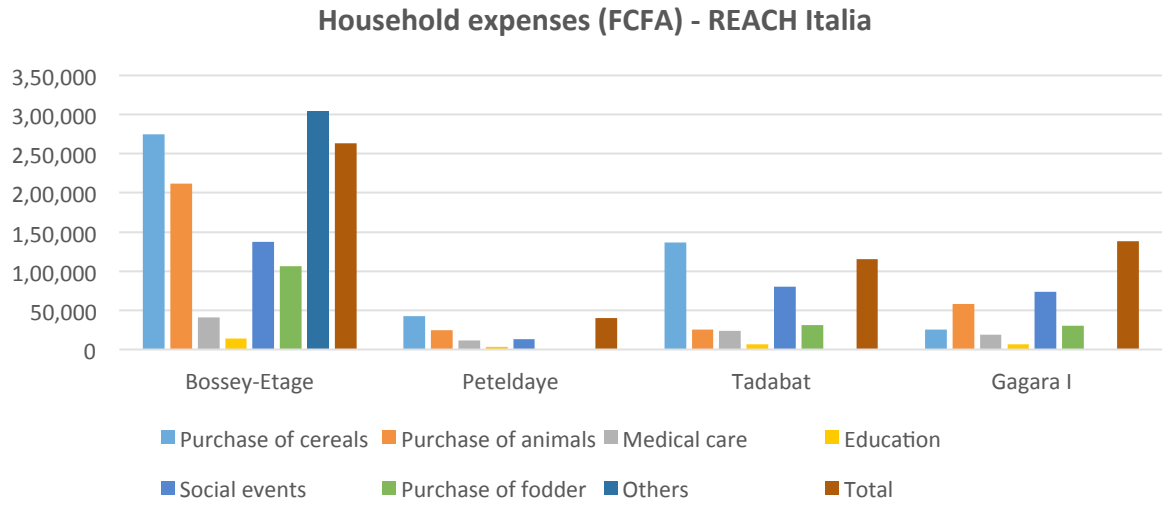
The absolute threshold of monetary poverty is estimated at 153 530 FCFA per capita and per year (250 US$)[4]. The figure above presents the % of households that live below the poverty threshold. It seems that Bossey Etage has the lowest value of 60% and Gagara I the highest value.

C. Household expenses

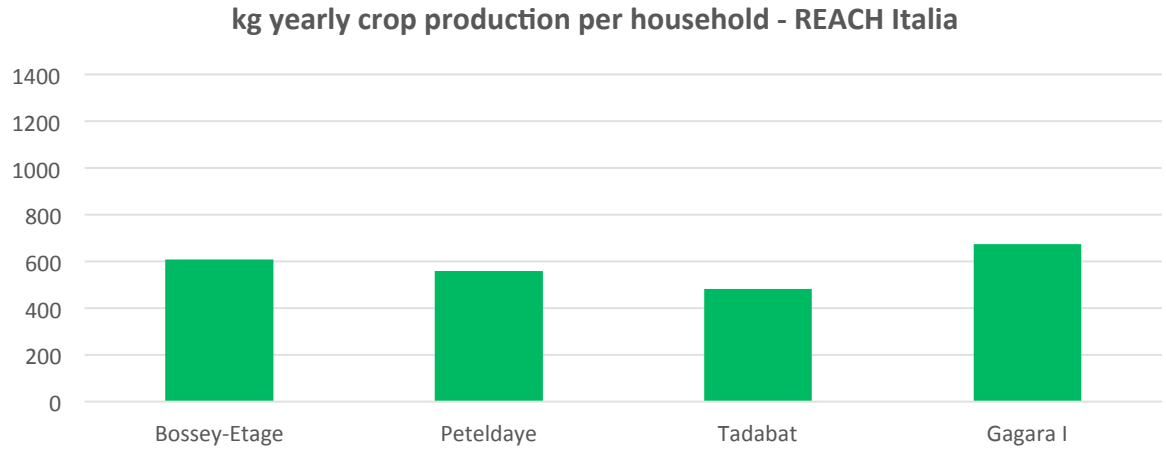
[4] Rapport Enquête multisectorielle continue (EMC) 2014: Profil de pauvreté et d’inégalités (p.27)



