Verification report of the Project Rehabilitation of the Sahel (AGED).

Name of Verifier(s)	Date of Review
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Senior Auditor	Ganaba Souleymane
Member(s) of the Verification team	Ganaba Souleymane, ecologist Cissé Moumouni, sociologist Barry Hamidou, Fulfulde translator
Internal Verification Code	Independent Expert
Standard version	Plan Vivo Standard 2013
Plan Vivo Certificates (PVC) issued (ex ante) - • **Of which were converted into ex-post-issued buffer certificates**	6 716 tCO2e
Buffer Certificates	1 678 tCO2e

Project Description

The Sahel, located in the southern part of the African Sahara, is a semi-arid transition region that covers about 30% of Burkina Faso's territory. Its vegetation cover is composed of steppe formations consisting largely of grassy formations and stunted thorny shrubs which density, height, and leaves width increase as far as one is progressing southward (World Bank, 2012).

Historically, rainfall variability is significant and is expected to increase according to forecasts. According to estimates, Burkina Faso will suffer a reduction in rainfall from -3.4 percent in 2025 to -7.3 percent by 2050 (National Climate Change Adaptation Program (PANA) of Burkina Faso, 2007).. The Sahel region is particularly vulnerable to climate change because of its geographic location and the dependence of its population on rain-fed agriculture and transhumance systems. The main livelihood strategies in the region are based on secondary services from land and water resources (food, fuel, fiber). Rainfall variability and desertification are the main factors that make the Sahel environmentally one of the poorest and least secure area in the world (Kandji, Verchot and Mackensen, 2006).

The area is characterized by space and time variation in rainfall (Figure 1). Climate worsening of the last decades and anthropic pressure are the causes of desertification.

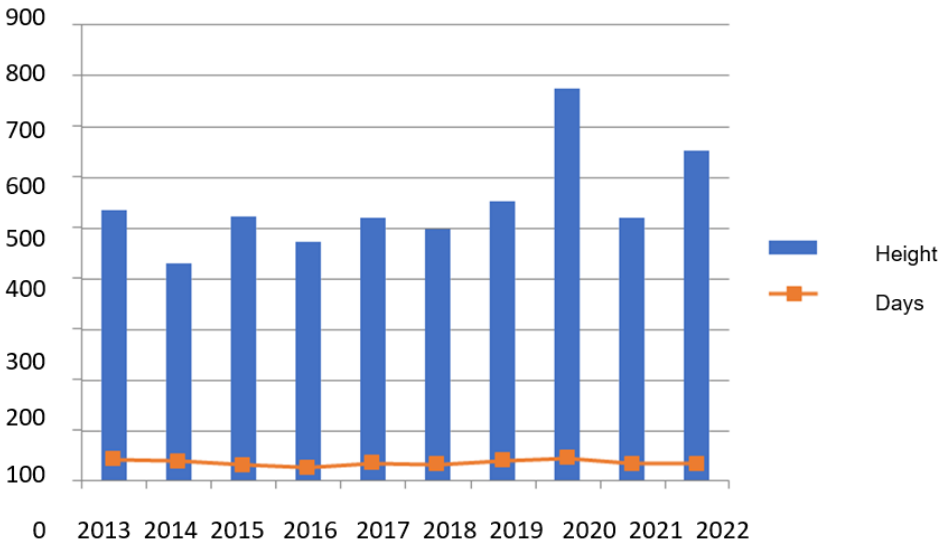

Figure 1: Variation in annual rainfall and number of rainy days in Dori (Source: DRA Séno)

Desertification is illustrated by severe soil erosion that turns into bare glazes that are impervious to rainwater penetration (Bambara, 2016), frequent crop failures, and low forage and firewood production. Yet pastures play an important role in livestock feeding. They are the basis, and most often the totality of pastures, food resources for ruminants in breeding. More than 90% of the energy used by cattle comes from pastures (Pagot, 1985).

Under livestock production conditions such as those of the Sahel region, improving the potential of forage production, both quantitatively and qualitatively, is necessary to improve livestock productivity (Saïdou et al., 2010).

The Delfino plow is extremely efficient. Attached to a tractor, it can plow 15 to 20 hectares a day,

compared to 1 ha per day for a hundred farmers who dig by hands (Figure 2). Once the area is plowed, local woody or herbaceous species are sown directly or seedlings from nursery production are transplanted. These species are very resilient and grow well on degraded land. They provide vegetation cover and improve productivity on previously barren land.

Figure 2. A worker prepares a Delphino plow to start plowing in Burkina Faso (source ©FAO/ Giulio Napolitano)

The Plan vivo carbon project aims to first revive degraded soils within the Sahel by using the Delphino plow to collect rainwater and rehabilitate the land, and then to empower local people through payments for ecosystem services for them to sustainably manage the generated resources and improve their livelihoods.

The benefits of nature that determine human well-being are ecosystem services (Millennium Ecosystem Evaluation, 2005) and the flow of ecosystem services is determined to a large extent by biodiversity. Plan Vivo Payment for Ecosystem Services (PES) scheme, including carbon sequestration, is an opportunity to encourage and maintain their functionality.

The project was developed under the authority of BKF/017 program "Livestock Improvement Project of the Zebu Azawak and sustainable management of pastoral resources-*Projet d'Amélioration de l'Elevage du Zébu Azawak et de Gestion durable des ressources pastorales*" implemented by the Ministry in charge of animal resources. This project "Recovery and Sustainable Management of Degraded Pastures by AGED in the Sahel Region of Burkina Faso" aims to reverse pasture degradation and promote sustainable management of pastures within the Sahel region of Burkina Faso. It uses the Plan Vivo standard as a framework to link ecosystem services generated by rural communities to payment mechanisms and markets. CO_2Logic shares its knowledge and supports the development of Plan Vivo file.

The intervention consists of restoring degraded pastures within the Burkinabe Sahel in close cooperation with local rural communities by re-establishing their structure, productivity and diversity that have disappeared since the great drought of 1984. It aims at increasing the productivity of herbaceous pastures and woody vegetation for the benefit of breeders and farmers. Sustainable management of pastures is supported through the development of local land charters that will build the capacity of communities to develop appropriate mechanisms for controlling the use of these pastures.

This carbon project is located in the Sahel region, within the Northern part of Burkina Faso. It targets 4 former villages of the urban commune of Dori (Djigo, Sambonaye, Touka Korno and Touka Bayel), validated in 2016 which have already benefited from the first transfers of Plan Vivo funds. To these villages, 3 new ones have been added: Mamassiol, Lamdamaol and Tialel (table 1). Other sites such as Bafilé and Tialoltiope are expecting to integrate the Plan Vivo process.

Table 1. Summary of villages in the Plan Vivo carbon project of AGED Dori

Site identification	Village/commune/province	Number of sites	Total area (ha)
PV-AGED-001	Djigo/ Dori /Séno	3	297
PV-AGED-002	Touka-Bayel/ Dori /Seno	3	119
PV-AGED-003	Touka-Korno/ Dori /Seno	4	210
PV-AGED-004	Sambonaye/ Dori /Séno	7	647
PV-AGED-005	Mamassiol / Dori /Séno	4	159
PV-AGED-006	Lamdamaol / Bani /Seno	3	175
PV-AGED-007	Tialel / Bani /Seno	1	101
	7	25	1708

The project activities defined within the Project Design Document (PDD) are listed in Table 2 hereunder.

Table 2. Summary of PDD Activities

Type of intervention	Project activity	Description	Target group	Eligible for PV accreditation
Ecosystem restoration	Restoration of degraded pastures	Direct seedling of native tree species	Community groups	Yes
Improved land management	Land management	Implementation of local land charter	Community groups	Yes
Improved land management	Capacity building	Capacity building sessions e.g. seed collection and processing	Community groups	Yes

The project has a 30-year credit period and a 10-year payment period. Certificates will be issued *ex-ante*, after an annual report to the Plan Vivo Foundation. After each successful monitoring period, payments will be made to participants. The certified carbon profits resulting from the activity are 59 tCO2/ha.

The first validation report was drafted, submitted in July and accepted in August 2016.

NGO AGED is coordinating the project.

Presentation of NGO AGED, coordinator of the project

The Association for Managing the Environment and Development (AGED) is an association under Burkinabe law who is aiming to promote the socio-economic development for the different groups of the rural population through the improvement of their knowledge and know-how.

Objectives of NGO AGED are: (i) to help building the capacities of communities; (ii) to contribute to sustainable management of natural resources; (iii) to contribute to land security among all rural actors; (iv) to support initiatives for improving performance of economic activities; (v) to support humanitarian efforts and food sovereignty; and (vi) to promote human rights.

AGED is led by workers from the Burkina Faso Sahel Program (PSB). These leaders are experienced on the development and management of natural resources within the framework of local conventions of PSB/GTZ, PSB/PB and PSB/Danida, which changed to become PGRN-SY. Successes and failures of the local conventions (RIGRN) in the years 2000s by PSB/GTZ in Oudalan (Kishi Beiga) and PGRN-SY in Séno and Yagha are used as examples of local management of natural resources (NR). As a result, the land charters defined within the framework of Plan Vivo are spreading to other localities not involved in the Plan Vivo project.

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Facilitation and animation work of the carbon project is held by **Mr. Hama GADIAGA, email:**

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This NGO has a staff of 86 workers, including 77 local and 9 non-local staff

Introduction

1. *Objectives*

The evaluation of Plan vivo carbon project is occurring at the same time the 27th United Nations Climate Change Conference "COP27" is being held in Sharm el-Sheikh, Egypt. This year is characterized by an acceleration of global warming with abnormal heat and drought in Europe. Africa emits only 3% of greenhouse gases (GHG) but it is the most vulnerable part of the global to the impacts of climate change. Africa can contribute to the reduction of global carbon emissions through trees and phytoplankton.

This Plan Vivo project verification report works on the carbon credits generated by AGED's recovery and sustainable management of degraded pastures in the Seno province of Burkina Faso. It is based on the premise that Plan Vivo projects are subject to annual reviews and verification every five years by a third-party. The overall objective of the verification process is to conduct an assessment of the registered and functioning Plan Vivo project against the Plan Vivo standard to ensure that the project works in compliance with the standards and continues to bring carbon emission reductions and other expected benefits to local ecosystems and communities' livelihoods. This is to provide an opinion in the form of a verification opinion, answering the following questions:

- Does the project continue to meet the requirements of the Plan Vivo standard (v. 12/2013)?
- Were the project activities carried out as planned in the PDD and as reported within the project's annual reports?
- Did the project activities contribute in general to generate climate benefits to the expected extent?
- Have the climate benefits generated by the project been realized pursuantly to the technical specifications of the project?
- To what extent has the project generated the expected livelihoods and benefits for biodiversity?
- Are there any new types of project activities or significant changes to the project design (activities, procedures, or monitoring protocols) as documented in the project annual reports and PDD updates that have been effectively implemented in accordance with the Plan Vivo standard?

2. Scope of work

This audit took place over the whole project physical area and considered the project activities that have been implemented up to date. Only data from the period since the validation, from July 2016 to November 2022, (about five years) were considered.

3. Methodology

The implementation of the Plan Vivo project by the ONG AGED has been disrupted by the insecurity situation due to terrorism. Since 2018, Burkina Faso has been experiencing increasingly frequent and deadly attacks in its northern zone, perpetrated by both Al-Qaeda and The Islamic State affiliated groups.

The worst affected region by these attacks is the Sahel (north), which shares a border with Mali and Niger. In 2019, more than 600 security incidents were reported by ACLED, resulting in approximately 2,200 deaths, more than half of which occurred within the Sahel region, specifically in the Soum and Oudalan provinces. In 2022, Africanews reported that terrorist attacks on the people and institutions of Burkina Faso since 2015 have resulted in serious human rights violations and the deaths of more than 10,000 people. In this context of widespread insecurity, the project sites remain unreachable, preventing verification of carbon sequestration and other ecosystem services associated with each site.

Therefore, an alternative approach is proposed to verify that project activities continue and monitoring established despite this insecurity situation.

This approach consists of three elements:

1. Community focus group meetings to assess the governance and socio-economic impact of the Plan Vivo project.
2. A verification of climate benefits/field measurements;
3. An update of the PDD with a proposal to add the COS (Soil Organic Carbon) model.

Our initial documentation review was initiated as early as June 3, 2022 and a reflection was conducted, then a verification plan initiated. Discussions continued with BKF/024 Project and Plan Vivo. During these discussions, some pieces of information about the project, including objectives and schedules were discussed. Several dates for field trip dates were postponed on several occasions due to insecurity in the Sahelian region (Table 3).

Tableau 3. Steps of implementation Plan Vivo projects verification

Phase	Activity	Date
	Approval of the verification	June 25, 2022
1. Organization of the audit	First scheduling of Plan vivo projects verification	July 25 to August 1st 2022
	Second scheduling of projects verification	August 8 to August 13, 2022
	Discussion on understanding the ToRs with Plan vivo	September 6 to 13, 2022
	Third scheduling of projects verification	September 26 to October 2022
	Fourth scheduling of projects verification	November 7 to 14, 2022
	Fifth scheduling of projects verification	November 14 to 21, 2022
2. Field audit	Visit and discussion with the project actors	November 14 to 21, 2022
3. Preparation of reports	Submission of the draft report	December 7, 2022
	Review of draft report by Plan vivo	December 14, 2022 to January 28, 2025
	Submission of final report	January 31, 2025

The audit covered the 2017 and 2019 annual reports and the minutes of the project's meetings, interviews with the beneficiary populations and the partner technical services of each municipality, as outings to the sites were not possible due to insecurity.

During our verification period, we obtained all the necessary cooperation and documents required from AGED project coordination in Dori as well as by BKF/024 Project in Ouagadougou.

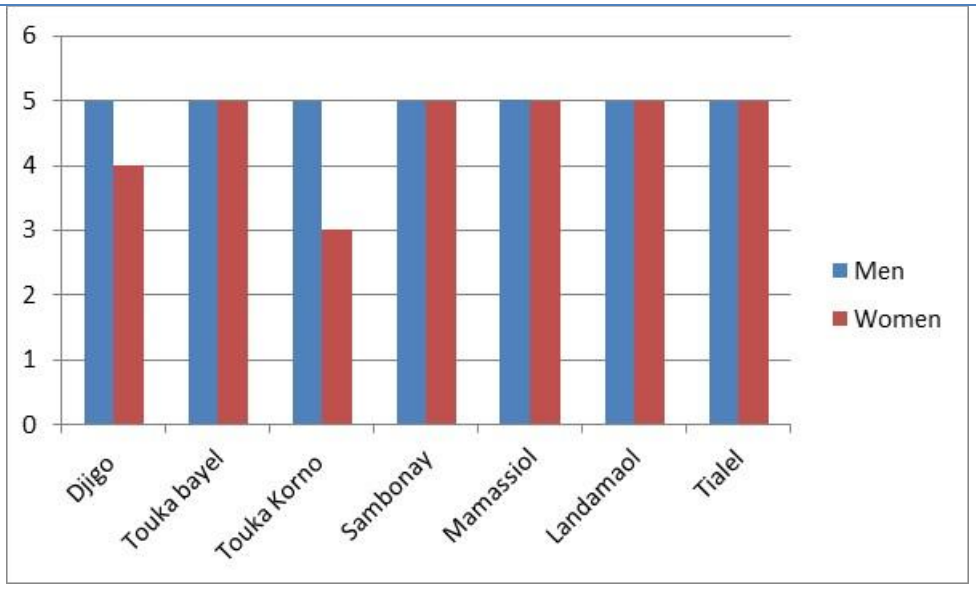
3.1. Verification of Governance and Impact: Community meetings with Focus Groups

Since the security situation does not allow visiting the villages, representatives of beneficiary villages were invited to Dori by AGED for a community consultation meeting. For each village included in the Plan Vivo project, ten people were invited, including at least five ladies. As it is not common for women to travel without men, this minimum was set at half. Communications were sent to the Village Development Councils (CVDs), which selected 10 people to represent each village. All ethnic and social groups, especially the marginalized groups in each village, were included within the delegation invited to Dori for two days.

There are 7 villages in the Seno province included represented in the AGED Plan Vivo project, including 4 former villages Djigo, Touka Bayel, Touka Korno and Sambonay validated in 2016 and 3 new villages (Mamassiol, Landamaol and Tialel subsequently integrated in 2018.

The methodology consisted of semi-structured interviews with representatives of relevant stakeholders' groups, particularly poor people, females, or otherwise disadvantaged persons, as well as with community leaders and project staff. Sessions are organized in focus groups per village and per gender, taking into account the scheduling, especially the presence of the village delegation. These focus groups are conducted using the local language Fulfulde in the process of collecting information. For this purpose, a male sociologist from another local NGO was included in the team to participate in and facilitate the females' focus group meeting in order to improve information transfer through the implementation of a questionnaire drawn up and approved by Plan Vivo and discussed with her.

A total of 67 people, instead of 70 were interviewed, including 32 women (47.76%), represented their respective communities during the interview sessions in Dori (Figure 3). Gender balance (Male/female) was respected in all villages except Touka Korno, where the two ladies were held back in Yakouta due to the fact that their cart broke down in Djigo.Only 4 women and 5 men from Djigo were present at the meeting without justification for the absence of the fifth woman. So three women were absent to interview sessions.



