Esso Exploration & Production Chad Inc.

Site Specific Plan
Moundouli Village

Land Use Mitigation Action Plan

Prepared by the EMP Department
February 2014

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List of Acronyms & Terms Used in this Report

BBS	Basic Business Skills Training
CRCP	Chad Resettlement and Compensation Plan
CdM	Household Chief (Chef de Ménage)
EEPCI	Esso Exploration & Production Chad Inc (the Project)
Eligible	Generic term to designate an individual that may be eligible to the EMP Resettlement Program.
EMP	Environmental Management Plan
EMP-IS	EMP Information System: manages Land Acquisition, Socioeconomic and Land return data.
ECMG	External Compliance Monitoring Group
HH	Household
HHH	Head of Household
HHM	Household Member. Include the CdM and all it dependents, regardless their age.
IFC	International Finance Corporation
LCC	Local Community Contact
MARP	Participatory Rural Assessment process
NGO	Non Governmental Organization
Potential Eligible	Individual that may be eligible to the EMP Resettlement Program. Analysis must be completed.
Project Footprint	Total area occupied by the Project at a given time (e.g. Compensated but not returned land)
True Eligible	Individual eligible to the EMP Resettlement Program. Individual whose eligibility established initially through the declarative process was confirmed using the VLUS.
VLUS	Village Land Use Survey previously called Cadastral survey. Refer to the measurement of every field, fallow & house of households.
WBG	World Bank Group
WHHH	Women head of household

1. Introduction

While the Village Land Use Survey (VLUS) data has allowed us to gain a very good understanding of the processes taking place in the field, incorporating data from the Synergy Team, the impact surveys and the land return surveys allow us to gain a real time perspective of the effects the Project is having on communities and individuals.

Previously developed tools, such as the Site Specific Plan (SSP), gave us a fairly detailed view of the communities which are impacted by the Project. We now find that such tools are difficult to update and review in view of the masses of information they contain. Often the SSP incorporated too much information and much of this information was not necessarily relevant to the ultimate objective. The purpose of a Site Specific Plan (SSP) is to clearly define the village's situation and identify a set of measures that mitigate the specific issues the village's population is encountering within their own village area. After having identified the issues which are specific to a village, the plan will consolidate all applicable livelihood restoration tactics into a strategy that will lead the restoration of its livelihood.

Moundouli (Miladi canton) is the latest of 20 OFDA villages to be surveyed. While it was affected only in a limited fashion by the development of the oil fields in the initial stages of the drilling program, it was targeted in 2005 following the identification of a satellite oil field known as Nya-Moundouli. A significant number of wells and service facilities have since been established in this community.

As of September 30th, 2013 these facilities occupied 44.9 ha out of a village land area of about 1151.4 ha, or about 3.9% of the village's area. Although the Project has occupied 125 ha of land at one time or another, the rehabilitation and return of unneeded land has made it possible to maintain the footprint at as a low level as possible. At present Moundouli is considered to be a moderately impacted village in terms of project land use. These impacts could include:

- Reduced pool of land available for agricultural use
- Limited access to bush resources
- Depletion of bush resources
- Shortened fallow availability

In addition to having received a community compensation package, in the form of a three room school and water well in 2009, this community had previously received a number of donations in 2004 (two 3 class room buildings, a well and a latrine). As such the purpose of Moundouli's SSP is to establish whether the village as a whole has been able to offset its

land losses to the Project in view of the compensation received by individual land users (in the form of compensation and resettlement training) and the community as a whole. The SSP additionally evaluates the land-holding situation of all the households (HH) in the village to judge whether the village as a whole is at risk and, if so, what actions would be efficacious.

The proposed mitigations measures must be feasible, using resources that are available to the project and within the community, emphasizing the enhancement of the knowledge and capabilities of its residents. The plan will consolidate all applicable livelihood restoration tactics into a strategy that will lead to livelihood restoration in this impacted village.

2. Moundouli's population at a glance

Moundouli (Miladi canton) is the latest of 20 villages to be surveyed using the Village Land Use Survey technique. With a total area of only 1151 ha, Moundouli is one of the middle sized villages surveyed, in fact it ranks 15th out of 28 in terms of area. It has a relatively high population density with 178 households and 1084 residents. The village has been impacted by the development of the satellite oil field known as Nya-Moundouli.