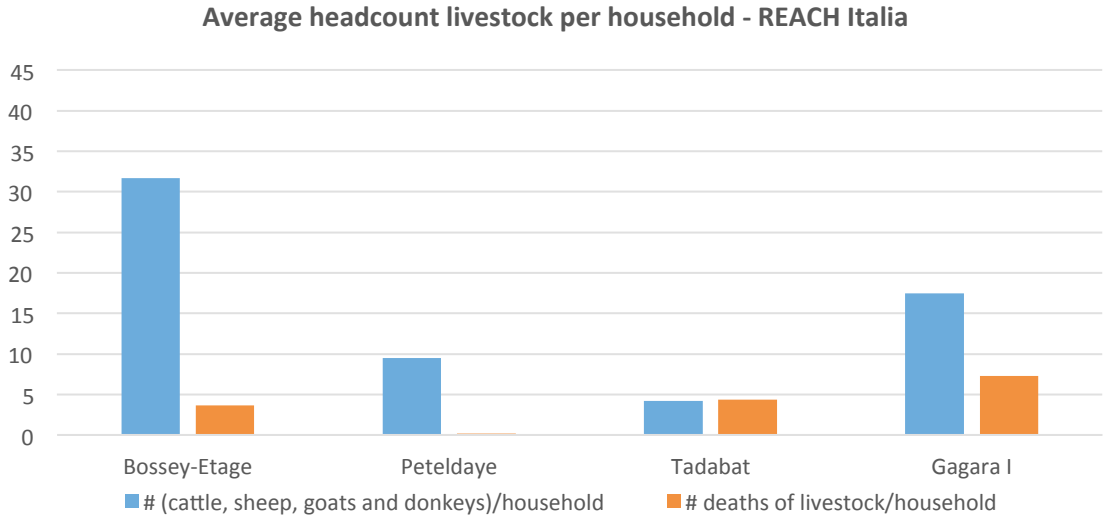
All households in Bossey Etage and Peteldaye spend their income to the purchase cereals and other food items, which is much less the case in Tadabat and Gagara I. Most of the households spend money for medical care, but also for social events (e.g. funerals, etc). The figure below shows that the expenditure for social event is relatively high. In accordance with the income per household, the expenditures is much higher in Bossey Etage than in the other villages.



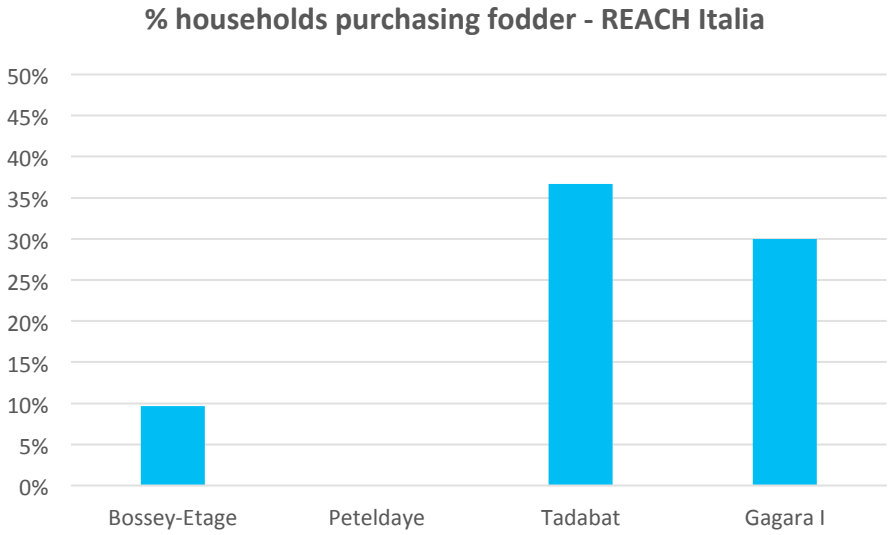
D. Crop-livestock production per household