In discussions with the beneficiary communities, the following aspects were verified:

- understanding, awareness, commitment and perceptions of Plan Vivo project beneficiaries,
- cross-checking information received from communities with the ones contained in the annual reports of AGED's projects implementing NGOs;
- perceptions by Beneficiary communities on climate benefits, changes in condition (plant density) and biodiversity on the sites;
- perception by communities of the impact of plant regeneration and biodiversity on their living conditions;
- Verification of the validity of PES agreements, the effectiveness of PES funds payments to communities, and how these funds were used by these communities.erification of climate benefits

In agreement with ONG AGED and farmers' delegations represented on this session, it was agreed that no village is reachable, considering the very dynamic security situation.

A. *Verification that the trees are healthy and have a high survival rate.*

We were not able to conduct the field trip to check the number of half-moons, nor were we able to have geo-located images or long video recordings shot while walking from one side of the half-moon to the other showing the presence of trees, the quality of these trees, in order to allow the auditor to evaluate the very approximate number of trees. Indeed, the developed sites have become shelters for HANIs (Unidentified Armed Men) and carrying any camera in these places can be a huge risk for that person.

B. *Checking plant density*

An assumption about counting half-moons per site, perhaps with the help of Google Earth, has been suggested. Given the context of generalized insecurity within the area, a conceptual study was

conducted in the 4th quarter of 2019 in order to evaluate the evolution of the rehabilitated pasture sites. Satellite images (Landsat 8 or Sentinelle) of the dry and rainy seasons in different years can allow the project to monitor the evolution of vegetation cover according to the Normalized Difference Vegetation Index (NDVI). In addition, some high-resolution Google Earth images were used to count the number of trees or even estimate biomass sequestration. These results were cross-checked with *in-situ* measurements to assess the relevance of the conceptual study. Unfortunately, the study was not able to achieve the expected outcomes.

Very high-resolution images from Google Earth are a source of information for estimating woody density on recovered land in the Sahel. However, it is desirable to acquire raw images because the images offered by Google Earth are not always available for the entire territory at the desired temporal resolution (Karambiri et al, 2020).

Direct digital counting technique using visual interpretation of very high-resolution images is an affordable method for counting trees and shrubs under Sahelian conditions. This method can be applied to all the sites within the Sahel region.

The technique for counting by segmentation and classification of very high-resolution satellite images enables faster counting of woody plants using satellite images. However, this technique requires a fairly high level of knowledge in the processing of satellite images. This method allows countingover larger areas using raw images. Raw images offer fixed accuracies and resolutions.

Although both of these methods are applicable to Sahelian sites, it is advisable to have raw satellite images and samples must be selected appropriately from the images. Limitations of this counting method are that it only takes into account the number for density but not the diversity and size of the inventoried plants (Karambiri et al, 2020).

In addition, the support of an external party, specialized in the analysis of remote sensing data is not effective.

C. PDD update: Soil Organic Carbon

In the current technical specifications, only the above-ground biomass of trees is taken into account in the carbon model. To demonstrate the conservative nature of our carbon model, an estimate of the expected evolution of soil organic carbon after rehabilitation of degraded lands in the Sahelian zone will be added to the PDD. It has already been shown that rehabilitation via natural regeneration by creating "half-moon" shaped micro-watersheds using Delphino plow of the Vallerani system and direct seeding increase not only carbon sequestration in trees biomass, but also carbon sequestration in the soil. A proposal of estimation is offered as follows.

Carbon cycle is a biological, geological and chemical cycle that corresponds to all carbon exchanges on the planet. Carbon is an essential element for all forms of life.

Two types of carbon are found in nature. Carbon is at the basis of complex molecules (proteins, lipids, carbohydrates) which are used to build the tissues of living organisms such as the roots and leaves of plants. In this case, one is talking about organic carbon. We also find inorganic carbon when it is not linked to living organisms. This is the case for dioxide and methane, two greenhouse gases that have a major impact on the planet's climate (Figure 4).

Soil management methods that preserve the carbon stored within the soil are essential for controlling atmospheric carbon concentration. In fact, they contribute to climate change mitigation by slowing down the increase of CO2 in the atmosphere. Agricultural and forestry production systems that reduce atmospheric carbon concentrations, by trapping it in biomass and soil organic matter, are

thus carbon "sinks"; this process is also known as "carbon sequestration". Soil carbon is generally located between 0 and 30 cm.

l forage in the Sahel (source: BUNASOLS)

Techniques to combat desertification (LCD), whether mechanical, cultural or biological, contribute to soil carbon sequestration. On the other hand, changes in land-use, such as deforestation, and inappropriate agricultural practices, such as slash-and-burn, can lead to a net release of carbon from soils into the atmosphere and worsen greenhouse gas problems. Soil management practices that maintain stored carbon also contribute to sustainable agronomic management by improving the fertility of agricultural soils. They are most often synonymous to rehabilitation and sustainability of land management. Maintaining a certain level of carbon in soils often results in benefits in many areas such as erosion control, fertility maintenance and protection against extreme events. Maintaining, or even increasing, soil organic carbon is therefore essential to prevent or recover degraded agricultural lands and, ultimately, food security for societies. In dry regions, it is particularly important to improve water management while avoiding losses of organic matter (and therefore carbon) from soils. Good water management often involves good management of organic matter.

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The inclusion of the soil organic carbon (SOC) model in the technical specifications enables to update the project design document (PDD).

5.1. How to measure a soil carbon content?

According to the National Soil Bureau (BUNASOLS), the study of soil organic carbon theoretically involves three successive phases:

- Placement and openings of the pits on the field;
- Collecting samples;
- Laboratory analyses.

5.2. Placement and openings of pits on the field

Two methods were used: systematic gridding and free exploration

Systematic gridding consists in opening lagoons following well-determined azimuths and in placing observations at regular distances. Scale: 1:10 000 and 1:5000); density of observations: 1 pit/ha and 4 pits/ha.

Open survey method is carried out at the 1:100,000 and 1:50,000 scales.) It consists of making observations in units identified by photo-interpretation and in the field at the time of the survey using photo-identification. The density of observations is 1 pit/2 km^2. The basic documents used are interpreted aerial images.

Conventional techniques: accurate but costly. There are two main types of techniques for measuring soil carbon content, both of which are destructive:

- wet oxidation methods (such as the Walkley-Black method, the French variant of which is the Anne method);
- Combustion methods with determination of the CO2 produced (by infrared, titrimetric, conductimetry).

The principle of oxidation methods is the direct determination of organic carbon after oxidation of organic matter using potassium dichromat in excess, in a sulfuric environment at 135°C. The quantity of formed chromium III+, proportional to the organic carbon content of the soil, is determined by colorimetry. The limit is that the oxidation may be incomplete and therefore extract only part of the organic carbon; this seems to be the case especially for tropical or carbonate-rich soils. Moreover, the handling of polluting and highly allergenic dichromats causes hygiene and safety problems.

For several years, combustion methods have therefore been preferred. These methods determine the total soil carbon (organic and inorganic). They are elementary analysis methods. The most classical method, described in the NF ISO 10694 standard, consists of a micro-weighing (of the order of 25 mg), a "flash" combustion, a chromatographic separation of molecular nitrogen and carbon dioxide, and a detection by thermal conductivity. Determination of organic carbon content requires knowledge of inorganic carbon content from the start, otherwise the sample must be decarbonated before analysis. This very precise method is expensive (about 5 to 10 euros for a 25 mg sample) because of the analysis itself and the time needed to prepare the soil samples. In addition, the representativeness of the measured sample is problematic due to the small masses of soil analysed. Therefore, samples must be prepared finely through crushing (less than 250 µm) to partially avoid these representativeness issues, but this increases the cost of measurement.

Newer, faster and less expensive techniques (O'Rourke and Holden, 2011) have estimated the cost of Walkley-Black wet oxidation methods at 2. euros per sample and dry combustion methods at 15 euros per sample. In the last decade, new, less expensive methods for measuring soil carbon content have been developed. They are based on:

- Near infrared reflectance spectroscopy) (NIRS or SPIR in French, *spectroscopie proche infrarouge*) which costs about 0.5 to 1.2 euros per sample;
- Laser-Induced Breakdown Spectroscopy (LIBS, *la spectroscopie après fusion induite par laser*);
- The use of neutron probes

Whatever the method, skilled labor force is required. These three methods enable working directly

on soil samples without prior preparation (crushing, sieving) but they require calibration most of the time carried out from reference databases ("Soil Library"). Currently, research works seem to be directed more intensely on the use of NIRS techniques that have been used for many years to study plant materials and litter. Since the 1970s, the NIRS study of soils has been applied to characterize soil organic matter. This method has been more widely used since the 1990s. These works and some more recent ones show that it is possible to calibrate NIR spectra very satisfactorily to determine soil carbon and nitrogen contents.

5.3. Limitations and perspectives of carbon measurement

Soils in dry areas are often rich in rough elements (stones, laterites, etc.) and carbonates. As a matter of fact, deep sandy-clay soils are associated with gravelly soils at shallow depths (40 cm) in Séno (MED, 2005) and deep sandy soils on the surface, clayey at depth, are associated with bare gravelly soils in Oudalan (Dabiré, 2005). As a result, the measurement of soil density, which is essential for calculating the stocks of different elements, is difficult.

Indeed, the first difficulty is sampling due to the presence of stones in the soils as well as the poverty of organic carbon and its heterogeneous distribution at the scale where the samples are collected for analysis (a few milligrams). It is therefore difficult to collect representative samples.

The second difficulty is analytical. Most of the techniques for measuring soil carbon estimate the total carbon content of the organic soil, it is necessary to have previously decarbonated the soil. This decarbonation step is sensitive and costly.

Markets have so far focused on verifying the amount of sequestrated carbon, while it would be much simpler and verifiable to directly promote practices that are recognized as “sequestering”. In drylands, it would be easier (and essential) to set up a "carbon" market based on the adoption of these sequestering practices. These are more easily verifiable, and at a lower cost, than the results of practices in terms of amount of carbon actually sequestrated. This is in line with the current promotion of alternative production systems that focus on an optimal management of organic matter and therefore soil carbon. These agricultural practices and the necessary transformations in agriculture, are "an agriculture that sustainably increases productivity and resilience (adaptation), reduces greenhouse gases (mitigation) while promoting the achievement of national food security and development goals" (FAO, 2008). Many international organizations have taken up this concept (named Climate-Smart Agriculture) such as the World Bank and the Global Environment Fund (FAO, 2013). These systems are also advocated in Africa in strategic plans for agricultural development, such as, for example, the Comprehensive Africa Agriculture Development Program* adopted by the African Union's New Partnership for Africa's Development (NEPAD). Such a market could be a much more effective operational lever for changing agricultural practices and implementing soil protection in dry regions. The establishment of a market focused on practices would also recognize the central role of fighting soil degradation.

Limits of the audit

All plots were inventoried prior to 2018. After 2018; monitoring of ecosystem services (i.e. species density and diversity) was not carried out in the old nor new plan vivo sites due to insecurity. Despite the challenges associated with the insecurity, the old villages were maintained in line with the Plan Vivo process. Indeed, AGED has organised meetings with village leaders and officials and called other nationals to obtain information on the state of the sites and to insist on the need to continue the actions that continue to preserve them in the villages of intervention. Also, some villages carried out awareness-raising and individual interviews on the maintenance of Plan Vivo sites. The monitoring of

the sites carried out by the CVDs despite the security situation, the regular holding of awareness-raising activities for the good management of the sites in the villages and the commitment of the villages to the success of the PLAN VIVO project are the greatest successes achieved by the project in 2020.

However, the insecurity in the Sahel region remains the biggest challenge to overcome. To overcome this challenge, a study has been conducted and consisted of carrying out an inventory using satellite images. Unfortunately, the study was not able to achieve the expected results (see section F for summary of results). Hence, it is not possible yet to propose a methodology for the monitoring of the inaccessible sites.

A corrective action was a misbalance of payments between communities after the first issuance has occurred. The payments were equally divided between the villages and not according to the surfaces of the sites of each village.

Seeding collection in November - February 2020 and seeding activities during the months of June and July 2020 were carried out in all villages to increase the productivity:

However, images dated 6 March 2021 of the Touka Korno village sites obtained through a shepherd, as they were inaccessible to AGED facilitators, show sites with growing plants. The Sambonaye site could as well be accessed on 30 March 2021 when a video was made of the site. These post-verification images confirm the sustainability of the trees on the sites.

Limitations of the verification work are:

Almost all of the sites are virtually unreachable, and the persistent threat of terrorism, kidnappings and assassinations of village leaders in the Oudalan, the various testimonies of risks from previous attempts to visit developed sites have not allowed communities to snap geo-located photos and/or videos of the sites. No specialized external support was provided for the analysis of remote sensing data with a high-resolution image to perform a tree counting in randomly selected samples from the different sites. Thus, verification of the required tree density is not assessed. However, few recent photos available and the farmers' testimonies attest about the high density and the sometimes impenetrable "forest" evolution of the restored sites to the point of constituting hiding places for HANIs and carnivorous animals. According to farmers in Sambonay, HANIs threaten those who cut down trees on restored land and say that the trees belong to them, because they can hide there.

In addition, the risks associated with displaced people from villages to Dori to save one of the last projects still operating meant that when the interviews were over, the groups from each village had to return together to their villages before the sun fell. The individual interviews were then paired with the focus groups.

The implementation of the questionnaire was done in a context of traumatized state of mind of the populations and can explain omissions and/or confusions in the remarks and answers to the questions.

As a summary, after the year 2018, the auditor was not able to verify the density and floristic diversity data because it was not possible to go on the fields during the verification visit. However, through interviews with people it could be checked that the trees are still there and the monitoring is being carried out, therefore the auditor deems correct a minimum assurance level.

Reasonable assurance level

A reasonable assurance has been achieved during this verification, which ensures that the auditor is able to verify the accuracy of the number of Plan Vivo credits being issued in this project verification.

The level of assurance for the verification activities have been designed to provide a high but not absolute level of assurance on historical data and information.

List and description of documents reviewed

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Plan for field trip (including list of visited sites and interviewed people/groups)

Considering the security situation and the inaccessibility of the sites, the field visit did not take place. But interviews with beneficiaries were conducted in Dori. The list of interviewees is provided in Tables 4a and 4b hereunder.

Table 4a: The list of services interviewed for the verification of Plan vivo projects

N°	Service	Address	Full name	Contact	Date of meeting
1	AGED	Branch Manager	Bokoum Assane	70157846	15/11/2022
2	AGED	Facilitator	Gadiaga Hama Ouoba	70831757	15/11/2022
3	DPEEVCC/Seno	Acting Director	Diataga Maïga Souleymane	71762575	15/11/2022
4	DPRAH/Seno	Acting Director, Statistics and Planning	Cissé Abdoul Aziz	70685209	15/11/2022
5	REACH Italia	Facilitator	Dicko Boureima Moussa	70343456	15/11/2022
6	Special Delegation of the Commune of Dori	First Deputy	Diandé Amidou Ki	71074953	15/11/2022
7	REACH Italia	Facilitator	Barthelemy Dicko	-	15/11/2022
8	REACH Italia	Tractor Operator	Amadou Maïga	65201939	20/11/2022
9	REACH Italia	Tractor Operator	Amadou Boureima	-	20/11/2022
10	REACH Italia	Chief, Branch Office of Gorom-Gorom	-	-	18/11/2022

Table 4b: Attendance List of Farmers from Villages at ONG AGED's PVCs Verification Meeting

No.	Date	Village	Name and Surname	Role	M/F

1	16/11/2022	Djigo	Dicko Amidou Guédé	CVD Chairman	M
2	16/11/2022	Djigo	Dicko Mamoudou Alou	DSC Committee	M
3	16/11/2022	Djigo	Dicko Moussa Hamidou	Monitoring Committee	M
4	16/11/2022	Djigo	Barry Sadikou Amadou	Customary	M
5	16/11/2022	Djigo	Dicko Boureima Amadou	Youth Representative	M
6	16/11/2022	Djigo	Dicko Balkissa Amadou	Supervisory Committee	F
7	16/11/2022	Djigo	Dicko Aïssatou Seydou	President of Females' Group	F
8	16/11/2022	Djigo	Diallo Fadima Atikou	Member of the DSC Committee	F
9	16/11/2022	Djigo	Dicko Aïssatou Youssoufa	Monitoring Committee	F
	Total				**9 (M: 5, F: 4)**
10	16/11/2022	Touka Bayel	Dicko Boureima Issa	CVD Chairman	M
11	16/11/2022	Touka Bayel	Dicko Hamidou Oumarou	Treasurer	M
12	16/11/2022	Touka Bayel	Bocoum Ousseini	Village Chief	M
13	16/11/2022	Touka Bayel	N'Guim Hamidou Nouhoum	-	M
14	16/11/2022	Touka Bayel	Dicko Mamoudou	-	M
15	16/11/2022	Touka Bayel	Dicko Fadima	Females' Group	F
16	16/11/2022	Touka Bayel	Koïta Fadima	Females' Representative	F
17	16/11/2022	Touka Bayel	Bocoum Ormou	Secretary	F
18	16/11/2022	Touka Bayel	Bocoum Taoureta	-	F