Table 1: Distribution of Households and Individuals by Eligibility Factor

Range	Nbr HH	Nbr Individual
0.000 – 0.667	27 (15 %)	190 (18 %)
0.668 – 0.999	22 (12 %)	156 (14 %)
1.000 – 2.499	85 (48 %)	541 (50 %)
2.5000 - ……..	44 (25 %)	197 (18 %)
Total	178 (100 %)	1084 (100 %)

With an average household size of 6.1 persons and an average population age of 19, it is made-up of slightly more households than the other villages of the region (OFDA average is 5.5 persons per HH (see annex 3)). Some notable facts can nonetheless be outlined:

- 13.5% of households are headed by women. This is lower than what is found in comparable villages. The average number of women headed households in big villages (more than 150 households) is over 20 %.
- 167 individuals or 15.4% of the population have received a form of compensation at one time or another. This is much lower than the situation in the OFDA region where about 70% individuals have received a form of compensation. This probably reflects the fact that the development has been concentrated in a relatively small part of the village affecting only a small number of relatively large land owners.
- 92 % of the area of the village is either actively cultivated or being fallowed. Although residents of this village farm very little land outside its limits, they still have access to 11.83 cordes or 1.93 cordes of farm land per family member.

- With 12.6 % (137 individuals) of its population which is made up of non-viable project affected individuals, this village is considered to be an approaching high impact category for the socio-economic criteria.

If one considers the fact that 12.6 % (137 individuals) of the population was identified as project affected non-viable. The analysis conducted showed that Moundouli is in the **approaching high impact category** in terms of the social criterion and in the **moderate impact category** in terms of the land take criterion.

Table 2: Number of Non-viable households as per declarative vs VLUS data

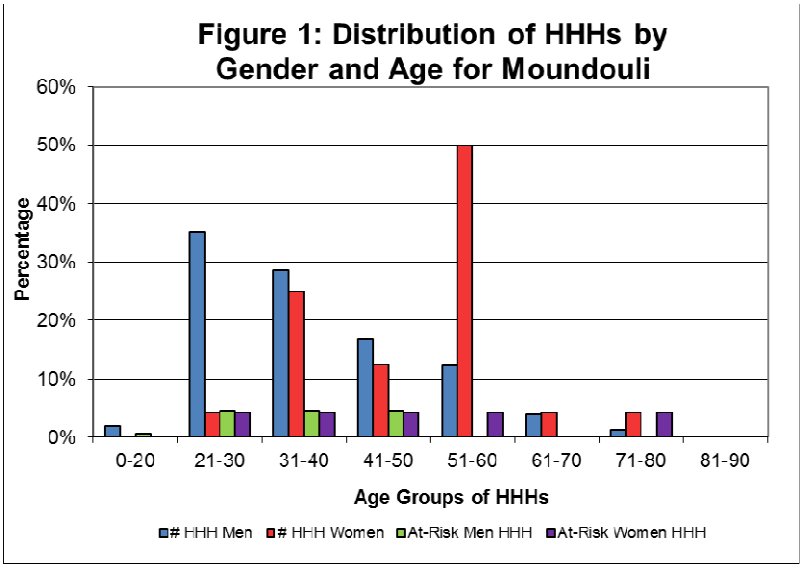
	Total non-viable	Non-viable project affected
Declarative data	N/A	N/A
VLUS data	15.2%	8.4%

From table 1 (page 5), we can note that more than 85% of Moundouli's households are viable, in fact the non-viable category is made-up of 27 households (15 households non-viable project affected).

In order to ascertain whether any vulnerable groups (youngsters, elderly villagers and women) are put at any particular risk/disadvantage by the Project infill drilling program we must:

- Identify the most vulnerable groups (Elderly villagers, youngsters and women).
- Evaluate whether any of the groups are facing an inappropriate portion of the burden.

While most households are headed by men (86.5% of cases), women are far more present as household heads when they are older (starting in their forties) (Figure 1). Women are the household head in 58% of cases where the HHH is more than 50 years old. This would appear to result from the fact that some widows retain control of a sufficient asset base to support their family following the death of the spouse or that some women accumulated sufficient wealth/resources to have gained their autonomy and have separated from their spouse.