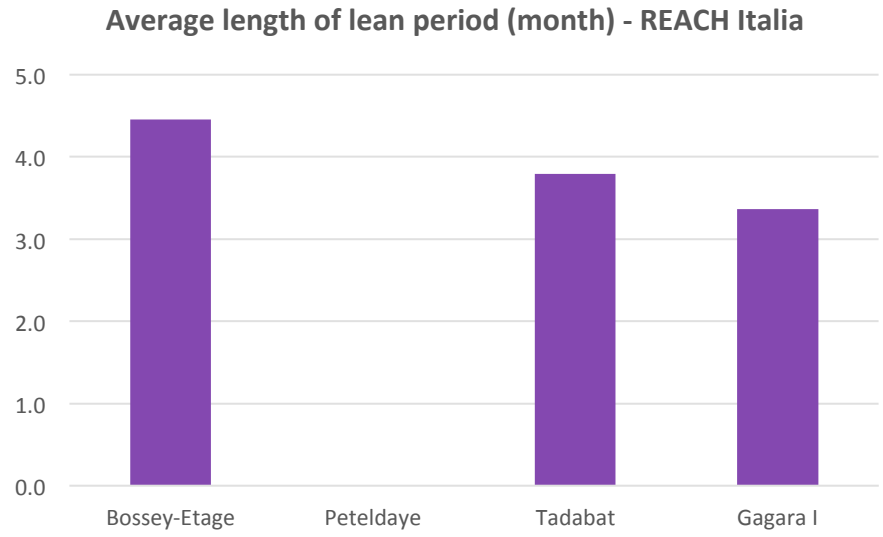
The yearly crop production per household and per year is fairly similar across the different villages. In accordance with the income per household the average size of livestock is much higher in Bossey Etage compared to the other villages.



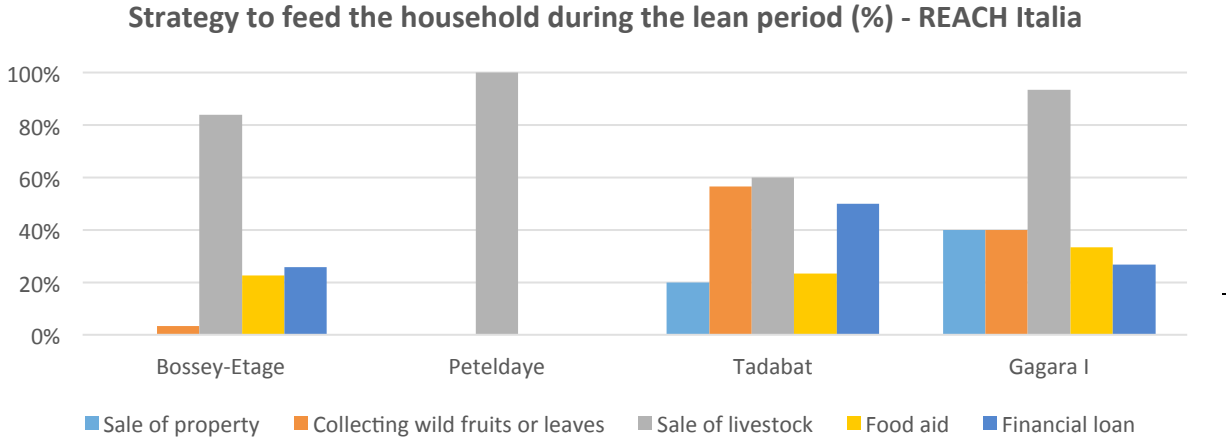
The figure below shows that no households in Peteldaye seem to purchase fodder for their cattle. It appears further that the pastoralists in Peteldaye practice transhumance in search for fodder and water for their cattle.