19	16/11/2022	Touka Bayel	Bocoum Fatimata	-	F
	Total				**M: 10 (5 M, 5 F)**
20	16/11/2022	Touka Korno	Cissé Sambo	CVD Chairman	M
21	16/11/2022	Touka Korno	Dicko Hamidou Hama	Member of the Site Management Committee	M
22	16/11/2022	Touka Korno	Cissé Hamadou Oumarou	Secretary	M
23	16/11/2022	Touka Korno	Cissé Zakaria	SMC Member	M
24	16/11/2022	Touka Korno	Cissé Amadou Hama	SMC Member	M
25	16/11/2022	Touka Korno	Cissé Laïla	Women's Representative	F
26	16/11/2022	Touka Korno	Diallo Haoua Ousmane	Women's Group	F
27	16/11/2022	Touka Korno	Diallo Aïssata Amadou	Vice President of Women	F
	Total				**M: 8 (4 M, 3 F)**
28	16/11/2022	Sambonay	Dicko Amadou Alou	Treasurer	M
29	16/11/2022	Sambonay	Dicko Amadou Boureima	Vice-Chairman	M
30	16/11/2022	Sambonay	Maïga Moussa Hama	CVD Chairman	M
31	16/11/2022	Sambonay	Diallo Abdoulaye	SMC Member	M
32	16/11/2022	Sambonay	Maïga Youssoufa Amadou	Guardian	M
33	16/11/2022	Sambonay	Diallo Aminata Hamidou	-	F
34	16/11/2022	Sambonay	Dicko Djenéba Amadou	-	F
35	16/11/2	Sambonay	Dicko Mamoudou	-	F

	022		Hadjatou		
36	16/11/2022	Sambonay	Diallo Safiatou Abdoulaye	-	F
37	16/11/2022	Sambonay	Diallo Mairama Hamidou	Vice-Chairman CVD	F
	Total				**10 (5 M, 5 F)**
38	17/11/2022	Mamassiol	Dicko Hamidou Abdoulaye	CVD Chairman	M
39	17/11/2022	Mamassiol	Diallo Amadou Hama	Member of COGES	M
40	17/11/2022	Mamassiol	Diallo Oumarou	COGES Chairman	M
41	17/11/2022	Mamassiol	Diallo Hamidou Amadou	Secretary General	M
42	17/11/2022	Mamassiol	Diallo Moussa Hama	Member of COGES	M
43	17/11/2022	Mamassiol	Diallo Fatoumata Alou	Chairperson of PINAL and PAMIRAL Group	F
44	17/11/2022	Mamassiol	Diallo Aïssatou Ousmane	Vice-Chairperson of PINAL and PAMIRAL	F
45	17/11/2022	Mamassiol	Diallo Safiatou Boubacar	Member of PINAL and PAMIRAL Group	F
46	17/11/2022	Mamassiol	Diallo Safaiatou Housséni	-	F
47	17/11/2022	Mamassiol	Diallo Mamoudou Hadjatou	-	F
48	17/11/2022	Lamdamaol	Dicko Issa Amadou	Treasurer	M
49	17/11/2022	Lamdamaol	Barry Hama Amadou	Site Supervisor	M
50	17/11/2022	Lamdamaol	Dicko Abdoulaye	Site Supervisor	M
51	17/11/2022	Lamdamaol	Dicko Alou Amadou	COGES Member	M
52	17/11/2022	Lamdamaol	Dicko Sambo	COGES Member	M

53	17/11/2022	Lamdamaol	Dicko Fadima Amadou	-	F
54	17/11/2022	Lamdamaol	Dicko Hadjatou Hamadou	-	F
55	17/11/2022	Lamdamaol	Dicko Hadjatou Mamoudou	-	F
56	17/11/2022	Lamdamaol	Dicko Fadima Hamidou	-	F
	Total				**10 (5 M , 5 F)**
57	17/11/2022	Tialel	Dicko Sadou Hamidou	Member	M
58	17/11/2022	Tialel	Dicko Boukary Mamoudou	Secretary	M
59	17/11/2022	Tialel	Dicko Boukary	Site Supervisor	M
60	17/11/2022	Tialel	Dicko Amadou Mamoudou Bila	Manager in charge of training/mobilization	M
61	17/11/2022	Tialel	Dicko Youssoufa Hama	CVD Chairman	M
62	17/11/2022	Tialel	Dicko Fadima Hama	-	F
63	17/11/2022	Tialel	Dicko Fadila Boureima (Djedi)	-	F
64	17/11/2022	Tialel	Diallo Djarahou Hama	-	F
65	17/11/2022	Tialel	Dicko Hapsatou Hama	-	F
66	17/11/2022	Tialel	Dicko Fadima Issiaka	-	F
	Total				**10 (5 M, 5 F)**
	Grand Total				**M: 35** **F: 32**

1. The Project for Recovery and Sustainable Management of Degraded Pastures in the Burkinabe Sahel by AGED is implemented in accordance with the requirements of the Plan vivo standard (V;12/2013). The activities are carried out as planned in the project design

document (PDD) and as indicated within the annual reports.

2. The approach and methodology used to quantify sequestered carbon and the evaluation of impacts are appropriate, like the baseline scenario is.

3. The restoration of degraded pastures is effective through direct sowing, reseeding and planting of native tree species adapted to the environment with 3 naturalized and non-invasive exotic species.

4. Land management is also effective through the implementation of local land charters containing rules related to the conservation of village pastures, e.g. it is forbidden to cut fresh wood, to install crop fields within the village pastures area, collect dry grasses and cut green wood on rehabilitated land for pasture, and existence of management committees for restored sites in all accredited villages of Plan vivo project

5. Capacity building is also achieved through capacity building sessions, tacitly, for example, collection and processing of forest seeds, production of seedlings in some villages, and natural resource management through thinning woody plants in the sites. It also involved fund management, conflict management and inventory, evaluation and monitoring of their rehabilitated sites.

6. The PSE fund management system and site control are appropriate.

At the end of our verification process, despite the lack of data on biological and socio-economic impacts, we are able to state with a reasonable level of assurance that the Plan Vivo Certificates (PVCs) issued to the villages in the Sahel are effective and can be sold and that PVCs have contributed to the reduction of carbon emissions between July 2016 and December 2022.

Overview of the audit:		
CAR 01: ECOSYSTEM BENEFITS	**Requirement:** **The project generates some benefits for ecosystem services and maintains or enhances biodiversity**	**Category:** *Major*
Date found:	**Deadline for correction:**	
Description of the indicator (Requirement of the Plan Vivo standard***)*:** a density of 260 woody plants per hectare and a diversity of 3 specific species per hectare		
Description of the non-compliance: The density and number of specific species are not defined since 2018 due to lack of inventory because of security threats. So there are no annual inventories and density of woody plants defined annually.		

Evidence: Evidence received and analysis of corrections and corrective actions planned for CN closure

Some initiatives are being explored and developed for the ongoing collection of information on the sites. In order to overcome this difficulty, meetings with the various CVDs took place in Dori at the NGO's office. Also telephone calls were made to some of the village people in order to collect and have an overview of the Plan Vivo activities in each village.

Also digital counting of woody plants by the counting technique by direct digitization by visual interpretation of very high resolution images and the counting technique by segmentation and classification of the very high resolution satellite image is possible and allows a faster count of woody trees from satellite images. However, the latter technique requires a fairly high level of knowledge in the processing of satellite images. This method allows for counting over larger areas using the raw images. Raw images offer fixed sharpness and resolutions. Although these 2 methods are applicable to sites in the Sahel, it is necessary to have the raw satellite images and to choose the samples appropriately on the images. The limitations of these counting methods are that they only take into account the number for density but not the diversity and size of the plants inventoried (Karambiri et al, 2020). Normally the shape of the crown is a characteristic of woody plants; but this characteristic is not sufficiently clear in the context of the association of woody trees and aerial grazing by aerial pruning in the Sahel. It is therefore a field of research to be explored: the possibility of characterizing crowns and identifying the corresponding species or the possibility of defining characteristic crowns in the context of tree association (Karambiri et al, 2020)

Documents reviewed (Reports)

2018 - 2020 Plan Vivo Annual Report Rehabilitation and sustainable management by AGED of degraded pastures in the Sahel region of Burkina Faso

Findings for Evaluation of Evidence:

Then, follow-up actions by producers were carried out in certain restored sites at favourable times to assess the evolution of the woody vegetation. Despite the context of insecurity, some activities have been carried out within the framework of the Plan vivo projects with the support of AGED coordination, this indicates a resilience capacity of the Plan vivo project actors, which are:

- Sensitization meetings with opinion leaders;
- Information meetings on Plan vivo process;
- Conducting socio-economic impact surveys;
- Additional seeding in developed sites;
- Reception and sharing carbon funds;
- Follow-up forest inventories of developed sites.

So an increase in woody diversity and appearance of new species are seen within the plots from 2016 to 2018 (Figure 9 and Table 8).

- Diversification of wildlife on the site (guinea fowl, partridges, squirrels, rabbits, snakes, birds, herons, vultures, ravens, hyenas ...) in Sambonay;
- Appearance of new animal, herbaceous and woody species in Djigo;
- Reappearance of animal species that have long disappeared in the area: guinea fowl, partridges, hyenas, rabbits, fishes and the increase of other existing animal species: frogs in Touka Bayel:
- Appearance of new woody species (Prosopis juliflora, Adansonia digitata, Anogeissus leiocarpa) in Touka Korno.

The high density of woody plants in the restored areas and their protection by the HANI allow them to hide there .

As a summary, since no PVCs were sold during the annual report period of 2018-2020, this issue does not affect the PVC calculations.

Status:

Closed

CAR 02 : PROJECT COORDINATION AND MANAGEMENT	**Requirement:** **The project is managed with transparency and accountability, with the involvement of relevant stakeholders and in compliance with host country regulations**	**Category:** *Minor*
Date found:	**Deadline for correction:**	
Description of the indicator (Requirement of the Plan Vivo standard***)*:** the mechanism and procedures for receiving, holding, and disbursing PES funds are followed, with funds for PES allocated and managed through an account established for this sole purpose, separate from the operational finances of the project coordinator		

Description of the non-compliance:

CAR 02. Management of PES funds deposit booklets in the villages needs to be reviewed to ensure proper management of funds and emulation of activities in villages. Either the booklet is given to the village CVD, or it remains at AGED and a copy of the cash situation is made at each operation by photocopy to the CVD for them to know the remaining amount and be able to schedule the activities of the village accordingly.

Evidence: Evidence received and analysis of corrections and corrective actions planned for CN closure

Discussions with the project coordinator show their willingness to correct this CAR by handing over the account book to the village CVDs while helping them to make the expenses in accordance with the PES protocol.

Documents reviewed

Annuals reports and meetings reports

Status: CLOSED

CAR 03: QUANTIFICATION AND MONITORING OF ECOSYSTEM SERVICES	**Requirement: the project generates real and additional ecosystem service benefits demonstrated through credible quantification and monitoring**	**Category:** *Minor*
Date found:	**Deadline for correction:**	

Description of the indicator :

The respect of the charter has probably avoided any conflict related to the exploitation of natural resources in most villages.

Description of the non-compliance: The concept of conflict should be better defined and monitored. In view of the lack of pastoral resources, tensions over access to pastures should not be considered as conflicts. Instead, conflicts should be considered as violations of the rules described in the local land charters that are part of Plan Vivo. It is better to talk about tensions or infringements.The PDD should be updated.

Evidence: Evidence received and analysis of corrections and corrective actions planned for CN closure

Instead, conflicts should be considered as violations of the rules described in the local land charters that are part of Plan Vivo. It is better to talk about tensions or infringements.

Documents reviewed

Status: ***Closed***

OBSERVATIONS: PES AGREEMENT AND BENEFIT SHARING	**Requirement: the project fairly shares benefits and manages the benefits of ecosystem services through clear PES agreements with performance-based incentives.**	**Category:** *Minor*
Date found:	**Deadline for correction:**	

Description of the indicator (Requirement of the Plan Vivo standard):

The project is managed with transparency and accountability, with the involvement of relevant stakeholders and in compliance with host country regulations

Description of the non-compliance:

Obs 01: The rate of regeneration of woody plants induced by the restoration of degraded soils can be improved by innovative technologies resulting from scientific research. This can increase the survival and growth rate of regenerated trees

Evidence: Evidence received and analysis of corrections and corrective actions planned for CN closure

Work by Fofana et al, (2020) showed that after 14 months of cultivation, plant growth parameters such as collar height and diameter and survival rate in the field showed that inoculation has improved the growth and survival rate of *Vachellia seyal* (syn. Acacia senegal) plants in the fields at Djibo. Double inoculation with native rhizobial complex cells and arbuscular mycorrhizal fungus *Rizophagus irregularis* (Ri) was more effective than single inoculation with rhizobium and mychorizal fungus. The soil used for the development of the Rizophagus irregularis cell came from Dori (Fofana et al, 2020). This work is being conducted as part of the Great Green Wall restoration program in Burkina Faso. With these promising results, we recommend a wider use of inoculation of indigenous microorganisms to boost and improve plant resilience for a better success of restoration plantations in semi-arid lands of the Sahel area (Fofana et al, 2020).

Draw inspiration from these actions to improve the process of restoration and management of developed sites and the drafting of activity reports. Collaboration with Resarch center to improve sites restoration in case of nursery cultivation and plantation.

Draw inspiration from these actions to improve the process of restoration and management of restored sites and the drafting of activity reports

Documents reviewed (Reports)

Fofana B., Moctar Sacande M., Blagna F., Dibloni T.O., Compaoré E., Sanon K.B., Maïga I. et Ouattara A.S., 2020. Boosting land restoration success in the Great Green Wall through the use of symbiotic microorganisms for propagated tree seedlings. Int. J. Biol. Chem. Sci. 14(1): 110-125, January 2020 ISSN 1997-342X (Online), ISSN 1991-8631 (Print)

Original Paper http://ajol.info/index.php/ijbcs
http://indexmedicus.afro.who.int

OBS 02. In view of the context of insecurity, it was not possible to measure socio-economic impacts using focus group technique on community changes and solutions to mitigate the negative impacts of the project. It was not yet possible to measure impacts on biodiversity in terms of the number of tree species and the number of herbaceous species on recovered sites and the number of mammal species during the past year on the recovered pastures sites. However, there is no doubt that biodiversity indicators are being met.

OBS 3. Corrections are needed in the annual reports of Plan vivo projects.

In the 2016 report, the species *Leptadenia hastata* was considered a woody plant and a plant named Leptadenia a single word probably Leptadenia pyrotechnica (confirmed by photo) was classified as a herbaceous plant in Appendix 5 of the annual report.

The spelling and syntax of the scientific names of plants do not conform to international standards. Thus, Tribulus terrestris and not Tribulis, Ziziphus mauritiana and not Zizyphus Mauritiana, Acacia seyal and not Acaca seyel, ect.

A plant designated Perriatum in the table of the 2016-2018 activities report and not using a photo does not allow to identify the plant, nor to certify on its existence in the Sahel. Furthermore, no Perriatum genus has been identified in the country's flora. The Plan Vivo 2016-2018 annual report of Rehabilitation and sustainable management of degraded pastures by AGED in the Sahel region of Burkina Faso is incomplete.

Status: Closed

Table 1. Summary of major and minor Corrective Actions

Theme	Major	Minor CARs	FAR/Observati	Status
Project's Eligibility	0	0	0	Compliant
Ecosystem Benefits	1	0	0	Compliant
Project Coordination and Management	1	0	0	Compliant

Participatory design and development of Plan Vivo	0	0	0	Compliant
Quantifying and Monitoring Ecosystem Services	1	0	0	Compliant
Risk Management	0	0	0	Compliant
Livelihoods impacts	0	0	0	Compliant
PES Agreement	0	0	3	Compliant – observations closed

Table 2 – Reporting Conformity (Delete Yes/No as appropriate)

Theme	Conformance of Draft Report	Conformance of Final Report
Project's Eligibility	Yes	Yes
Ecosystem Benefits	No	Yes
Project Coordination and Management	No	Yes
Participatory design	Yes	Yes
Quantifying and Monitoring Ecosystem Services	No	Yes
Risk Management	Yes	Yes
Livelihoods impacts	Yes	Yes
PES Agreement	No	Yes

Detailed Verification Report

PROJECT'S ELIGIBILITY	
Requirement: Project directly engages and benefits community groups	
Verification Question: 1 and 2	
1.1. Project interventions continue to work on lands where smallholders and/or community groups have clear land tenure. 1.2. Land that is not owned or subject to rights has been included in the project area because: • This represents less than one third of the project areas at any given time of its implementation • No portion of the area has been acquired by a third party from smallholders or community groups to be included in the project • Inclusion will have obvious benefits for the project through creation of ecosystems for the landscape, such as biodiversity corridors. There is a signed agreement between the owners/managers of these lands and participants to manage the area in accordance with these requirements.	
A. Findings **(describe)**	1.1. The project interventions continue to work on lands where smallholders and/or community groups have clear land tenure. All villages included in the degraded pastures restoration project are involved in the implementation of local land charters. These local land charters, drafted on the new rural land law (Law No. 034/2009), allow communities to sustainably manage the restored pastures. These local land charters are created at the village level in a participatory process that includes a representative group of stakeholders (including females, forest users, breeders and youth). These land charters, which are local conventions based on customs and land use, contain rules on conservation of shared natural resources. In addition, all the rehabilitation and development sites certified by Plan vivo were defined by local populations in the presence of technical departments in charge of rural development (agriculture, livestock, and environment) and representatives of the host commune. At the beginning, there was skepticism and reluctance from populations to take action to restore their land. For example, Mr. Gadiaga Hama of AGED stated that in one village, farmers went back on their decision to rehabilitate after this consultation stage, because they received false information about the possibility of being removed from their land. A few months after observing the benefits for the other communities, these populations came back to AGED to request for the execution of the works. This has not been accepted until now to avoid possible disputes.