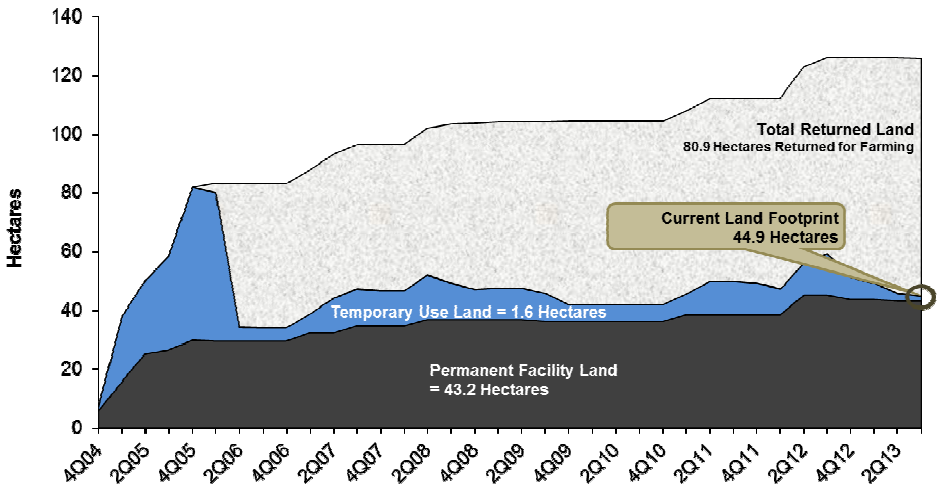


While we normally find that the proportion of at risk household tends to correspond to the gender distribution, in Moundouli WHHH (Women Head of Household) represent 18% of at risk HHs while

representing only 13.5% of households. Overall, 14% of men headed households are at risk (22/154) while it is 21% for households headed by women (5/24). MHHH would thus appear to have a small advantage and to be in general better off. Furthermore in most communities we find that non-viable or at-risk households are mainly headed by young adults this is not the case in Moundouli where the distribution is fairly even amongst the various age groups.

3. The Project's Footprint at the Village Level

FIGURE 2: LAND USE STATUS ON THE VILLAGE OF MOUNDOULI



While the original land take was relatively important (about 82 ha), emphasis on land return limited the project's footprint to about 48 ha. New activities held in 2011-2012 on the Nya-Moundouli satellite field resulted in a small increase in the project's footprint. If we do not account for recent land return the project has touched 125.8 ha representing 10.9 % of the village's area. 80.9 ha have since been returned or 64% of the original land-take. At present the Project's land take stands at 44.9 ha or 3.9 % of the village area.

It must be noted that the initial community compensation (three room school and a water well built in 2009) was a compensation for the original land take, a number of additional land takes have taken place since then. The above figure nonetheless indicates that a significant amount of land has been returned during the latter part of 2011 and the first half of 2012. From this illustration we can conclude that the Project's net footprint has grown slightly over the last two years, the project has had a recurring impact on Moundouli.

From table 3 (page 8), we further learn that all the land taken by the project and returned since then, was returned with some form of restriction as to the use to which it can be put. This indicates that even when land has been and will be returned some residual effects may remain.

Table 3: Compensated and Returned Land by Land Use and Facility Type

	Total area (hectares)		
Land use type	Compensated	Returned	
Permanent with public access	28.7	0.2	1 %
Permanent with no Public access	18.2	3.4	19 %
Sub-Total Permanent	**46.9**	**3.6**	**8 %**
Temporary returned without restriction	0.8	0.8	100 %
Temporary returned with restriction	78.2	76.5	98 %
Sub-Total Temporary	**79.0**	**77.3**	**98 %**
Grand Total	**125.9**	**80.9**	**64 %**

- The column “total areas in hectares: compensated” shows the total area compensated since the project started up to the end of the quarter covered in this report.
- Total areas in hectares: returned” shows the total area returned since the project started up to the end of the quarter covered in this report.

4. The Project and the Environment of Moundouli

Groundwater Quality Monitoring Data

Over years EEPCI has established a network of community level groundwater quality monitoring stations.

This network is comprised of:

- EEPCI owned and operated groundwater monitoring wells (piezometer) built specifically for the purpose of sampling ground water quality and collecting data on the level of the aquifers.
- Community owned surface or traditional wells. Communities allow EEPCI to monitor the quality of the water.

For the village of Moundouli the data is collected from a traditional well. While the water does not breach the standards for most indicators there may be a significant concern with the fecal coliform count. This would suggest that the water has been contaminated by either a poorly constructed water wells or by animal manure through runoff. Nonetheless these results indicate that the water has not been affected by the activities of the Project (see Table 4 on page 9). In fact, the results indicate that the presence of monitored chemical compounds is often times more than 100 times smaller than the actual applicable norms.