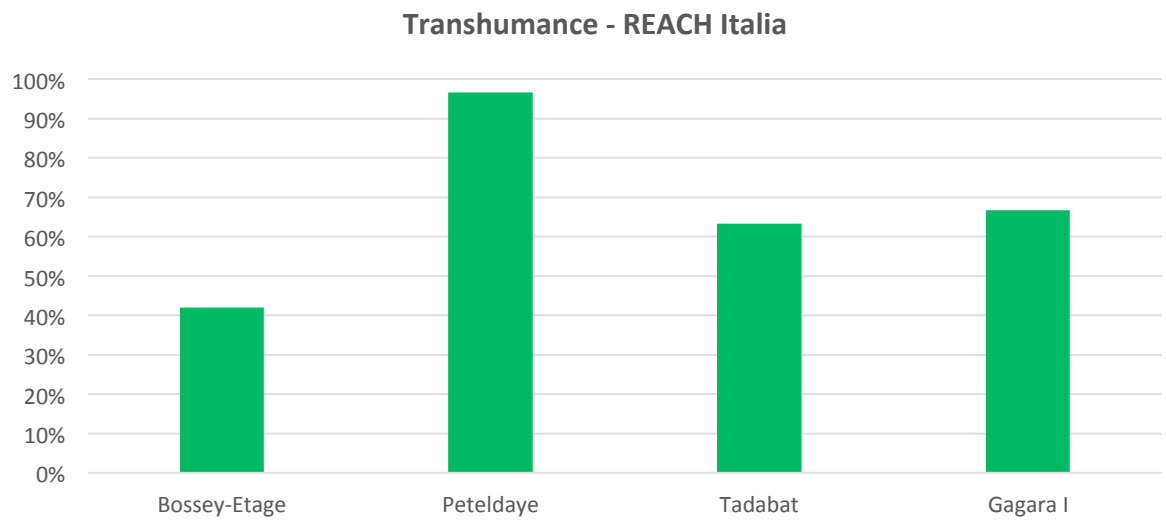
E. Household food supply



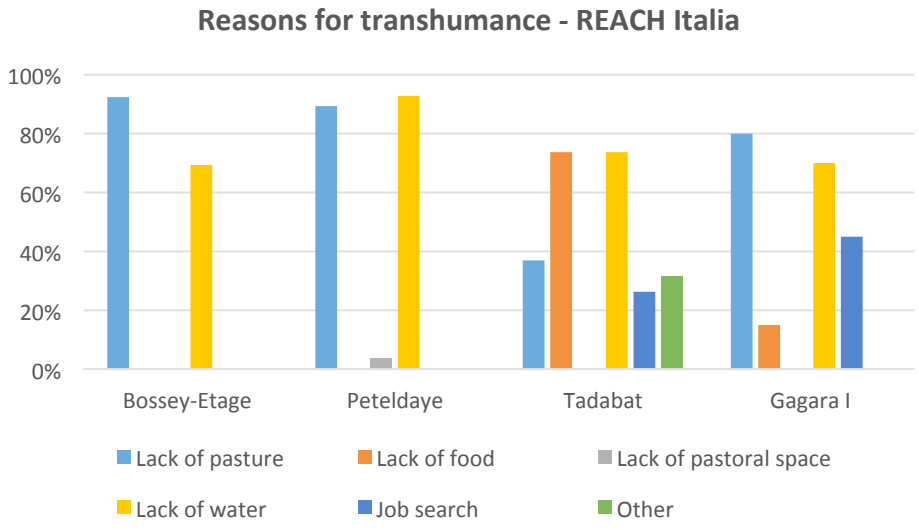
The average length of the lean period (period between end of food stock in household and start of harvesting) varies between 3 and 4 months. No data was available for Peterdaye. The main approach to feed the members of the household during the lean season is selling livestock. Other ways to cover the lean season is the collection of wild fruits and leaves. This shows that trees and livestock are an important survival mechanism during the lean period.



F. Impact of rehabilitated sites



The figure above shows that the pastoralists of Petelday practice much more transhumance than for example Bossey Etage. The figure below shows that when transhumance or migration is practiced, it is in search for fodder for the cattle and water. Other reasons for the village of Tadbat is the serach for human food.