	1.2. Land that is not owned or subject to rights has been included in the project area because: • This represents less than one third of the project areas at any given time of its implementation • No portion of the area has been acquired by a third party from smallholders or community groups to be included in the project • Inclusion will have obvious benefits for the project through creation of ecosystems for the landscape, such as biodiversity corridors. The majority of the proposed zones are located in the Sahel Nature Reserve in northern Burkina Faso, known as the "Sahel Sylvo-pastoral and Partial Wildlife Reserve". The reserve has a total area of 1,600,000 hectares and was created by Order No. 70/302/PRES/AGRI-EL of December 9, 1970. Within this reserve, pastoral activities are conducted on natural pastures and hunting is allowed. Sites were selected by the project coordinator based on a number of criteria, such as: (i) identification of the potential of the area in cooperation with local technical departments (decentralized services in charge of environment, animal resources and agriculture and the municipality); (ii) soil quality (e.g., the presence of rock in the soil); (iii) land tenure analysis (e.g., land disputes); and (iv) use of land for pastoral activities. During the community consultation with CVDs, final sites have been selected according to the priorities of the beneficiary community. The rehabilitated pastures sites are managed by the Village Development Committee (also called CVD) through the local land charter. The local land charter process has been finalized in the municipalities of Dori and Bani (with the concerned villages: Djigo, Touka Bayel, Touka Korno, Sambonay, Mamassiol, Landamaol and Tialel). Through these local land charters, the rights to use the lands of the rehabilitated sites as well as the carbon rights are owed by local communities. Cattle and wildlife crossways are defined. There is a signed agreement between the owners/managers of these lands and participants regarding the management of the area in accordance with these requirements.	
B.Conformance	Yes [X]	No [ ]	N/A [ ]
C. Corrective Actions (describe)			

D. Response	*(To be filled out by the Project Coordinator)*
E. Status	*Closed*

ECOYSTEM BENEFITS	
Requirement: The project generates benefits for ecosystem services and maintains or enhances biodiversity	
Verification Questions: 1, 3 and 5	
2.1 The Project interventions maintain or enhance biodiversity (2.2) 2.2 The project interventions did not have a negative impact on the environment (2.3) 2.3 All trees planted to generate ecosystem services are native or naturalized species and are not invasive (2.4)	
A. Findings **(Describe)**	2.1 Project interventions maintain or enhance biodiversity (2.2) Monitoring activities for inventory are conducted after the active period of plants, a favorable period for regeneration, between October 10 and November 11, 2016, a favorable period to recognize woody and herbaceous plants. It can be seen that the 7 Plan Vivo projects achieve the minimum requirements specified within the PES contracts for a density of 260 woody plants per hectare (Figure 1) and a diversity of 3 specific species per hectare (Figure 4; Table 4). Diversity of woody species from 2016 to 2018 varies according to the sites and years and is greater than 5 species in all developed sites. On the whole, this diversity has increased in all former sites between 2016 and 2018. This is certainly due to planting and/or reseeding actions by farmers on the sites (Figure 5).

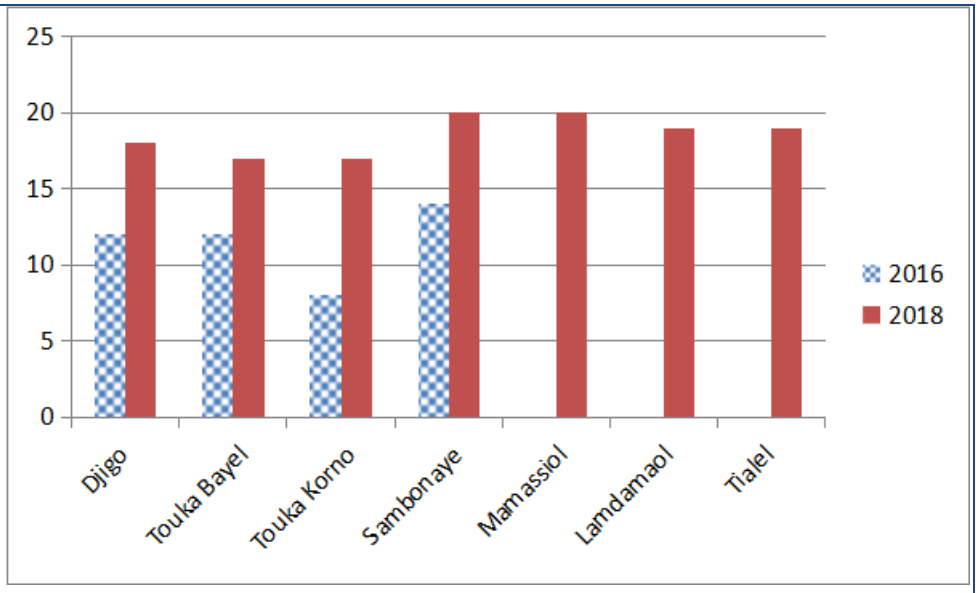

Figure 5. number of woody species on sites developed in 2016 and 2018

An increase in woody diversity is seen within the plots from 2016 to 2018 (Figure 5 and Table 5).

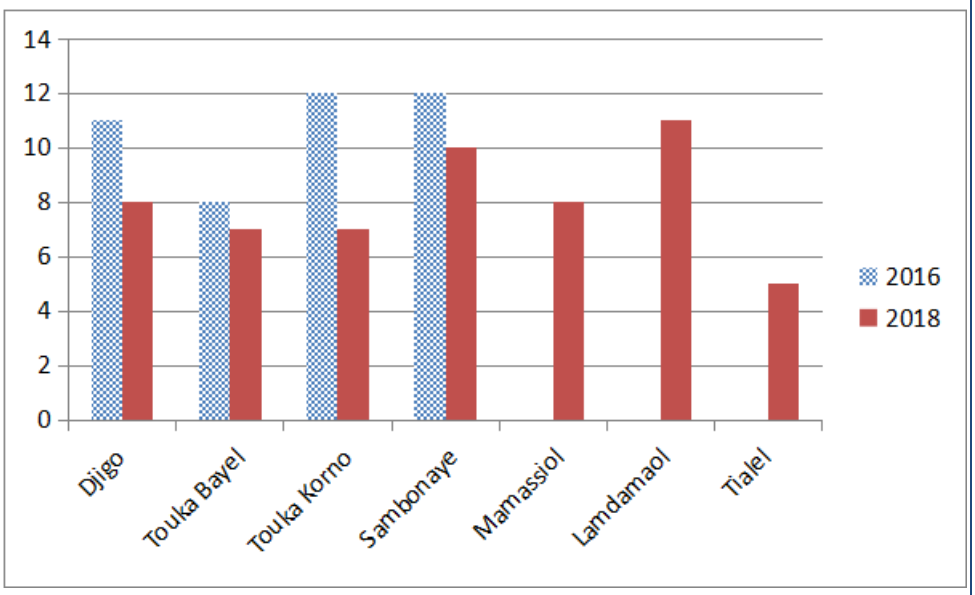

Figure 6. Number of herbaceous species on sites developed in 2016 and 2018.

There is also a relative decrease in the number of herbaceous species of each site developed from 2016 to 2018 (Figure 6).

The number of specific species (with a density greater than 5 feet/ha) is greater than 3 in all the sites, thus meeting the Plan vivo standard (Table 4).

Table 5. Number of woody and herbaceous species in Plan vivo AGED project sites

Site identification	Woody/herbaceous Species 2016	Woody/herbaceous Species 2016-2018
PV-AGED-	11/12	8/18
PV-AGED-	12/8	7/17
PV-AGED-	8/12	7/17
PV-AGED-	12/14	10/20
PV-AGED-		8/20
PV-AGED-		11/19
PV-AGED-		5/19
PV-AGED-		
PV-AGED-		

The technical specifications state that: a minimum trees density of 260 woody plants/ha and a specific species diversity of 3 (minimum of 5 woody plants per species/ha) are complied.

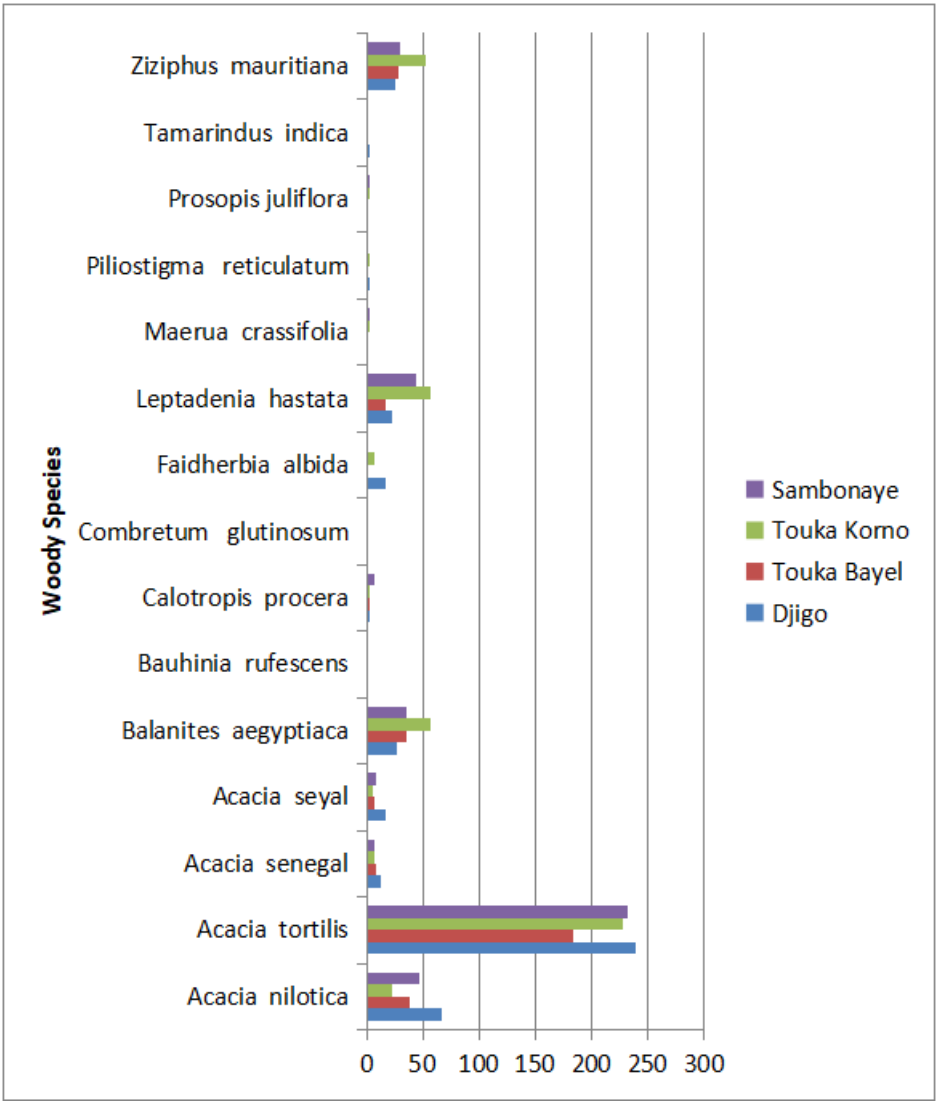

Figure 7. Specific diversity of woody plants in the plots of AGED carbon project sites

In Séno province, Figure 4 shows a predominance in all the 4 former sites of the pioneer species *Acacia tortilis* with an average density of 220 plants/ha. This reduced-leaf species is palatable but it has a low socio-cultural value for Sahelian populations (Ganaba et al, 1995 and 2016). *Acacia nilotica*, *Balanites aegptiaca*, *Leptadenia hastata* and *Ziziphus mauritiana* are the species with medium density, between 10 to 75 feet/ha followed by low density species such as *Acacia senegal*, *Acacia seyal*, *Bauhinia rufescens* etc. (Figure 7).

From 2016 to 2018 there are 8 woody plants that have become less represented in the developed plots of the former sites, these are: *Acacia senegal*, *Bauhinia rufescens*, *Calotropis procera*, *Combretum glutinosum*, *Leptadenia hastata*, *Maerua crassifolia*, *Prosopis juliflora* and *Tamarindus indica*.

Beneficiary communities detected the following changes in biodiversity on the sites induced by Plan vivo projects:

- Diversification of wildlife on the site (guinea fowl, partridges, squirrels, rabbits, snakes, birds, herons, vultures, ravens, hyenas ...) in Sambonay;
- Appearance of new animal, herbaceous and woody species in Djigo;
- Reappearance of animal species that have long disappeared in the area: guinea fowl, partridges, hyenas, rabbits, fishes and the increase of other existing animal species: frogs in Touka Bayel:
- Appearance of new woody species (*Prosopis juliflora*, *Adansonia digitata*, *Anogeissus leiocarpa*) in Touka Korno.

Regeneration and new species appeared in the plots of developed sites as a result of reseeding and improved environmental conditions (Tables 6 and 7).

Table 6. Male beneficiaries' perception about naturally regenerating species at AGED former sites.

Fulfulde name	Scientific name	Djigo	Touka Bayel	Touka Korno	Sambonay
Patouki	*Acacia laeta/senegal*		x	x	x
Gaoudi	*Acacia nilotica*		x	x	x
Tchilouki	*Acacia tortilis*		x	x	x
Boki	*Adansonia digitata*			x	
Gaoudel Haoussa	*Prosopis juliflora*			x	x
	Leptadenia hastata		x	x	x

Djabi	*Ziziphus mauritiana*		x	x	
Mbarkehi	*Piliostigma reticulatum*		x	x	x
Mbamangui	*Calotropis procera*		x	x	x
Kodjoli	*Anogeissus leiocarpa*			x	
Nomandi	*Bauhinia rufescens*		x		x
Boundia	*Alysicarpus ovalifolius*			x	x
Paguri	*Panicum laetum*	x		x	x
Denguere	*Zornia glochidiata*			x	
Gnombre	*Schoenefeldia gracilis*	x			x
Toupe	*Tribulus terrestris*	x			x
Bogodollo	*Andropogon ascinodis*	x			x
Oulo	*Cassia obtusifolia*	x			
Fako	*Corchorus tridens*	x			

Table 7: Females' perception about naturally regenerating species in developed plots at AGED former sites.

Fulfulde name	Scientific name	Djigo	Sambonay	Touka Bayel	Touka Korno
Gaoudi	*Acacia nilotica*	x			
Tchilouki	*Acacia tortilis*				
Tanni	*Balanites aegyptiaca*	x		x	
Gaoudi haoussa	*Prosopis juliflora*		x		
Tchaïki	*Faidaherbia albida*			x	x
Boulbi	*Acacia seyal*	x		x	x
Ganahi	*Diospyros mespiliformis*		x		x
Goungoumi	*Combretum micranthum*				x
Oulo	*Cassia obtusifolia*		x	x	x
Hisso	*Cleome gynandra*			x	
Douloye			x		
Doulo			x		

Females' perception is included within males' one, something which indicates a good knowledge and appropriation of sites and their evolution by both males and females. The diversity of regenerated species improves biodiversity of plots on developed sites.

2.2 The project interventions did not have a negative effect on the

environment (2.3)

Plan vivo projects intervention enabled the appearance of woody plants within cavities of half-moons of the sites that have been developed using the Delphino plow, according to the proportions indicated in the following figure 4. Thus, depending on the site, 55-75% of cavities were colonized by woody plants in 2016 (Figure 8). Reseeding was subsequently carried out on most sites in cavities which were not previously colonized.

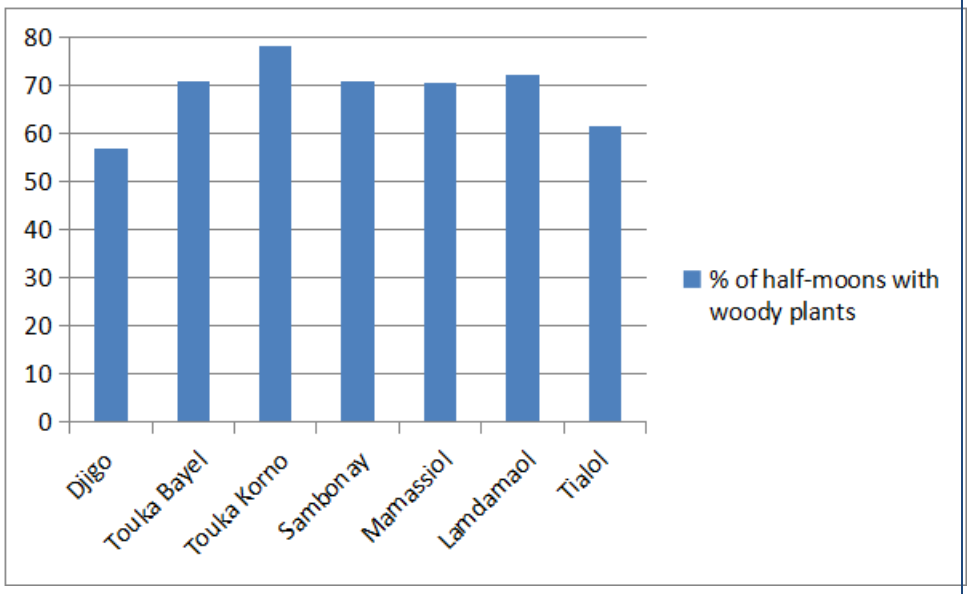

Figure 8. Proportions of half-moons colonized by woody plants on sites

Development has a positive impact on the environment with colonization of water collection cavities by woody plants that vary according to the site (Figure 8).