Table 4: Water quality monitoring data for the village of Moundouli

Results	Cond (µS/cm)	PH	Turb. (NTU)	Cl^-	SO_4^{2-}	NO_3^-- N	NO_2^-- N	NH_3-N	Fe	Mn	*fecal coliforms*	TPH
Q3-2013	170.6	6.3	3.62	0.5	0	0.6	0.002	0.01	0.006	0.1	TNTC	0
Standard		6.5 - 8.5	5	250	250	50	3	1.5	0.3	0.5	OMPN/ 100ml	

NT: Not Tested

N/D: Not detected

TNTC: Too numerous to count

Air Quality Monitoring Data

In accordance with schedule 17 of the Credit Coordination Agreement and Exxon Mobil's Environemntal Standards, there is a continuous monitoring of ambient air for nitrogen oxides (NO_2) and monitoring of sulfur dioxides (SO_2) on a quarterly basis.

No predicted location for air monitoring is present in Moundouli, as per the air modeling program. Most relevant data to use are those for Ngalaba which is located between the most probable source of contaminants (Miandoum gathering station) and Moundouli. Moundouli is located 31.5 km north-west from Miandoum Gathering Station.

Ambient air data collected shows the following:

- Average of monthly levels of emission (Q4-2011) at the stack for NO_2 varies between 2.68 and 8.3 micro grams per cubic meter of air (ug/m^3), or at worst 12 times less than the maximum allowable of 100 ug/m^3.
- Average monthly levels of emission at the stack for SO_2 varies between 1.64 and 8.68 micro grams per cubic meter of air (ug/m^3), or at worst 9 times less than the maximum allowable of 80 ug/m^3.

From the above, we can conclude that the project has no significant if any detrimental impact on both the air and water quality of the village of Moundouli.

5. Mitigation of the effect of the Project on Impacted Individuals

As discussed in the previous section, the sensitivity of HHs and their heads to a land take depends to a large extent on other changes which may be taking place within their households. Each household will change over time through the addition or removal of HH members, through traditional land sharing practices which result in either the reduction or expansion of the land base available to the household and finally because of the impacts of the Project through either the land take or land return processes.

However, we must also understand that with the advent of the infill drilling program, a small number of HHs may have a large number of interactions with the Project. At this level it must be noted that interactions do not necessarily mean land loss to the Project. In fact, the majority of interactions that have taken place in the last years take the form of land return for the benefit of these households and of the community. Some specific process improvements are in progress to address the needs of currently at risk or marginal HHs that had frequent interactions with the Project.

In order to ensure that households can withstand the impact of the land takes while awaiting an eventual land return, a number of programs have been establish as per the EMP.

The first of these programs is the cash or in kind compensation. In this case, the land user or declared user is compensated for his land effort. This first level of compensation is based on the area lost to the project and takes the form of a monetary compensation.

Table 5: Compensated Individuals and Amounts

Year	Compensation Payment (XAF)	# of Compensated Individuals	Cumul Compensated Individuals*
1998-2000	0	0	0
2001	505,250	3	3
2002	0	0	3
2003	3,829,000	19	20
2004	460,000	5	25
2005	118,235,500	134	146
2006	2,495,500	10	147
2007	11,721,000	37	162
2008	12,592,500	24	170
2009	252,500	3	171
2010	0	0	171
2011	12,997,500	38	187
2012	22,486,500	55	202
2013	0	0	202
Total	**185,575,250**	**328**	**202**
*** Compensated individuals are only counted once**			

Since the Project was started, 202 individuals were compensated receiving more than 185 million XAF or about 370 000 $US.

Table 6: Number of trained individuals by option and year

Year	Improved Agriculture	OFF Farm	Total
2006	11	0	11
2007	8	0	8
2008	12	3	15
Total	**31**	**3**	**34**

A second means of supporting impacted individuals or household is through the Resettlement Program.

As individuals are impacted and real land users are identified through the Synergy Process, a number of them, those that are facing a more difficult situation, are being declared eligible for resettlement through on or off-farm training.