Annex 5. Conservation and monitoring results

Overview of the environmental and biodiversity monitoring results

Name of the village		PV-REACH Italia-001: BOSSEY ETAGE					PV-REACH Italia-002: PETELDAYE			PV-REACH Italia-003: TADABAT				PV-REACH Italia-004: GAGARA I			
Name of the sites		Site 1 (100 ha)	Site 2 (43 ha)	Site 3 (8 ha)	Site 4 (10 ha)	**Total**	Site 1 (49 ha)	Site 2 (30 ha)	**Total**	Site 1 (24 ha)	Site 2 (13 ha)	Site 3 (5 ha)	**Total**	Site 1 (10 ha)	Site 2 (24 ha)	Site 3 (60 ha)	**Total**
Number of hectares		**100**	**43**	**8**	**10**	**161**	49	30	79	24	13	5	42	10	24	60	94
Tree diversity	Acacia nilotica		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
	Acacia senegal				x	x		x	x		x	x	x	x	x	x	x
	Acacia seyel							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
	Bauhinia rufescens							x	x	x			x				
	Calotropis procera			x	x	x					x	x	x		x		x
	Faidherbia albida									x			x				
	Leptadenia hastata			x		x								x	x	x	x
	Zizyphus mauritiana			x	x	x	x	x	x	x	x		x	x	x	x	x
	Number of species (#)	2	3	6	6	**7**	4	6	**7**	5	6	5	**9**	7	8	7	**8**
Herbaceous diversity	Alysicarpus ovalifolius	x	x	x	x	x								x	x	x	x
	Boreriara diata	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
	Cenchrus biflorus	x	x	x	x	x											
	Choris pilosa	x	x	x	x	x								x	x	x	x
	Corchorus tridens	x	x	x	x	x								x	x	x	x
	Dactyloctenium aegyptium	x	x	x	x	x								x	x	x	x
	Erogrostis tenella	x	x	x	x	x				x			x				
	Eragrostis tremula	x	x	x	x	x											
	Euphorbiahirta	x	x	x	x	x											
	Leptadenia	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
	Pergularia tomentosa				x	x											
	Schoenefeldia gracilis						x	x	x					x	x	x	x
	Setariapallidefusca									x	x		x				
	Tribulis terrestris	x	x	x	x	x											
	Zornia glochidiata	x	x	x	x	x								x	x		x
	Number of species (#)	14	14	14	15	**15**	3	3	**3**	4	4	2	**5**	9	9	8	**9**
Presence of fauna					Bird nest			Bird nest									

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.

Choris pilosa		- Used for fodder - It has a social role for religion, superstitions, and magic
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.

Erogrostis tenella		- Livestock fodder; - Famine food.
Eragrostis tremula		- Livestock fodder; - Famine food.
Euphorbiahirta		- Used for medicine: (i) diarrhoea; (ii) asthma; and (iii) fever; - Used for sore teeth.

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.
Pergularia tomentosa		- Used for medicine: (i) anti-inflammatory; (ii) hepatoprotective; (iii) anticancer; (iv) antidiabetic; (v) antioxidant; (vi) antibacterial; (vii) antifungal; (viii) analgesic; (ix) anti-infertility; and (x) central nervous system depressant activity.

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-REACH Italia-002 Peteldaye.

I. Compte-rendu des séances d'animation du village de Peteldaye

1. Contexte du Plan Vivo du village

Le plan Vivo du village de Peteldaye a été élaboré en assemblée générale par l'ensemble de la population du village de Peteldaye le 14/10/2016. Cette assemblée a réuni toutes les couches sociales de la population (Femmes, hommes et jeunes). Ensuite, il y a eu des focus groups discussion par couche sociales afin de recueillir les préoccupations de chaque couche sociale.

Le croisement de ces informations a permis d'établir la perception du PV par la population ainsi que leurs préoccupations. Il faut noter que la réalisation du PV de Pelteldaye a été faite par la population elle-même car déjà outillée par ce type d'exercice par le Programme National de Gestion des Terroirs (PNGT). Ainsi, la matérialisation de toutes les infrastructures du village et le zonage du terroir ont été répertoriés.

INVENTAIRE FORESTIER

Un inventaire forestier a été réalisé sur chaque site. Pour les deux sites de Peteldaye on note une prédominance des espèces suivantes : Acacia raddiana (Chilouki), Bauhinia rufescens (Namaadi), Ziziphus mauritiana (Djaabi), Acacia nilotica (N'Gaoudi).

Au cours de l'AG explication a été faite sur l'important de la réalisation de l'inventaire forestier chaque année et de son lien avec les contrats et le paiement PSE.

Le point sur la gestion des sites récupérés a été abordé sur plusieurs plans. Sur ce point le village a porté à notre connaissance que 2 personnes ont été désigné pour surveiller les sites récupérer, et un comité de 3 personnes composé des membres du CVD sont aussi impliquées dans la gestion des sites. La surveillance régulière s'effectue de façon inopinée.