This development enabled to increase the density of woody species on all sites (Figure 9).

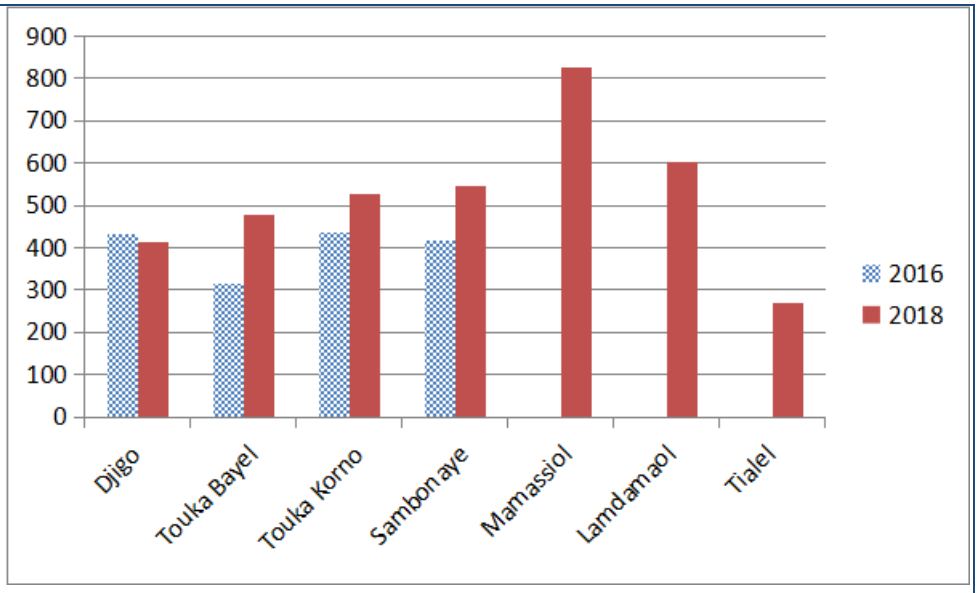

Figure 9. Density of woody species on developed plots on old and new AGED Plan Vivo sites.

Woody density is higher than the Plan vivo standard of 260 plants/ha in all developed sites. An increase in density is also observed from 2016 to 2018 on the old sites except Djigo, which nevertheless, remains above the standard of 260 plants/ha (Figure 9).

On the other hand, the species that appeared in 2016 are multipurpose ones. These are *Alysicarpus ovalifolius*, *Andropogon gayanus*, etc. which increase the income of communities respectively through the sale of forage and/or production of seccos. The same is true for *Cassia obtusifolia*, which is used for producing seccos, and *Eragrostis tremula*, which is used for assembling brooms. They are also forage plants at a certain step of their development. These plants enable the increase of income for the households through marketing of their products.

In addition, discussions with beneficiary communities have shown the relevance of Plan vivo projects in solving problems related to soil degradation, lack of pastures for animals and the appearance of barren areas.

Beneficiary communities' perceptions on climate benefits of the project are:

- Appearance of grasses and trees on sites, restoration of the vegetation cover (fight against wind and water erosion), improvement of climate through the existence of shading and reduction of winds in Sambonay;
- Promotion of degraded and abandoned areas, reconstitution of forage for animals and the provision of forest products for human consumption in Djigo;
- Increasing the possibility of watering animals,
- The appearance of trees on former barren/uncultivated sites, and the development of animal attraction sites at the beginning of the

rainy season, in Touka Bayel;

- Increasing vegetation cover with native tree and grass species, lowering the temperature in the vicinity of the site, controlling erosion (wind and water) through regeneration of vegetation cover, source of shelter for wild animals (hyena, rabbits, snakes, insects, wild cats, partridges, squirrels) in Touka Korno.

The perceptions from beneficiary communities on new sites are the same:

- Improvement of the soil structure, stagnant water, appearance of trees and grasses with a big difference between the site and the undeveloped part in Mamassiol
- Improvement of vegetation cover, production of pods, sources of food for animals, production of non-wood forest products (leaves, fruits,...) in Landamaol;
- Appearance of forage for animals, new forest species (*Boscia senegalensis*, *legel noudji (*Fulfulde*)*, in Tialel

Farmers reported interesting changes in the conditions of the sites. Good woody density and total soil cover in Sambonay and Djigo, very good density and appearance of new forest and herbaceous species in Touka Bayel, a very high woody density on sites used as animal food sources and their refuges compared to the non-developed part of Touka Korno

2.3 All trees planted to generate ecosystem services are native or naturalized species and are not invasive (2.4)

The species on developed sites (regenerated, reseeded and planted species) are native and non-invasive species, except *Azadirachta indica, Prosopis juliflora and Moringa oleifera,* which are naturalized exotic species (Table 8). The first two species are of aligned and hedged while been planted, they are likewise used in traditional medicine. The third one is a food plant also used in medicine.

Table 8. List of plant species cited on plots developed by Plan vivo projects

Scientific name	Synonym	French name	Fulfulde name	Origin
Acacia laeta	*Senegalia laeta*	Gommier blanc	Patuki	Native woody
Acacia nilotica	*Vachellia nilotica*	Nèb-nèb	Ngawdi	Native woody
Acacia senegal	*Senegalia senegal*	Gommier blanc	Patuki	Native woody
Acacia seyal	*Vachellia seyal*	Mimosa épineux	Bulbe	Native woody
Acacia sieberiana	*Vachellia sieberiana*		Allouki, Djelouki	Native woody

Acacia tortilis	*Acacia tortilis subsp. raddiana, Accacia raddiana, Vachellia tortilis*	Acacia faux-gommier, Acacia de Raddi	Chiluki, Kiluki	Native woody
Adansonia digitata		Baobab	Bokki	Native woody
Alysicarpus ovalifolius			Bundiya	Native herbaceous
Andropogon ascinodis			Bogodolo	Native herbaceous
Andropogon gayanus		Andropogon	Mognootou	Native herbaceous
Anogeissus leiocarpa		Bouleau d'Afrique	Kodjoli	Native woody
Azadirachta indica		*Neem*	*Demilan, nim*	*Introduced woody*
Balanites aegyptiaca		Dattier du désert, Dattier sauvage ou Myrobolan d'Egypte	Tanni	Native woody
Bauhinia rufescens			Nammadi, Nammaro	Native woody
Boscia senegalensis			Djiguile	Native woody
Boscia salicifolia			Tirehi	Native woody
Cadaba farinosa			Bagahi	
Calotropis procera		Arbre à soie ou Pomme de Sodome	Bamamdi	Native woody
Cassia obtusifolia	*Cassia tora, Senna obtusifolia*		Oulo	Native herbaceous
Cenchrus biflorus		Cram-cram	Gukkabe	Native herbaceous
Cleome gynandra			Hisso	Native herbaceous
Combretum glutinosum			Dooki	Native woody
Corchorus tridens			Fako	Native herbaceous
Diospyros mespiliformis		Faux ébénier, Ebènier	Ganahi	Native woody

		africain		
Eragrostis tremula		Balai	Hudo-honndorde	Native herbaceous
Faidherbia albida	*Acacia albida*	Kad	Kaiki	Native woody
Grewia bicolor			Keli	Native woody
Guiera senegalensis			Gelohi	Native woody
Hibiscus sabdarifa		Oseille	Lammoude	Native herbaceous
Hyphaene thebaica		Palmier doum	Balihi	
Leptadenia hastata			Ndoulegui	Native woody
Leptadenia pyrotechnica			Pibeteki	Native woody
Maerua crassifolia			Tirehi	Native woody
Mitragyna inermis			Kooli	Native woody
Mollugo nudicaulis				Native herbaceous
Moringa oleifera		Moringa		Introduced woody
Panicum laetum		Fonio sauvage	Paguri	Native herbaceous
Piliostigma reticulatum			Barkehi	Native woody
Prosopis juliflora		Prosopis	Gaoudel haoussa	Naturalised woody
Pterocarpus lucens		Ptérocarpe luisant	Tchiami, Kiami	Native woody
Schoenefeldia gracilis			Gnombre	Native herbaceous
Sclerocarya birrea		Prunier africain	Eydi	Native woody
Tamarindus indica		Tamarinier	Guétèbé	Native woody
Tribulus terrestris			Toupe	Native herbaceous
Ziziphus mauritiana		Jujubier	Ndjabi	Native woody
Zornia glochidiata			Denguere	Native herbaceous

B. Conformance	Yes [X]	No [ ]	N/A [ ]

C. Corrective Actions (describe)	CAR 01. The density and number of specific species are not defined after 2018 due to lack of inventory because of security threats. So there are no annual inventories and density of woody plants nor defined annually after 2018 in some sites
D. (Insert Project Coordinator's Name) Response	Monitoring of ecosystem services (i.e. species density and diversity) was not carried out in the old nor new plan vivo sites due to insecurity. no Plan Vivo Certificates. Seeding collection in November - February 2020 and seeding activities during the months of June and July 2020 were carried out in all villages to increase the productivity: However, images dated 6 March 2021 of the Touka Korno village sites obtained through a shepherd, as they were inaccessible to AGED facilitators, show sites with growing plants. The Sambonaye site could as well be accessed on 30 March 2021 when a video was made of the site. Also, during the monitoring period, which was marked by the security situation due to terrorism, all actors remained committed to the project. Hence, no Plan Vivo Certificates have been sold during the monitoring period. As a summary, since no PVCs were sold during the annual report period of 2018-2020, this issue does not affect the PVC calculations.
E. Status	*Closed*

PROJECT COORDINATION AND MANAGEMENT
Requirement: The project is managed with transparency and accountability, with the commitment from concerned stakeholders and in compliance with the law of the host country
Verification Questions: 1, 2 and 6
3.1 The project coordinator continues to have the ability to support participants to design the project interventions, to select appropriate participants to be included in the project, and to develop effective participatory relationships, including the provision of ongoing support to help the project **(3.4)** 3.2 The project coordinator still has the legal and administrative ability to enter into PES agreements with participants and manage the disbursement of payments for ecosystem services **(3.5)** 3.3 Transparency in the mechanism and procedures for receiving, holding and disbursing PES funds are applied. Funds for PES are allocated and managed through an account established for that unique purpose, different from the project coordinator's operational funds **(3.9)** 3.4 The project coordinator accurately described the progress, achievements, and problems

encountered by the project contained in the annual reports. Annual reports transparently state sales figures and demonstrate the allocation of resources for target groups **(3.10; 3.11)**	
A. Findings (describe)	5.1. The project coordinator continues to have the ability to support participants to design the project interventions, to select appropriate participants to be included in the project, and to develop effective participatory relationships, including the provision of ongoing support to help the project **(3.4)** Despite the context of insecurity, some activities have been carried out within the framework of the Plan vivo projects with the support of AGED coordination, this indicates a resilience capacity of the Plan vivo project actors, which are: 1. Sensitization meetings with opinion leaders; 2. Information meetings on Plan vivo process; 3. Conducting socio-economic impact surveys; 4. Additional seeding in developed sites; 5. Reception and sharing carbon funds; 6. Follow-up forest inventories of developed sites. The greatest success achieved by the coordination of Plan Vivo projects is the fact of retaining former villages that are now unreachable due to terrorism in the process. In fact, NGO AGED held meetings with village leaders and also called other natives in order to have information on the situation of the sites and to insist on the need to continue actions that contribute to their preservation in the target villages. Also, some villages have conducted door-to-door sensitizations and individual interviews on the maintenance of Plan Vivo sites. Monitoring of developed sites carried out by the CVDs despite the security situation, the regular organization of sensitization activities for a proper management of sites in the villages and the commitment of the villages for the success of Plan Vivo projects. 5.2. The project coordinator still has the legal and administrative ability to enter into PES agreements with participants and manage the disbursement of payments for ecosystem services **(3.5)** ONG AGED holds an official recognition N°2001/002/MATD/PSENO/HC/DR as for May 31, 2001, a receipt of declaration of existence AGED MATD N°00000731701 of December 29, 2020 pursuantly to CNT Law. In addition, there is an Established Agreement signed with the Government referenced as N° 2022/009/MEFP/AGED from 2022 to 2027, registered on June 21, 2022 under n°71. Its action covers the Sahel as well as other regions in Burkina Faso (Centre Nord, Est, Hauts Bassins, Boucle du Mouhoun, Centre, Plateau central, etc…). This NGO is governed by statutory bodies: a board of directors and a general assembly. The last general assembly of ONG AGED was held in September 2022.

The NGO works in partnership with 14 farmers' groups or associations in the villages where Plan Vivo projects are implemented in the fields of breeding, agriculture, small trade, crafts, etc.

It also cooperates with government technical departments (Livestock, Environment, Agriculture, Administration) for the implementation of the project.

The Project Coordinator complies with all relevant laws in relation to labor standards: (i) Respect for employees' freedom of association and their right to collective bargaining and does not put any restriction of these rights and freedoms; (ii) No involvement or complicity in any form of forced or compulsory labor; and (iii) No employment or complicity in any form of child labor.

The NGO Coordinator, the Sahel Branch Manager, and the Plan Vivo Project Coordinator, each one them has the legal and administrative ability to enter into PES agreements with participants and to manage the disbursement of payments for ecosystem services, according to their respective grade and role.

5.3. Transparency in the mechanism and procedures for receiving, holding and disbursing PES funds are applied. Funds for PES are allocated and managed through an account established for that unique purpose, different from the project coordinator's operational funds **(3.9)**

PES funds received after the sale of carbon certificates are domiciled at the bank in a special account, AGED / PLAN VIVO /ASSO GEST ENVIRONNEMENT and DEVPT opened for this purpose, on September 09, 2017. This account is different from the NGO's current account. An audit report of the accounts was carried out in 2021 by the Financial Audit and Accounting Firm KOMBOIGO & Associates.

Mechanisms and procedures for receiving, holding and disbursing PES funds are discussed with CVDs of villages which hold Plan Vivo certificates for distribution. Then funds are deposited in accounts created by farmers for this purpose (Table 9). These accounts are managed by two CVD members of the village and an AGED manager who assists them in the management of the funds. Village account booklets are kept by NGO AGED.

The PDD states that withdrawals of funds for expense purposes may only be done with the signature of the CVD Chairperson, the CVD Treasurer and the Project Coordinator. In the implementation of this measure, two signatures are required.

Table 9. Distribution and Reporting of Plan Vivo AGED Funds

Village	Amount allocated in	Amount allocated in	Amount allocated in	Expenses incurred	Account references

	2018	2020	2021		
Djigo	1 323 786	470 170	1 495 141	610 553	No. 9833 CP of Dori
Touka-Bayel	1 323 786	188 385	599 063	2 005 848	No. 9832 CP of Dori
Touka-Korno	1 323 786	332 444	1 057 170	1 508 627	N°9834 CP of Dori
Sambonay	1 323 786	878 601	2 793 951	2 503 472	N°10049 CP of Dori
Mamassiol	0	251 707	800 429	0	808 USEC/Sahel
Lamdamaol	0	277 036	880 975	0	304 UCEC/Sahel
Tialel	0	159 890	508 449	0	305 UCEC/Sahel
Total	**5 295 144**	**2 558 233**	**8 135 178**	**6 628 500**	

NB: CP=Caisse populaire; UCEC = Union des Coopératives d'Epargne et de Crédits

5.4. The coordinator presented the continuation of new sites integration process

In 2018, the coordinator was able to recruit and integrate three new villages into AGED's Plan Vivo project: i.e., PV- AGED-005 - Mamassiol (159 ha); PV- AGED-006 - Lamdamaol (175 ha) and PV-AGED- 007 - Tialel (101 ha).