Since the first impacted individual was trained in 2006, 34 impacted individuals opted for one of the training options of the resettlement program. This arises from the fact that relatively few individuals have been impacted and that most impacted individuals are relatively large land holder. (See table 5)

A comparison of tables 5 and 6 clearly demonstrates that the number of compensated individuals is much larger than the number of individuals receiving resettlement packages. This situation arises from the fact that:

- Following intervention of synergy team, it is often noted that compensated individuals are not necessarily real land users who could benefit from the resettlement program.
- Most compensated individuals have an eligibility factor of more than 0.67 and are thus not eligible for resettlement.

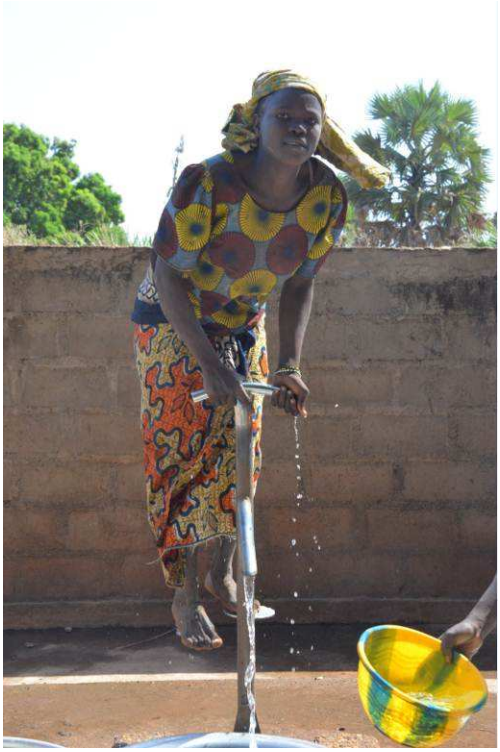
Completion of the Village Land Use Survey (VLUS) has made it possible to identify eight (8) additional eligible individuals who will receive resettlement benefits starting January 2014. As they have just recently completed their steps of reflection leading to the selection of their resettlement option we can confirm that they have all opted for improved agriculture technique.

On the basis of the village land use survey it was found that, 28 of the 34 previously trained individuals have sufficiently increased their available land base to no longer be considered at risk. The increase in land base resulted from, either:

- The identification of land not previously associated with the household. The VLUS being a more precise process being a more precise method than the declarative surveys previously used.
- They may have received some reclaimed, from the project, land through the land return process.
- They may have received some land through more traditional mechanisms (inheritance, land transfers…)

6. Mitigation of the effect of the Project on the Community

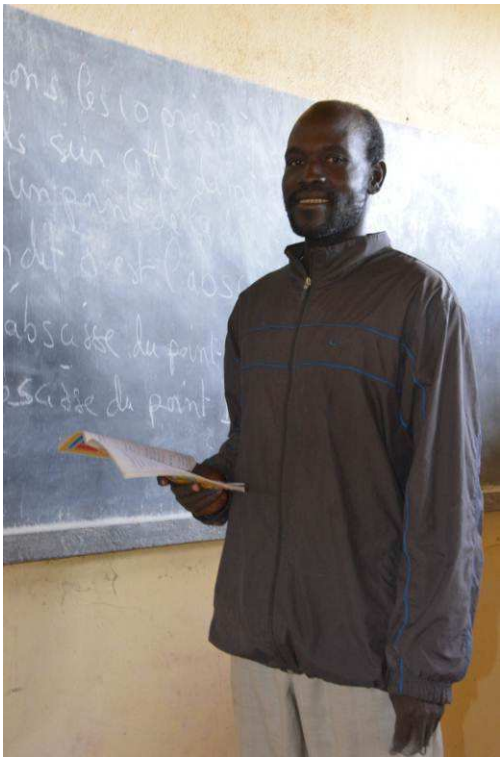
Following original land take, the village selected a package of items in lieu of community compensation. This package was comprised of a water well and a three room school which is used as a high school.



As explained by Moundouli' s village chief, the new drilled well offered by the project has had a significant positive impact on the populations health.

As is the case in the neighboring village of Benguirakol the management committee established a pay for use system. On the basis of a minimal fee (25 XFA per 2 pales of water) they have been able to generate sufficient income to ensure its operation and maintenance. These funds go into a fund which is called upon when repairs or upgrades are required. This strategy may explain why this well is still functioning while similar facilities in other communities have long since gone into disrepair.