Les règles du plan vivo et les chartres foncières locales ont été adoptés. Quelques difficultés sont enregistrées dans l'application de ces règles :

Infraction liée à l'exploitation des sites (transhumants résident sur ou près des sites), le ramassage du foin à des fins commerciaux par les populations des villages riverains.

Trois (3) réunions ont eu lieu pour aborder les questions de gestions des sites et réglé les infractions.

Les femmes et les jeunes sont beaucoup impliqué dans les activités de collecte des semences et de l'ensemence des sites, mais aussi de la surveillance car elles semblent être plus sédentaires dans le village que les hommes.

On note un impact positif des sites récupérés sur la vie, les conditions de vie des populations. On peut cite entre autre l'utilité des espèces ligneux et herbacés qui existent sur les sites.

Il est à noter que l'ensemble de ces espèces ligneuses ont diverses utilités sur les plans alimentaire et médicinale aussi bien pour l'Homme et pour les animaux.

Rappel des Règles principales de gestion des sites récupérés du Plan Vivo en faisant référence au Charte Foncière locale:

- Règle 1 : Interdiction formelle de coupe de bois et des feux de brousse sur les sites récupérés
- Règle 2 : Organisation des rencontres fréquentes pour la supervision du site récupéré
- Règle 3 : Participation effective de toute la population aux activités de protection et d'enrichissement des sites récupérés par des actions individuelles et collectives et sous la supervision du CVD et du chef du village

Même si il n'existe pas pour l'instant des terriens, des conflits surgissent quant l'exploitation des ressources naturelles. On note un conflit latent entre transhumants qui résident à coté des sites ou sur les sites. Et qui s'adonnent à une coupe abusive des bois. Le ramassage du foin par les populations des villages riverains à des fins commerciaux.

Des difficultés de gestion des ressources naturelles pourraient surgir cette année au vu l'insuffisance du fourrage et de l'eau pour le bétail et les humains.

Sur les sites de pételdaye on note l'apparition de nouvelles espèces (Bauhinia rufescen) et le retour de la faune sauvage parce que les sites récupérés constituent un habitat propice pour eux.

L'Assemblée Générale à établie son plan vivo et décrit les priorités du village comme suit :