The basis is that the technical specifications of the project design document (PDD) also apply to the three new participating villages, that is to say that:

- All three villages are located in the Sahelian zone of Burkina Faso;
- The sites are a former degraded pasture zone having a crusted, icy, and waterproof topsoil.
- The technology for rehabilitating degraded sites is the Vallerani system using the Delfino plow;
- Communities are involved in the process of selecting sites and herbaceous and woody species, as well as in direct seeding activities;
- Local land charters have been set up and CVDs are operating in each corresponding village;

	- Communities involved were well informed about the Plan Vivo process and the PES scheme and monitoring objectives that need to be reached to receive payments. New villages (Bafilé, Tialoltiope and an additional site in Djigo) have been enrolled in the project through conducting information and sensitization sessions, household surveys using AKVO FLOW and the signing of PSE contracts (Bafilé, Tialoltiope). Nevertheless, the forest inventory could not be carried out in the old villages as well as in the new ones, because off insecurity. The insecurity situation has greatly reduced the project field activities. All plots were inventoried prior to 2018 and represented in the graphs. In view of the high level of insecurity in some villages from 2018, the project had to modify the method of monitoring the plots. The plots are monitored by the producers who report verbally or who take photos that are sent to the project. Meetings are frequently organized Meetings are frequently organized outside the sites in the cities of Gorom, Gorom for the old sites and Dori for the new sites, with the producers' managers to assess the situation of the trees in the plots. Therefore, the monitoring of the plots is permanent but measurements cannot be carried out on the density and diversity of the trees. The producers confirmed during interviews the sustainability of the regenerated trees, which are also protected by armed men. Indeed, they take advantage of it to hide and have no interest in cutting them down or letting them cut down these trees by anyone. So this situation does not affect the carbon sequestration potential defined in previous years Other sites are awaiting to be integrated under the instigation of the coordination of NGO AGED. AGED's objective in the next three (3) years is to achieve a total of 30 Plan Vivo projects, i.e. 10 per year. To achieve this goal, AGED is counting on new partners such as NEER TAMBA Project with nearly 1500 ha, and SOS SAHEL having 887 ha of land under recovery process.

B. Conformance	Yes [x]	No	N/A
C. Corrective Actions (describe)	CAR 02. Management of PES funds deposit booklets in the villages needs to be reviewed to ensure proper management of funds and emulation of activities in villages. Either the booklet is given to the village CVD, or it remains at AGED and a copy of the cash situation is made at each operation by photocopy to the CVD for them to know the remaining amount and be able to schedule the activities of the village accordingly.		
D. (Insert Project Coordinator's Name) Response	*(To be filled out by the Project Coordinator)*		
E. Status	*CLOSED*		

PARTICIPATORY DESIGN AND DRAFTING OF PLAN VIVO	
Requirement: The project has demonstrated community ownership: communities are meaningfully involved in the design and implementation of Plan Vivo Projects that respond to local needs and priorities.	
Verification Questions: 1, 2 and 6	
4.1 A voluntary and participatory planning that addresses local needs and provides some pieces of information on the drafting of technical specifications is underway (4.1; 4.6; 7.1.). Barriers to participation are identified and some steps have been taken to encourage participation (4.3) **4.2** Smallholder farmers or communities are not excluded from project participation on the basis of their gender, age,income or social status, ethnic or religious origin, or any other discriminatory aspect. **(4.2)** **4.3** The project does not jeopardize livelihood needs and priorities and does not reduce participants' food security **(4.7; 7.1; 7.5)** **4.4** There is a system to accurately record and verify the location, boundaries, and size of each Plan Vivo (4.8).Participants have access to their Plan Vivo project in an appropriate language and format **(4.9)** **4.5** Participants have a forum during which they periodically discuss about the design and progress of the project with other participants and raise any questions or grievances with the project coordinator **(4.12)**. A strong grievance system is in place **(4.14)**	
A. Findings (describe)	4.1. A voluntary and participatory planning that addresses local needs and provides some pieces of information on the drafting of technical specifications is underway (4.1; 4.6; 7.1.). Barriers to participation are identified and some steps have been taken to encourage participation (4.3) Sensitization in favor of participating in project actions is based on: - site management, seed pretreatment and knowledge about the importance of natural resources in Sambonay; - sensitization on climate change, social cohesion, good management of natural resources, training on reforestation, participation in study tours in Djigo; - causes, consequences and adaptation measures to climate change, delimitation of sites, realization of CES/DRS techniques, benefits of trees and drafting management rules for Touka Bayel sites; - Awareness raising on the importance of reclaiming degraded lands, the importance of trees in a context of climate change, community management of recovered sites, harvesting and conservation of forest seeds, production and use of organic manure in Touka Korno. While in some villages such as Sambonay, Touka Bayel, and Touka Korno, there are no obstacles to farmers' participation, in Djigo, these obstacles could come from incompetence, unpopularity, absenteeism in the village, and the questionable morality of the concerned person. The measures taken to encourage participation are the organization of community meals during the works in all the villages. In addition, there is evaluation of the work

volume carried out in Sambonay, support for development materials and support for training in Djigo, beneficiaries' capacity building, rehabilitation of existing grain and forage mills and fences thanks to the funds granted to Touka Bayel, encouragement and sensitization for the improvement of populations' living conditions and social cohesion in Landamaol.

The following Table 10 provides a general overview of the various barriers to the implementation of the activities described in the Project Design Document (PDD).

Table 10. Summary of Anticipated Barriers to Carbon Projects and Actions Taken tomitigate risks

External pressure to engagein unsustainable practices	Restoration of degraded pastures is vital for these communities as breeding is one of the main activities in the area. Transhumance is organized by the local land charter.surveillance of sites is effective in all villages despite the security risksand HANIs contribute to the protection of rehabilitated sites according to the local land charters.	No obstacle
Social		
Community disputes overland tenure	Local land charters provide for procedures to manage land conflicts.	No obstacle
Disputes caused by a conflict between the project's purpose or activities and local communities and organizations.	Participatory planning and continuation of consultations with stakeholders over the project's life. Consultation meetings are organized in all the villages by CVDs.	Minor obstacle Some tensions ordifferences in theexploitation of biological resources
Impact of forest fires	Not so relevant in the project area butwith the insecurity, the rare cases of provoked fire are controlled by populations	Minor obstacle
Extreme weather events during severe droughts	Droughts are not unknown in the Sahel, but all the species used are native to the Sahel and therefore verydrought resistant.	No obstacle
Parasites and disease	Not so relevant in the Sahelian zone	Minor obstacle only one case oftree disease was discovered

		in Tialel

4.2. Smallholder farmers or communities are not excluded from project participation on the basis of their gender, age,income or social status, ethnic or religious origin, or any other discriminatory aspect **(4.2)**

Evidence that smallholders or communities are not excluded from participating in theproject on gender, age, income or social status, ethnicity or religion, or any other discriminatory basis, is that delegations representing the villages during discussions with the external auditor in Dori were composed of Fulfulde- and Tamachek-speaking men and women, older and younger people. In addition, women from all villages stated while being interviewed that all ethnic groups participate in project activities and no ethnic group or individual is excluded.

Table 10 below shows that in the various villages, females have participated in activities of carbon projects supervised by AGED.

Table 11: Representation and selection criteria of females in AGED's carbon projects activities.

N°	Village	Number of women involved in the activities	Criteria for selecting females
01	Djigo	15	2 females' representatives for each neighborhood
02	Touka-Bayel	65	The choice was made with the different females' groups
03	Touka-Korno		Choice made within the
		10	neighborhoods (4 neighborhoods in the village)
04	Sambonaye	70	10 females per neighborhood
05	Mamassiol	70	Choice made according to the neighborhoods (3 neighborhoods in the village)
06	Lamdamaol	50	Choice made by neighborhood(10 neighborhoods)
07	Tialel	100	Selection based on the Females' availability in all the neighborhoods of the village
	Total	**380**	

	This shows a total commitment from communities to the works, a good participation of the community in the works, an appropriation of the project actions by communities and a sharing of information within communities. 4.3. The project does not jeopardize livelihood needs and priorities and does not reduce participants' food security (4.7; 7.1; 7.5) Benefits received by beneficiary communities are composed of: acquisition of a grain mill for females and purchase of 2 tricycles in Sambonay which normally generated 15,000 CFA francs/day before the measure banning circulation of tricycles according to the documentary film of Sambonay ONG AGED Plan Vivo; Forage provisions for animals, supply of non-timber forest products for human and animal consumption which provides income for the community in Djigo; The rehabilitated sites are attracting sites for animals at the beginning of the rainy season, a diversification of the communities' income sources, improvement of communities' living conditions through the rehabilitation of water facilities, grain mills, fruits from trees, shelters for open defecation needs in Touka Bayel. Communities are well trained in the topics regarding climate change (causes, consequences and mitigation measures), with a diversification of community's incomes through (acquisition of funds, sales of sites products in order to improve their living environment (rehabilitation of water facilities, sales and consumption of fruits from the site) in Touka Korno. For instance, in Touka Korno, the harvests of Balanites fruits, jujubes and gum Arabic contributed 350,000 francs to the village economy in 2021. A can of tomato used as a unit of measure for jujubes is sold at CFA F 400 and Balanites fruit at CFA F 300. Females and children organize the fruits harvesting on the sites under the watchful eye of an adult who received training on field. The CVD Chairman authorizes the harvesting of fruits. In Landamaol, 10 bags of 100kg of jujubes sold at F 100/can of tomato, 15 bags of Balanites aegyptiaca fruit also sold at F 100/can and 150 bags of Pilostigma reticulatum pods sold at F 3000/can, and Acacia tortilis pods were harvested within the sites for feeding the village's livestock. In Tialel, a 100 kg bag of Acacia tortilis pods is sold for CFA Francs 3,000-5,000 to buy food. These pods are also used locally to fatten animals for sale in order to buy food. The results of interviews with females from villages of the old and new carbon project sites indicate the impact of a project-induced plant regeneration on households' living conditions. These are improvements regarding household food (baobab leaves, Corchorus, wild fruits) and livestock food, generation of income through the sale of fruits from these plants, treatments against certain diseases such as ulcers (by the use of gum Arabic) and malaria using neem (*Azadirachta indica*, Table 12). The new species appeared, *Alysicarpus ovalifolius* and *Andropogon gayanus*, increase the amount of herbaceous material sold as forage and/or for producing seccos. Cassia obtusifolia is used for producing seccos and *Eragrostis tremula* for gathering brooms. All of these plants help to increase household income through their sales.

Table 12. Women's perception of the usefulness of species in developed plots in former AGED sites

Fulfulde name	Scientific name	Djigo	Sambonay	Touka Bayel	Touka Korno
Gaudi	*Acacinilotica*	*Livestock feed, Household health care*	Marketing of seeds health care		Health care
Tchiluki	*Acacia tortilis*	*Livestock feeding*			Use of fruitsfor livestock feeding
Tanni	*Balanites aegyptiaca*	*For consumption of its fruits, livestock feeding*	For food and fruits marketing and health care	For fruits consumption, leaves for livestock feeding	Fruits consumptionby households
Bokki	*Adansonia digitata*	*Household food, use of barks for livestock feed*		Preparation of sauces, use of baobab fruits for porridge and juices, barks for newborn and calf feeding	
Djabi	*Ziziphus mauritiana*	For food and fruits sales	For food and fruits sales	Fruit consumption, Shade that allows people to rest	(e.g., households' fruits consumption, and use of leaves for livestock

					feeding)
Gaudi haoussa	*Prosopis juliflora*	For livestock feeding, use of leaves for health care			Used for health care
Patuki	*Acacia laeta/senegal*		Produce gum for our consumption and for marketing		Used for livestock feeding
Demalian	*Azadirachtaindica*			Care especially against malaria	Used for health care
Tchaiki	*Faidherbia albida*			Fruits used for feeding animals, shade that allows people to rest	Use of leaves and fruits for food
Barkehi	*Piliostigma reticulatum*				Leaves are used for livestock feeding
Bulbi	*Acacia seyal*				Used for livestock feeding

to discuss the implementation of land management rules. Other meetings were organized by CVD to discuss what could be done with the incomes from the sales of Plan Vivo certificates (Figure 10).

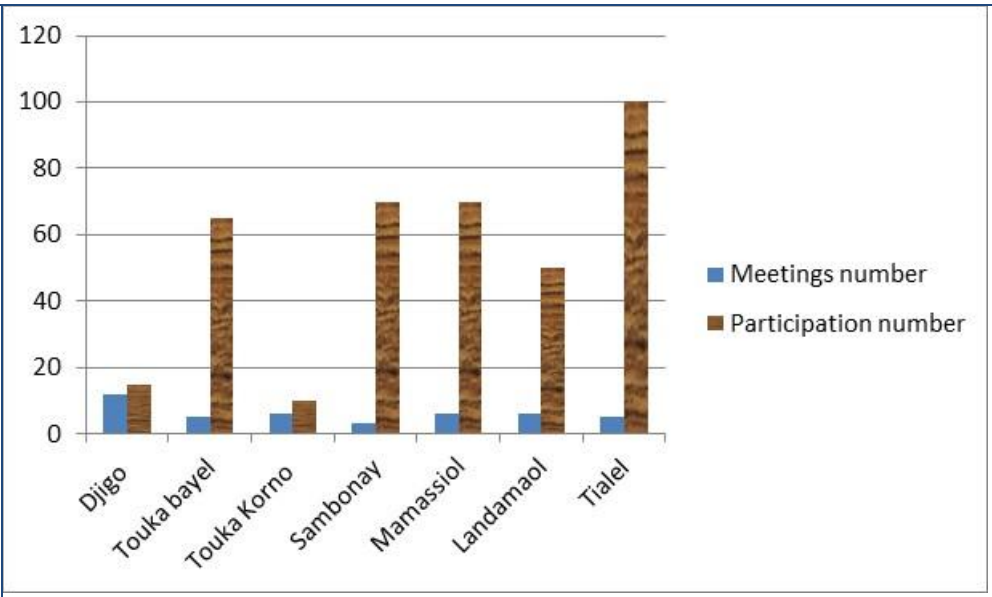

Figure 10. Number of site management committee meetings

As new villages were included in Plan Vivo projects, several meetings were held on the Plan Vivo recruitment process. Through local meetings, all community members were involved in the decision-making process regarding determination of performance indicators, benefit-sharing mechanism, and land use management. Communities decided how the sites should be managed based on local land charters. Discussion and sensitization sessions helped local communities understand the objectives of rehabilitating degraded pastures, to be involved in decision-making process, and to be responsible for selecting species and managing these sites.

Females participate in seed collection, reseeding and restored sites management (Figure 11).

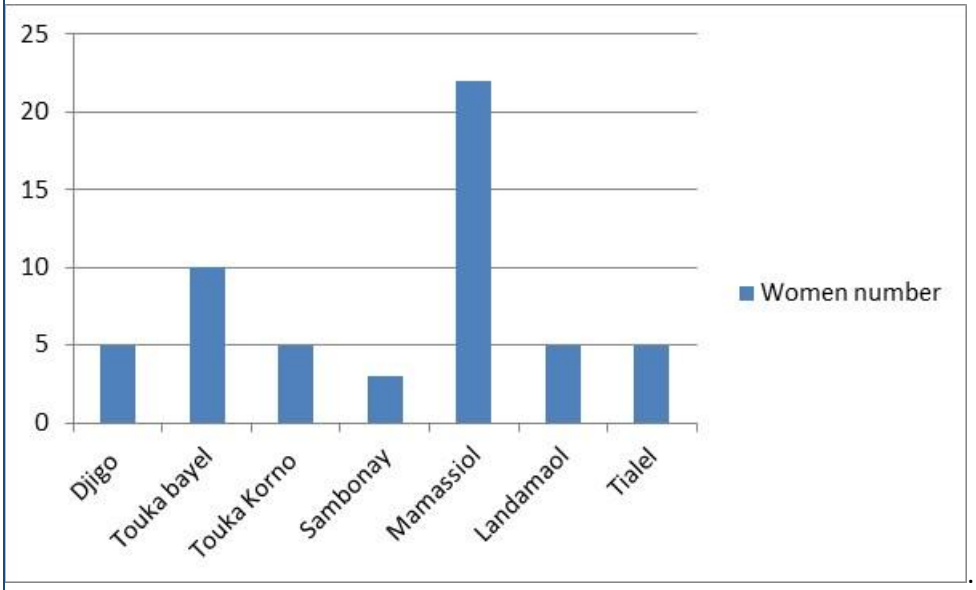

Figure 11. Number of women's meetings in villages

A strong grievance system is in place **(4.14)**

	The grievance settlement system consists of the establishment of a consultation framework and land charters. There are local land charters for the management of developed areas and CVDs are heavily involved in. When the village is unable to resolve a grievance, the inhabitants refer to the competent local structures such as the communal council and the administrative justice system. Communities believe the notion of conflict should be better defined. For them, in view of the lack of pastoral resources, tensions over access to pastures should not be considered as conflicts. Instead, conflicts should be considered as violations of the rules described in the local land charters that are part of Plan Vivo. The monitored results are estimated values based on discussions with communities, rather than values deriving from a registry system.		
B. Conformance	Yes [X]	No [ ]	N/A [ ]
C. Corrective Actions **(describe)**	*None*		
D. (Insert **Project Coordinator's Name)** **Response**	*(To be filled out by the Project Coordinator)*		
E. Status	*CLOSED*		

QUANTIFICATION AND MONITORING OF ECOSYSTEM SERVICES	
Requirement: The project generates real and additional ecosystem service benefits that are demonstrated through credible quantification and monitoring.	
Verification Questions: 2, 3 and 4	
5.1 Data sources used to quantify ecosystem services, including all default assumptions and factors, have been specified and updated to the possible extent with a justification for the reason they are appropriate **(5.1; 5.2)** 5.2 The project coordinator conducted accurate activities on the field to collect actual data and field measurements from project sites that have been or will be used to update the PDD and project technical specifications, including quantification of climate benefits **(5.3)** 5.3 A clear and consistent standard operating procedure (SOP), or equivalent, for remote sensing analysis has been developed by the project coordinator. The ecosystem services that form the basis of Plan Vivo project still holds an additional value. (**5.4).** 5.4 To avoid double counting of ecosystem services, the project's interventions are not used for any other project or initiative **(5.14)** 5.5 A surveillance plan has been properly implemented and a system for verifying its robustness is established, or **(5.9; 7.2.; 7.3)**: • Corrective actions and emergency plans are described when performance targets have not been reached • The validity and assumptions of the technical specifications have been properly tested • Communities were actively involved in surveillance activities • Surveillance was regularly shared and discussed with participants 5.3 **(5.9; 7.2.; 7.3):**	
A. Findings **(describe)**	**5.1.** Data sources used to quantify ecosystem services, including all default assumptions and factors, have been specified and updated to the possible extent with a justification for the reason they are appropriate **(5.1; 5.2)** According to the technical specifications, a minimum tree density of 260 woody plants/ha and a specific species diversity of 3 (min. 5 woody plants perspecies/ha) will provide at least 61 tCO2e after 30 years. Carbon sequestration through restoration of degraded pastures is estimated at 61 tCO2/ha for a 30-year crediting period, with a 20% risk margin. For instance, the total number of hectares that have adhered to the performance indicators defined in the PES agreements is 1,181 ha for former sites. Based on these figures: Carbon benefits were modeled according to CO2FIX version 3.2. The dCO2FIX simulation model was used to calculate carbon sequestration aerial and below-ground biomass in one-year time over the 30-year accounting period. The basic data are about wood density, surface volume, andallocation to the roots. Carbon stocks of living biomass are calculated using the following variables: growth and mortality. Carbon sequestration of the baseline scenario, as well as the expected leakage losses are assumed to be 0 tCO2 per hectare, while the risk buffer being 20%. The net carbon benefit over the 30-

year accounting period is estimated at 59 tCO2.