As a second community compensation item, the community selected a three (3) room school, which has been used as a high-school. As expressed by one of the high-school's teachers, Mr. Mbaïhadjin Guillaume who teaches science, educating one's population is the best means of ensuring the long term sustainable development of a community. Since the establishment of this secondary school a number of youngsters have been able to move on to college in order to complete their high school education (BAC).



The high school program has in fact been so popular, that the number of pupils attending it exceeds the capacity of the three (3) class building constructed by EEPCI for the community. A temporary structure, made of straw and leaves, has been erected next to the high-school; it presently houses about 25 students.

This infrastructure has made it possible to offer the pupils an environment conductive to learning. The smiling faces of the students, of one of the primary grade class, gives a clear indication of the importance this infrastructure and the education they are receiving has had on their lives.

In addition to the 3 class room building given to the community as a compensation measure, Moundouli has also received a number of very significant donations among which two three room school building (see picture below), capable of accommodating a complete primary grade cycle, a water well and sanitary facilities. While the pump has broken down the new well has ensured an adequate supply of potable water. These donations were made by the Chad Project Management Team in charge of the Nya-Moundouli satellite field Project.

Overall this community has received significant assets for the benefit of its population and neighboring villages. While this infrastructure may not have completely mitigated the impact the project has had on them, it has made a significant positive impact on their lives.

7. Relations with the community and Major Topics of concerns

Public Consultation

As of September 30th 2013, **10** public consultation sessions were held in 2013. In total **871** participants were present at these various sessions. The major concerns raised by the community during these sessions dealt with:

- Cadastral activities
- Restrictions relating to Using of reclaimed sites
- Claim procedures
- Theft and act of vandalism
- Malaria
- Bathing in stagnant water

Claims process

With the establishment of a new claims management program/process in early 2011 all of the old claims have been settled. **26** new claims were received in 2011, **38** in 2012 and **5** in 2013; none are pending as of the preparation of the SSP. The vast majority of claims are for trees or fields outside of the compensated land parcel that are damaged or destroyed by construction activities. The owners of these trees seek compensation for the loss of the productive tree.

This new process brought a number of advantages:

- Claims are settled rapidly
- Because of the very short period between claims receipt and the investigation there is sufficient evidence on the site to make a decision based on evidence. Decisions are thus based on the evidence at hand.
- At present claims are settled in real time with a turn around of about four weeks.

Local Job opportunity

- During 2013, **12** residents of Moundouli were hired to perform jobs requiring limited skills (non-qualified jobs):
  - Grass cutters hired by EEPCI contractor for Moundouli Gathering Station clearing.

Donations

- 2004: 2 buildings totaling 6 classrooms, with a water well and latrines.

8. Moundouli's Current Needs and Resources

- The amount of land needed by those compensated non-viable families to become economically viable is 26.97 ha.
- Moundouli's resident population has access to 1062 ha of arable land; they also have 142.5 ha of farmland in other villages.
- 34 HH have previously graduated from resettlement training programs.
- 9 At Risk households' heads will enter into the resettlement program in 2014. Note that some of these households may no longer be non-viable following receipt of returned land or may recover on a land basis before entering the resettlement program. As they had been declared eligible to the resettlement program before recovering this land they will complete their training program as committed.
- At present, no employment opportunity exists in this community other than agriculture and commerce. It is expected that all concerned eligibles will choose improved agricultural training (IAT) as a resettlement option.
- In terms of public infrastructure, Moundouli's children presently have access to 9 modern class rooms, 6 provided through donations and 3 through community compensation.
- Water is supplied through a drilled well as described in section 6. This well appears to be managed in a sustainable fashion.

9. Recommended Site Specific Actions

The LUMAP calls for the Site Specific Plan to consider all of the options in the CRCP and its implementing procedures described in the Land Management Manual (LMM). The package made available to the community must reflect the fact that it is now considered to be a moderate impact community, having moved down from its previous rating (high impact).

For the individual HH which are currently non-viable, specific interventions will be used:

- 9 project-affected HH are non-viable; they will be offered resettlement options in the class of 2014. First they will participate in Basic Literacy training (BBS) in 1Q 2014 and then implement their option (IAT).
- Eligible individuals who received resettlement benefits in the past and are still considered to be at risk will be monitored in 2014. Those that are found not to have recovered will be targeted for reinforcement.
- If these options do not succeed during the 5 years of monitoring, then the HH will be offered physical resettlement options or if qualified reinforcement training and/or grant equipment and livestock.