Accès à l'eau

1. Réalisation d'un bouli (retenue d'eau) pastoral
2. Réalisation d'un forage à motricité humain pour l'eau potable

Sécurité alimentaire

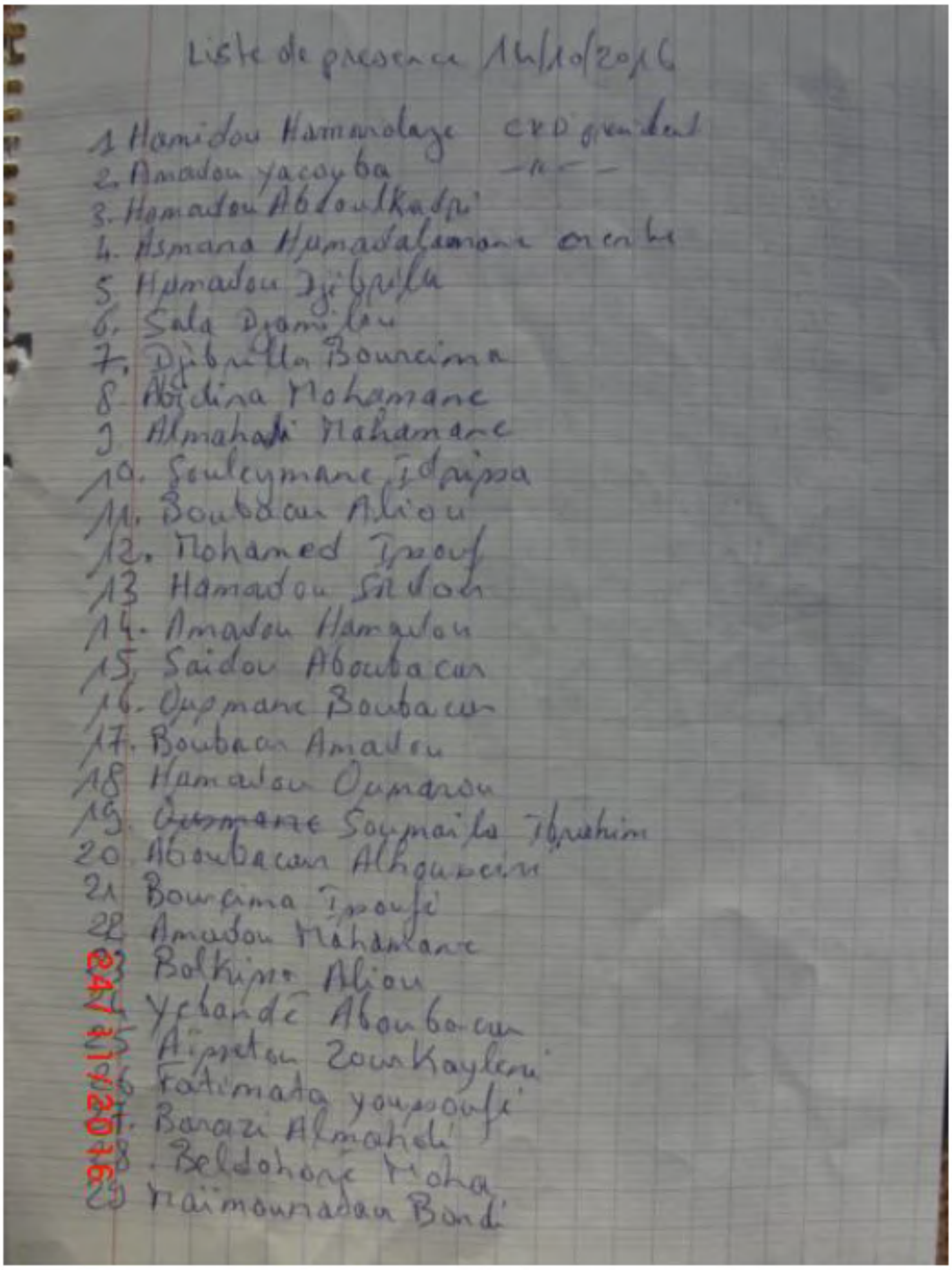
1. Accès au Sous produits agro industrielle (SPAI) pour l'alimentation du bétail
2. Accès à l'alimentation (le mil) vente à prix social pour la population

Financement des AGR des femmes et des jeunes

1. Financement des activités d'embouche ovine pour les femmes
2. Octroi des produits d'aliments bétail pour l'embouche pour les femmes
3. Financement des activités de petit commerce et commerce de bétail pour les jeunes.

QUELQUES PHOTOS

Liste de présence


Liste de presence 14/10/2016

1 Hamidou Hamanolaye CRD president
2. Amadou yacouba -"-
3. Hamadou Abdoulkadri
4. Asmana Hamadalamane orcentre
5 Hamadou Djibrilla
6. Sala Djamilou
7. Djibrilla Bourcima
8. Abdina Mohamane
9. Almahadi Mahamane
10. Souleymane Idrissa
11. Boubacar Aliou
12. Mohamed Issouf
13 Hamadou Saidou
14. Amadou Hamadou
15. Saidou Aboubacar
16. Oussmane Boubacar
17. Boubacar Amadou
18 Hamadou Oumarou
19. ~~Oussmane~~ Soumaila Ibrahim
20 Aboubacar Alhousein
21 Bourama Issoufi
22 Amadou Mahamane
23 Bolkiss Aliou
24 Yebandé Aboubacar
25 Aissatou Zourkayleni
26 Fatimata youssoufi
27. Barazi Almahadi
28. Beldohore Moha
29 Maimounadan Bondi

24/11/2016

30. Mouzalay fatia Maliki
31. Fatimata MBondi
32. Baldohé Alkadri
33. Rahmatou Bonzaga
34. Roukiatou Alhadji
35. Djemba Hamadalamine
36. Assyeta Houssaini
37. Hadjetou Oumarou
38 Fatimata Amadou
39 Hadjatou Asmana
40 Soufray Asmana
41 Aïssetou ~~Oumana~~ Maliki
42. Hadjetou Asmana
43. Mohamadou Tamimoudari
44 Abdoulaye Drouf
45 Souheyata Bilal.
46 Safiata . Hadidjatou Abdoulkadri

24/11/2016

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”