In 2018, for example, the Plan Vivo buffer allocation (tCO2): (61 tCO2/ha * 1,708 ha * 0.2/30 = 694 tCO2

The reduction in saleable emissions reached (tCO2): (61 tCO2/ha * 1,708 ha * 0.8/30 = 2778 tCO2

5.2. The project coordinator conducted ground accuracy activities to collect actual data and field measurements from project sites that have been or will be used to update the RFP and project technical specifications, including quantification of climate benefits **(5.3)**

Field measurements are carried out by technicians from ONG AGED with the support from farmers of each site to collect biological (forest inventory) and socio-economic (household surveys) data. The data collected is then processed by CO2Logic as a scientific support for the calculation of technical features (woody density and biodiversity, sequestered carbon rate,...).

Forest inventory techniques and socio-economic surveys took into account recommendations made in the evaluation report (Appendix 1).

Nevertheless, forestry and socio-economic inventory databases are not held by the project, which conducted their collection in the field in cooperation with beneficiary communities and the support of CO_2Logic for processing.

5.3. A clear and consistent standard operating procedure (SOP), or equivalent, for remote sensing analysis has been developed by the project coordinator. The ecosystem services that form the basis of the Plan Vivo project are still additional (**5.4).**

Severe droughts (in the 1970s and 1980s) have greatly reduced the population of trees. Nowadays, very few trees can be seen in this region. This baseline is the result of testimonies from local people, members of ONG AGED. In addition, remote sensing (satellite images and Google Earth) and tree counting on monitoring plots provide a very small difference in the number of trees(<10 trees) but recognizing the plants is impossible. Ecosystem services would not have existed without the project.

5.4. To avoid double counting of ecosystem services, project interventions arenot used for any other project or initiative **(5.14)**

Project sites, which are degraded pastures sites, have not been adversely altered (e.g., cleared of other vegetation or deforested), prior to the project activities start in order to increase payments for ecosystem services that participants or CVDs may claim.

The project coordinator is monitoring the risk of double counting in this project, specifically determining if any of the Plan Vivo of this project are counted in another project or initiative. Up to this moment, to the attention of the project coordinator, there are no other Plan Vivo

	projects or other registered GHG reduction projects in Burkina Faso claiming the carbon benefits of the Plan Vivo included in this project. The project coordinator is aware of other Plan Vivo projects within the Burkina Faso Sahel seeking registration at the Plan Vivo Foundation, but he is making every effort, in close collaboration with the other project coordinators (REACH Italia, A2N) to ensure that there is no overlapping. ONG AGED does not have relationships with other organizations in charge of assessing sequestered carbon stock and sales in the carbon market. 5.5. A monitoring plan has been properly implemented and a system forverifying its robustness is in place, **(5.9; 7.2.; 7.3)**: • Corrective actions and emergency plans are described when performance targets have not been reached • The validity and assumptions of the technical specifications have been properly tested • Communities were actively involved in surveillance activities • Surveillance was regularly shared and discussed with participants **(5.9; 7.2.; 7.3):** More than 5 violations of the local land management charter related to the pruning of woody branches for animals by foreign shepherds were recorded in April 2019 in Touka Bayel and Touka Korno. For the beneficiary communities, mitigation measures for these risks are a form of support to improve the functioning of surveillance committees and the sensitization of transhumant shepherds who roam the managed plots. Methods for participating in surveilling ecosystem services are: the site management committee and the facilitator regularly monitor the sites with the support of the environmental department on harvesting techniques and forest management and seeding techniques; the environmental department carries out unannounced monitoring trips. In Mamassiol, surveillance of developed areas is done on a weekly basis, by groups of women and men who do it in turn. Management of the site is the responsibility of the entire village through the establishment of a committee. In Landamaol, plots are managed by a management committee with the support of the entire village. In Tialel, managing the plots is entrusted to the different groups in the neighborhoods. Females participate in the sites management committee, namely 5 females in Djigo, 3 in Sambonay, 10 in Touka Bayel, 5 in Touka Korno. There are also 22 females on the management committee in Mamassiol, 5 in Landamaol and other 5 females in Tialel. The forum during which the design and progress of the project are periodically discussed with other participants and raising any questions or grievances with the project coordinator is the village general assembly. The General Assembly is organized by the Village Development Council (CVD). It is an opportunity to (i) make a review of monitoring of the sites and the discuss prospects for the future, (ii) discuss the smooth running

	of the Project's activities, (iii) drafting and monitoring the application of the management rules, which define prohibitions and sanctions to be considered in case of infringements. 5.5. Challenges in the implementation of the project 2016 The major difficulties in implementing activities in all the project sites remain the insecurity caused by HANIs, which does not facilitate the surveillance of the sites. Difficulties related to the management of natural resources between transhumant pastoralists who reside next to or on the sites and the village were reported in 2016. Indeed, some transhumant pastoralists did not always apply the rules defined in the Plan Vivo local land charter. In addition, the mowing of herbaceous forage by populations from neighboring villages for commercial purposes was also a source of conflict. Monitoring committees have strengthened their monitoring task. In the event of a breach of the rules of the local land charter, if the village land conciliation committee has not been able to resolve the situation, it forwards the unresolved conflict to the competent local authority. Other difficulties are related to the lack of water during dry season in Djigo, the refusal to allow the cutting of green wood and mowing of forage in Sambonay, difficulties for watering plants due to the high heat in Touka Bayel, and lack of materials for maintaining the spaces. On rehabilitated sites, half-moons where there are no trees were reseeded by direct seeding before the rainy season. The AGED project coordinator assisted communities in this activity. The number of conflicts reported and resolved in 2018 on developed sites are: 5 in Touka Bayel, also 5 in Touka Korno, 1 in Sambonaye. No conflict was reported in Djigo.		
B. Conformance	Yes [X]	No [ ]	N/A [ ]
C. CorrectiveActions (describe)	CAR 03. The concept of conflict should be better defined and monitored. In view of the lack of pastoral resources, tensions over access to pastures should not be considered as conflicts. Instead, conflicts should be considered as violations of the rules described in the local land charters that are part of Plan Vivo. It is better to talk about tensions or infringements.The PDD should be updated.		
D. (Insert Project Coordinator's Name) **Response**	The PDD will be updated to better clarify this issue.		
E. Status	*CLOSED*		

RISK MANAGEMENT	
Requirement: The project effectively manages risk throughout its design and implementation phases	
Verification Questions: 2 and 4	
6.1 Where leakage is likely to be significant, i.e. likely to reduce climate services by more that 5%, an approved approach has been used to monitor leakage and subtract actual leakage from climate services claimed, or as a minimum, a conservative estimation of likely leakage has been made and subsequently deducted from the climate services claimed (**6.1; 6.2)** 6.2 The level of risk buffer that has determined using an approved approach is adequate and is a minimum of 10% of climate services expected **(6.3)** 6.3 Does the project maintain a buffer account and is the cumulative total of credits deposited in the account equal to the total reported in the latest annual report? **(6.3)**	
A. Findings **(Describe)**	6.1. Where leakage is likely to be significant, i.e., likely to reduce climate services by more than 5%, an approved approach is used to control the leakage and deduct the actual leakage from claimed climate services, or at a minimum, a conservative estimate of possible leakage was made and reduced from the claimed climate services (6.1; 6.2) The risks of leakage in the region are firewood collection and livestock grazing. But the fact is that these risks are minimized because, after more than a decade of field work, it has been observed that communities do not collect wood from regenerated pieces of land. That is to say, that in the baseline scenario no timber was collected from degraded sites and the recovery of these degraded sites will not increase pressure in adjacent areas. The enforcement of local land charters will allow local communities to better manage their natural resources. The site monitoring plan put in place is based on the site management committee, whose mandate is the protection of sites in accordance with the consensual rules laid down in local land charters.

	6.2. The level of risk cushion determined using an approved approach is adequate and remains at a minimum of 10% of expected climate services (6.3) The cutting of wood and for-profit harvesting of fodder on sites is prohibited on the sites and the role of the committee was to ensure this. At least before the security situation escalates. The risk buffer is a portion of climate services provided to protect the project from unexpected reductions in carbon stocks or increases of emissions. A buffer of 20% has been applied and is subtracted from the total certificates issued. 6.3. Does the project maintain a buffer account and does the cumulative total of credits deposited in the account equal the total credits reported in the last annual report? (6.3) The project maintains a buffer account and the total cumulative credits deposited in the account is equal to the total been reported in the last annual report. The account is opened in the name of the village whose representatives are signatories in addition to the representatives of the ONG-AGED (Regional Head of Branch and a Field Technician).		
B. Conformance	Yes ☐ x	No ☐	N/A ☐
C. Corrective Actions (describe)	*None*		
D. (Insert Project Coordinator's Name) Respons e	*(To be filled out by the Project Coordinator)*		
E. Status	*CLOSED*		

PES AGREEMENT AND BENEFIT SHARING	
Requirement: The project equitably shares benefits and addresses ecosystem service benefitsthrough clear PES agreements with performance-based incentives.	
Verification Questions: 1, 2 and 6	
7.1. Procedures for reaching an agreement on PES with participants are properly applied (8.2) **7.2.** Participants enter into a PES agreement voluntarily and in accordance with the principle of free, prior and informed consent, in an appropriate language and format (8.3). PES agreements do not delete, diminish or threaten participants' land tenure (8.4). **7.3.** A fair and equitable benefit-sharing mechanism is established and has been agreed upon with the participation of affected communities, determining how PES funds will be distributed among participants (8,8; 8,9; 8,10) **7.4.** The project committed to deliver at least 60% on average of the proceeds from Plan Vivo certificate sales. Where less than 60% was delivered, the project justified why this 60% has not been reached (**8.12)**	
A. Findings **(describe)**	7.1. Procedures for reaching an agreement on PES with participants are properly applied (8.2) NGO AGED is in charge of the project implementation and community involvement, technical ecological monitoring through some partnerships, marketing and sales of Plan Vivo certificates, as well as management of PES funds and benefit sharing. PES contracts signed between AGED and the Village Development Councils (CVDs) are being properly executed according to the monitoring indicators based on density and specific diversity. 7.2. Participants enter into a PES agreement voluntarily and in accordance with the principle of free, prior and informed consent, in an appropriate language and format (8.3). PES agreements do not delete, diminish or threaten participants' land tenure (8.4) AGED has entered into PES agreement contracts with villages/CVDs. These contracts provide the basis for the transaction of climate services and specify the rights and responsibilities of the parties during the term of the contract. The voluntary PES agreement signed by CVDs specifies, among other things, the quantity of climate services negotiated based on technical specifications and performance-based milestone transactions. PES agreements have no impact on land tenure systems of the developed lands, which remain community pastures. 7.3. A fair and equitable benefit-sharing mechanism is established and has been agreed upon with the participation of affected communities, determining how PES funds will be distributed among participants (8.8; 8.9; 8.10) Through local meetings, all the members of each community have been involved in the decision-making process regarding the determination of performance indicators, benefit-sharing mechanism and land use management. The benefits will be paid into accounts they opened under the management of

the Village Development Council (2 members) and a member of the NGO.

The payment of the 4 Plan vivo of AGED villages was made in 2018 but without respecting the amounts according to the developed areas. The corrective action was conducted in 2020, through the sales of carbon credits.

Females participate in decision-making meetings on the investments to be made with the PES funds in Mamassiol. In Landamaol and Tialel, they suggested activities to be carried out with the funds.

Funds from the sale of carbon were used, for instance, to purchase water for participants during works sessions on the restored spaces, to support very poor households for care and purchasing materials (watering cans) for sites works in Mamassiol. These funds were distributed among the different neighborhoods in Landamaol, and they were used to repair the water facilities and develop a rice-growing plain in Tialel according to females from this locality.

Females benefit from payments for ecosystem services in the village through support to very poor households for care, funding for small-scale females' activities in Landamaol and investments that made for rice cultivation in Tialel.

To improve funds management, females are suggesting to fund:

- small ruminants fattening for the village and construction of a *bouli* for market gardening in Mamassiol,
- small ruminants fattening and schooling of our children in Landamaol,
- financing small ruminant fattening and income-generating activities in Tialel.

7.4. The project committed to deliver at least 60% on average of the proceeds from Plan Vivo certificate sales. Where less than 60% was delivered, the project justified why this 60% has not been reached (**8.12)**

After the sale of carbon credits, AGED retains 40% of the amounts and distributes the 60% among the villages according to the certificates obtained.

Table 6: Total Plan Vivo Carbon Sales by AGED in CFA francs

Year	2016	2017	2018	Total général
Total sales	8 825 245	4 263 721	13 558 631	26 647 597
AGED amount	3 530 098	1 705 488	5 423 452	10 659 038
Amount village 60%	5 295 147	2 558 233	8 135 179	15 988 559

B. Compliance	Yes	No	N/A
	X		

C. Corrective Actions **(describe)**	OBS 01. The rate of regeneration of woody plants induced by the restoration of degraded soils can be improved by innovative technologies resulting from scientific research. This can increase the survival and growth rate of regenerated trees. OBS 02. In view of the context of insecurity, it was not possible to measure socio- economic impacts using focus group technique on community changes and solutions to mitigate the negative impacts of the project. It was not yet possible to measure impacts on biodiversity in terms of the number of tree species and the number of herbaceous species on recovered sites and the number of mammal species during the past year on the recovered pastures sites. However, there is no doubt that biodiversity indicators are being met. OBS 03. Corrections are needed in the annual reports of Plan vivo projects. In the 2016 report, the species *Leptadenia hastata* was considered a woody plant and a plant named Leptadenia a single word probably *Leptadenia pyrotechnica* (confirmed by photo) was classified as a herbaceous plant in Appendix 5 of the annual report. The spelling and syntax of the scientific names of plants do not conform to international standards. Thus, *Tribulus terrestris* and not Tribulis, *Ziziphus mauritiana* and not Zizyphus Mauritiana, *Acacia seyal* and not Acaca seyel, ect. A plant designated Perriatum in the table of the 2016-2018 activities report and not using a photo does not allow to identify the plant, nor to certify on its existence in the Sahel. Furthermore, no Perriatum genus has been identified in the country's flora. The Plan Vivo 2018-2019 annual report of Rehabilitation and sustainable management of degraded pastures by AGED in the Sahel region of Burkina Faso is incomplete.
D. (Insert Project Coordinator's Name) **Response**	*(To be filled out by the Project Coordinator)*
E. Status	*Closed*

Audit Plan

Timetable for the verification of Carbon Credit projects coordinated by the NGOs AGED and REACH Italia

N	Description	Days	November 22				December 22				November 25				December 25				January 25			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	Communication/Negotiation with the Plan Vivo Foundation	1																				
2	Elaboration of the technical and financial offer	1																				
3	Exploitation of documentation	4																				
4	Collection of information in the field	7																				
5	Analysis of the information collected	7																				
6	Drafting of provisional reports (AGED and REACH Italia)	6																				
7	Restitution to the Plan Vivo Foundation Restitution to NGOs and Project BKF/024	1																				
8	Restitution to the Plan Vivo	1																				
9	Finalization of reports (AGED and REACH Italia)	35																				
	Total days	**63**																				

ANNEX 1

The Verifier: (Name in Capital Letters)
Signature: GANABA Souleymane  **Date: 14th February, 2025**

Appendix 1. Follow-up on the implementation of recommendations from the 2016 validation report

Table 13. Summary of AGED's major and minor corrective actions

Theme	Major CARs	Minor CARs	Observations	Action conducted
Governance		Accountability and	Better coordination	Bank account open in

		organization of Dori Branch Office on the management of the project and follow-up of the sites	of activitiesbetween the Head Office of the Project and branch of Dori	Dori
Carbon		Reseeding of some empty cavities insome parts of thetreated sites Inventory method to be harmonizedwith that used byNGOs Recommended period for annual woody inventory between Octoberand December by 3 persons (one for noting, and the other ones to measure)	Sowingwoody seeds with a pick bytwo persons for 4 ha/day Linear transects joining the diagonals Example: Plots distributed inthe center and at the sides of the developedsite	Woody reseeding of empty bowls Change of Inventory method carried out
Means of subsistence	To define relevant socio-economic monitoring indicators	Negative projectimpacts: Returning of wild carnivorous animals, causing injuries to animals at sites.	Indicators of improvement: number of animals by type, calving rate of livestock, number of emigration, number of NRM conflicts...	The socio-economic indicators have been revised slightly on the basis of the evaluation carried out during the first monitoring period.