As described in the following table (page 18) the best avenue of supporting this community and assisting it in facing the issues arising from the new land take which took place in the later part of 2010 and in 2011 is to offer them a Supplemental Community Compensation opportunity. While the wish of the community must and will be respected in the selection process (MARP) it is clear that the following option offers the best potential to address the needs of the community. They are:

- A one room school to replace the straw building built to absorb the overflow.
- A flour mill or a complementary facility such as a Shea butter or peanut oil extraction mill. Further reinforcing what activities are presently taking place.

As explained earlier and while we can use our influence to give the relevant information so that the villagers make a wise choice, this must not be construed as an attempt to stifle their ability to make a choice. Ultimately the community will make the final choice that best meets its' needs and aspiration.

The following table describes each option and its relevance to the At Risk Households in Moundouli as per the CRCP, LMM procedures:

Site Specific Actions for Moundouli

CRCP/LMM Resettlement Option	Description	Desirable Option (Yes/No)	Comments
Land Reclamation & Return	Reclaim land and return to community & former users; free land targeted to vulnerable HH	Yes	While some limited land return is expected in the immediate future little significant gains are expected in this area.
Physical Relocation Individuals	Physically move at risk household to new location outside of current village	Yes	Possible however, no one in Moundouli has chosen physical resettlement options.
Third Party Compensation	Land User with surplus land may donate to at risk household and receive normal land compensation payment	Yes	This is possible however no one in the OFDA has used this option to date.
Rainy Season Resettlement	Provide field clearing, rainy season hut, well, bicycle, and hand cart for use in distant farm field	Yes	Possible but no requests in this regards at this point.
Off Farm Training	Provide training to earn income in non-agricultural work	No	The rural demand for non-agricultural skills is saturated.
Improved Agriculture	**Provide training to generate more production of subsistence crops and produce cash crops**	**Yes**	**Most widely used resettlement option in the OFDA. 9 eligible will start the training program in 2014.**
Physical Relocation of Village	Physically relocate entire village to new location in cooperation and in concert with government	No	The traditional mechanisms for voluntary and gradual resettlement are working well in the OFDA.
First time Community Compensation	Phase 1: Rural Participatory Assessment of Needs & Resources	Yes	Completed in 2009. Community chose a school and a water well.
	Phase 2: Oversee implementation; Create management committee	Yes	Construction and establishment completed in 2009.
Supplemental Community Compensation	**Phase 1: MARP**	**Yes**	**Could start in Q2 2014**
	Phase 2: Oversee implementation; create management committee.	**Yes**	**Could be completed in 2014 if budget permits**

Site Specific Plan Implementation Timeline

Green = Completed; Blue = Underway; White = To implement

Action	Timeline
EEPCI provides Training and equipment to qualified resettlement training program graduates.	2006-2008 (34)
MARP, Initial Compensation	2008-2009
Construction Initial Community Compensation	2009
Village Land Use Survey	August 2013
Monitoring process of individuals who previously received resettlement.	February 2014
EEPCI provides Reinforcement Training and equipment to qualified resettlement training program graduates.	Q3-2014
EEPCI offers Basic Business Skills and Improved Agriculture Training to first time resettlement eligible farmers.	Jan 2014 (9)
MARP – Supplemental Compensation	February 2014
Moundouli choice of Supplemental Community Compensation	Feb 2014 – Feb 2015
Construction of Supplemental Community Compensation Projects	Q3 2014 Budget permitting

Annexes

Annex 1: Land available to villages

	Bémira	Benguirakol	Moundouli	Moundouli Satellite Average	OFDA Average
Village Area in Hectares	651	1068.3	1151.4	956.9	1821.6
Settlement area in Hectares (% village)	24.7 (3.8 %)	27.7 (2.6 %)	44.9 (3.9 %)	32.4 (3.4 %)	50.5 (2.8 %)
Project Perm. Land Take + Temp. No Returned in Hectares (% village)	13.1 (2 %)	47.5 (4.4 %)	44.9 (3.9 %)	35.2 (3.7 %)	120.8 (6.6 %)
Available Land inside the village limit in Hectares (% village)	613.2 (94.2 %)	993.1 (93 %)	1061.6 (92.2 %)	889.3 (92.9 %)	1650.3 (90.6 %)
Available Land Density inside the village limit (Hectares/Person)	0.79	1.49	0.98	1.06	1.72
Cultivated (Field) or Owned (Fallow) outside the village in Hectares (% of total land of the residents)	55.3 (8.7 %)	73.7 (10 %)	142.5 (15.8 %)	90.5 (11.9 %)	200.7 (12.6 %)
Total Cultivated (Field) or Owned (Fallow) of the residents in Hectares (% of total land of the residents)	637.5	734.5	903.3	758.4	1591.6
Available Land Density inside and outside the village limit (Hectares/Person)	0.82	1.1	0.83	0.9	1.66