			Returning of wild carnivores (jackals, hyenas) can reduce the number of livestock, Number of animals injured/year in newly developed sitesat the beginning of rainy seasons	Nevertheless, the survey and the choice of Economic indicators will be reviewed at the course of the second follow-upperiod, as well as the retroactive baseline survey

Appendix 2. Photographic plates

Photo 4. Savings booklet of the Réseau des Caisses Populaires de Dori for PSE account of the village of Mamassiol

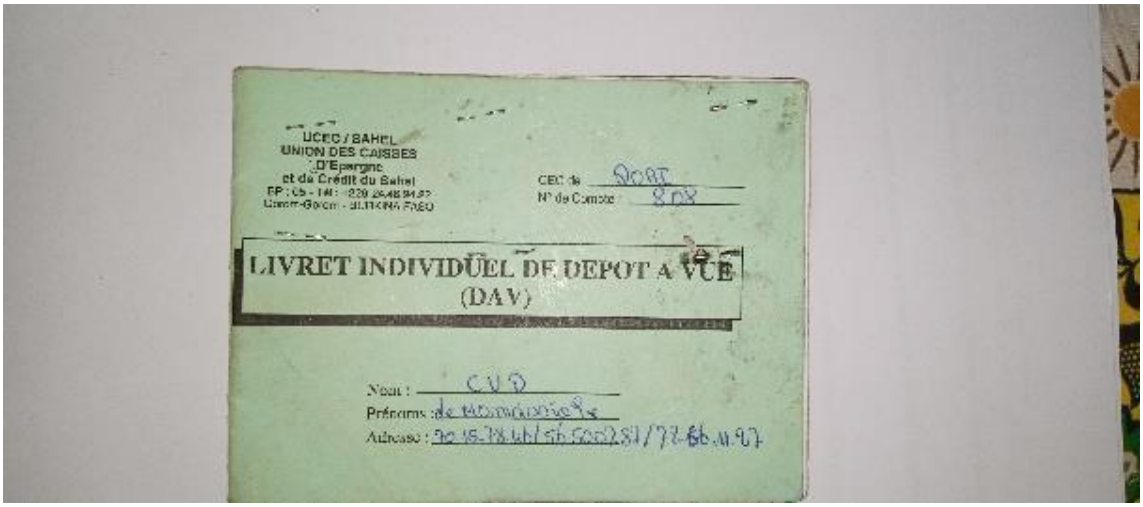

Photo 5. Caisse Populaire de Dori (CPD), Savings booklet for PSE account of the village of Mamassiol

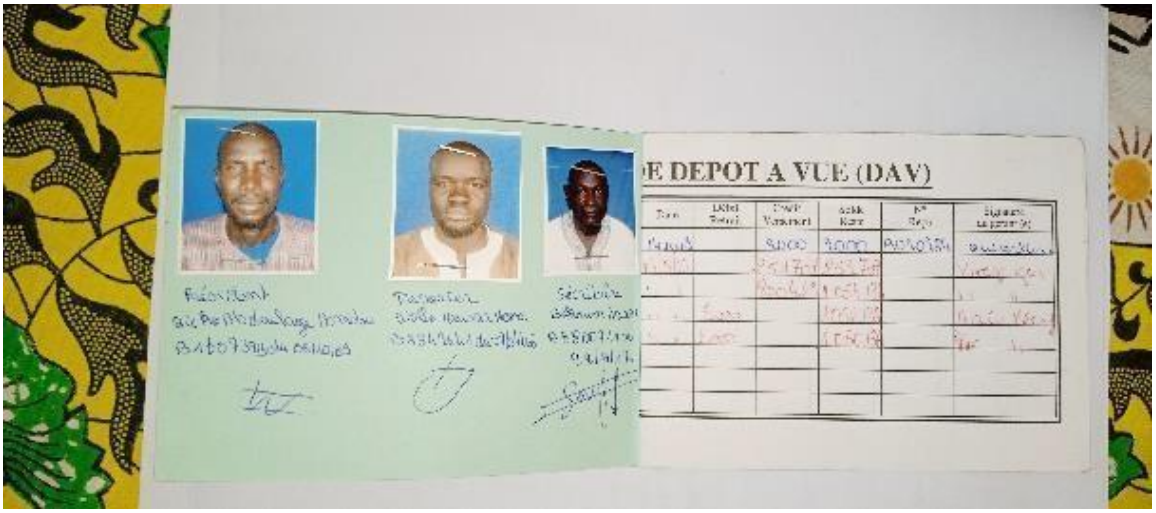

Photo 6. CVD Board signing the CPD savings booklet for PSE account of the village of Mamassiol

Photo 7. Male delegation of the PVC from the village of Touka Bayel

Photo 8. Females' delegation of the PVC from the village of Touka Bayel

Photo 9. Females' delegation of the PVC from Sambonay village

Photo 10. Males' delegation of the PVC from the village of Sambonay

Photo 11. Males' delegation of the PVC from the village of Touka Korno

Photo 12. Females' delegation of the PVC from the village of Touka Korno

Photo 13. Males' delegation of the PVC from the village of Djigo

Photo 14. Males' delegation of the PVC from the village of Djigo

Photo 15. Males' delegation of the PVC from the village of Mamassiol

Photo 16. Females' delegation of the PVC from the village of Mamassiol

Photo 17. Males' delegation of the PVC from Landamoal village

Photo 18. Females' delegation of the PVC from the village of Landamaol

Photo 19. Males' delegation of the PVC from the village of Tialel

Photo 20. Females' delegation of the PVC from the village of Tialel

Appendix 4. Questionnaires for interviews

Questionnaire 1. Discussions with beneficiary communities

Name of the village : TIALEL

Name of facilitator/note taker : BARRY Hamidou

Venue : meeting room of the High Commission of Dori

The questionnaire sent to the beneficiary communities of the Plan Vivo project focused the following:

1. Beneficiaries' understanding, awareness, commitment and perceptions on Plan Vivo project.
2. Cross-checking information received from communities with the ones figuring out in the annual reports of the NGOs (AGED and REACH) in charge of implementing the projects.
3. Beneficiary communities' perceptions on climate benefit, changes in condition(plant density) and biodiversity on the sites.
4. Communities' perception on the impact of plant regeneration and biodiversity on their living conditions.
5. Verification of the validity of PES agreements, the effectiveness of PES funds payments to communities, and how these funds were used by these communities.

1. Beneficiaries' understanding, awareness, commitment and perceptions on Plan Vivo project.

- 1.1. What is your understanding (of problems to be solved through the actions) of Plan Vivo project beneficiaries?
  - Degradation of land
  - Community's commitment
  -

- 1.2 What is the awareness (experience gained through the implementation of actions) of beneficiaries?
  - Knowledge of seeding techniques
  - Site management
  - Strengthening social cohesion in the village

- 1.3. Participation of beneficiary communities' actors
- a. What are sensitizations conducted for participation in the project actions?
  - social cohesion,
  - improvement of people and animals' living conditions

- b. How are the participants in the project actions selected?
  - honesty
  - love at work
  - integrity

c. How are barriers to the participation of vulnerable groups identified?
- all groups participate in the work

d. How are measures to encourage participation defined and taken?
- awareness on the value of RTDs,

e. What is the level of community's commitment?
- total commitment from the community

d. Is there a forum to periodically discuss the design and progress of the project with other participants and raise any questions or grievances with the project coordinator?
Nature of the meeting: Evaluation Composition:
village community + project agent

Occurrence regularity: quarterly
Number of meetings organized (year) ? 04

f. Is there a grievance system in place? yes /_/ no /x_/ Number of cases (year)?

- 1.5. What are beneficiaries' perceptions (how are the effects of the project felt) ?
  - Existence of forage for animals,
  - Appearance of new forest species (djiguilé, legel noudji,
  -

2.1. Information from communities
What are the activities carried out by the project per year?
-RTD (2015)
- Seeding 2015
- Training of beneficiaries
- Construction of a pastoral castle (2021) How

do you participate in the project actions?

- Physical participation,
- Bringing one's own equipment to work

How is the monitoring of developed resources conducted?
- Site Observations

What are the measures to protect the resources generated by development works?
- Elaboration of management rules,

- Evaluation of management rules

3. Beneficiary communities' perceptions on climate benefit, changes in condition (plant density) and biodiversity on the sites.

- 3.1 What are the perceptions from beneficiary communities on climate benefits of the project?
  - Vegetation of the site (shade and forage)
  -
  - Building a pastoral castle

- 3.2. What are the perceptions from beneficiary communities on the changes in condition (plant density) due to the project?
  - Good tree density

- 3.3. What are the perceptions of the beneficiary communities on biodiversity on sites induced by the project?
  - We have not for the moment noticed the appearance of wild animals on the site

  Is there a system in place to accurately record and verify the location, boundaries and size ofeach plan vivo plot? Yes / x/ No
  / / Please explain:

Communities' perception on the impact of plant regeneration and biodiversity on their living conditions.

4.1. What is the communities' perception of the impact of project-induced plantregeneration on their living conditions?

Nature of regenerated species? kolli, prosopus, raddiana, kogole, tchamé, goungoume, woumore

Survival: existing plants show good physiognomy

Growth: growth is veryfast

- 4.2. What is the communities' perception of the impact of biodiversity induced by the project on their living conditions?

  Importance (use) of planted species
  - Erosion control,
  - Animal forage,
  - Use as a hiding place for relieving oneself (the immediate vicinity of the site)
  - Medical aspects

- Males' food

Importance (uses) of regenerated species
- Erosion control,
- Animal fodder,
- Use as a hiding place for relieving oneself (the immediate vicinity of the site)
- Medical
- Men's food

- What is the communities' perception of the impact on the needs and livelihood priorities?

Nature of needs met:
- Traditional Pharmacopoeia
- Forage for animals
- Food for humans
- Improve the climate
-

Nature of unmet needs:
- Traditional Pharmacopoeia
- Forage for animals
- Food for humans
- Improve the climate

- What is the community's perception of the impact on food security?
  - Sales of Acacia raddiana pods (bag of 100 kg 3000 - 5000 F) to buy food
  - Fattening and then selling animals to buy food

Food needs solved by developments:
- Purchase of food

Improvement Needs:
- Acquisition of equipment (plows,)
- Rehabilitation needs for recovered sites

- Methods of participation in ecosystem services surveillance (sharing and discussion with participants)?

How ecosystem services are measured:

- Tree inventory
- Site monitoring

Forms of participation of beneficiary populations:

- Community,

- Technical department

Nature of discussion and idea-sharing meetings:

- Activity report

Verification of the validity of PES agreements, the effectiveness of PES funds payments to communities, and how these funds were used by these communities.

- 5.1. Verification of the PES agreements validity,

Year	Quantity	Selling price	Community share	Observations
2016				
2017				
2018				

What are the sales figures?

How are resources allocated in the interest of target groups?

2019				
2020				
2021				
2022			670339	

- Transfer to CVD account

- 5.2. Verification of the effectiveness of payments of PES funds to communities
  Evidence: transfer made

- 5.3. Verification of how these funds were used by them
  Evidence:
  - Organization of community meals

Project: AGED /_X_/ or REACH Italia: / /

Date/17/11/2022/ and time: /12H15 to 13H35/

Number of participants: total number of males /_05 / and females /_____/

Participants' Selection Criteria:

Village concerned: TIALEL

Number of participants: Males /05_/ Female /_/ Focus Group /_/ Individual interview /_/

List of participants to discussions:

N°	Name and surnames	Phone	Function
1.	Dicko Sadou Hamidou	66.67.20.02	Member
2.	Dicko Boukary Mamoudou	75.00.34.30	Secretary
3.	Dicko Boukary	75.44.61.10	Site Supervisor
4.	Dicko Amadou Mamoudou Bila	56.06.22.79	Training/Mobilization Manager
5.	Dicko Youssoufa Hama	76.44.97.32	CVD Chairman

Facilitator's notes on the quality of the method and the meeting

- Non-compliance with slope during plowing

List of meeting achievements (deliverables)

:

Questionnaire 2. Discussions with females from beneficiary communities

Village name: DJIGO

facilitator/note taker's name: CISSE ABDOUL MOUMOUNIVenue

and date of meeting: DORI on 16/11/2022

Level of females' involvement

How many females in the village participate in the carbon project activities?

*15 females

How are these females who participate in the activities selected?

*The selection was made per neighborhood (2 female representatives for each neighborhood)

How many sharing and discussion meetings do females participate in per year?

*12, i.e., one meeting per month

Which ethnic groups are not participating in project activities in the village?

*All ethnic groups are represented (3)

1. Community females' perception of the impact of plant regeneration and biodiversity ontheir living conditions.

- 4.1. What is the females' perception about the impact of developments on village pastures?

  *Developments have improved pastures in the village
- What plants have you planted or seeded within the developed plots?
  *GAOUDI
  *TCHILOUKI
  *TANE
  *BAOBAB
  *DJANBI

*GAOUDEL HAOUSSA

- Which plants germinate the most?
*TCHILOUDE
*GAOUDE
*TANE

- Which plants are more resistant to drought?
*TCHILOUKI
*TANE
*GAOUDI
*BAOBAB
- Which plants are more resistant to winter floods?
*GAOUDEL HAOUSSA

- What are the impacts of project-induced plant regeneration on your living conditions?
*Livestock feeding
*Household food
- What plants regenerate naturally within the plots?
-TANE
-BOULBE
-GAOUDE
-
-
- How are developed plots managed?

* The whole village is responsible for the management of the plots, under the leadership of the management committee
- Are there some females in the management committees of developed plots? If no, why?
*yes, 5 females

- What are the difficulties in managing the plots?
*lack of water at the beginning of the project

- What plants in the developed plots are useful to you? Specify their roles
- *GAOUDI (livestock feeding, household health care)
- *TCHILOUDE (livestock feeding)
- *TANE (fruits consumption, livestock feeding)
- *BAOBAB (household food, use of bark t o feed the livestock
- *DJANBI (food and selling fruits)
- *GAOUDEL HAOUSSA (livestock feeding, use of leaves for healthcare)

Community females' perception about payment for ecosystem services funds.

- Are you aware of the funds that are transferred by the project to the village?
  *yes

- How are you involved in the management of the received funds?
  *Females propose activities to be carried out with these funds
- What are the funds earned from carbon sales used for?

  *repairing a water facility
  *rehabilitation of the school
  *rehabilitation of the mosque
  *Purchase of mats for the mosque
  *support to vulnerable persons for their health care.

- How do females benefit from payments for ecosystem services in the village?

  *Females have benefited a developed site for gardening products
  What proposals do you have to improve funds management of the funds
  *installation of a mill
  *Funding females' income-generating activities

- What is the perception of females from communities about the impact on livelihood needs and priorities?

  What needs are satisfied by carbon project?
  *improving access to water
  *improving household and livestock nutrition

  What needs are not satisfied by carbon project?
  *funding income-generating activities

- What is the perception of females from communities about the impact on food security?

  What food needs are solved by the developments made by the project:
  *household food needs
  *livestock food needs

Perception of females from communities about governance of carbon project

How women participate in ecosystem service measurements (inventory):

N°	NAME	FIRST NAMES	FUNCTON	TEL
01	DICKO	BALKISSA HAMIDOU		54134739
02	DICKO	AISSATOU SEYDOU	Member APE board	02950394
03	DICKO	FADIMA ATIKOU		75486715
04	DICKO	AISSATOU YOUSSOUFI		63451578

What are the benefits of implementing management rules for developed plots?

*The rules have enabled to secure the sites,

*the rules have favored a good growth for trees

What are the drawbacks of implementing management rules for developed plots?

*there are no drawbacks

What are the difficulties in applying plots management rules?

*the rules are difficulties due to the security situation in applying the rules

How do women participate in resolution of conflicts related to plots management?

Which relationship exist between the community, neighboring villages and transhumant shepherds since the establishment of the developed plots?

*We have good relations with the transhumant shepherds and neighboring villages. How can

these relationships be improved?

*raising communities' awareness about good practices in the management of these areas.

Other elements.

*we really want support in funding our income-generating activities