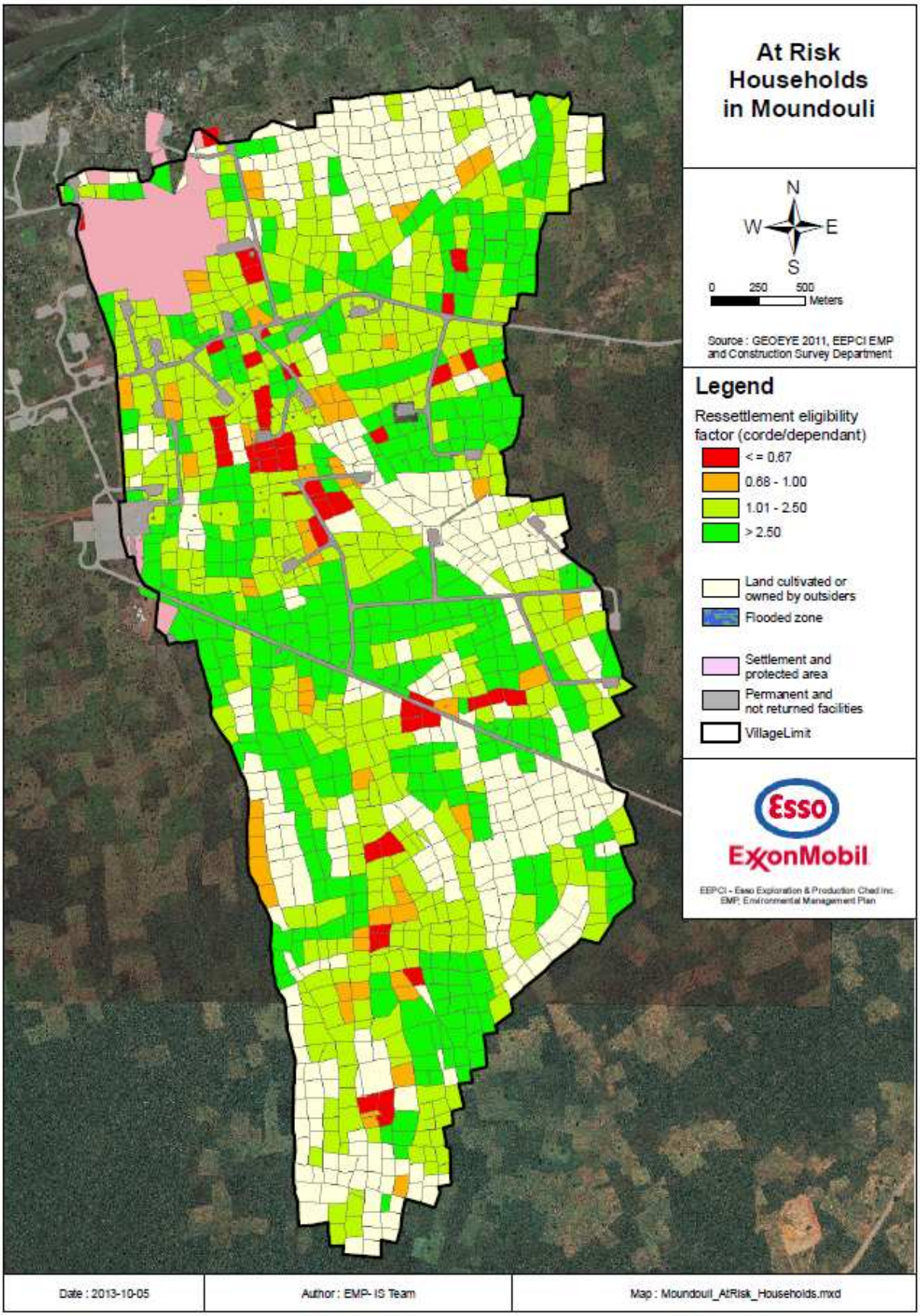
Annex 2: Use of Available Land per Village

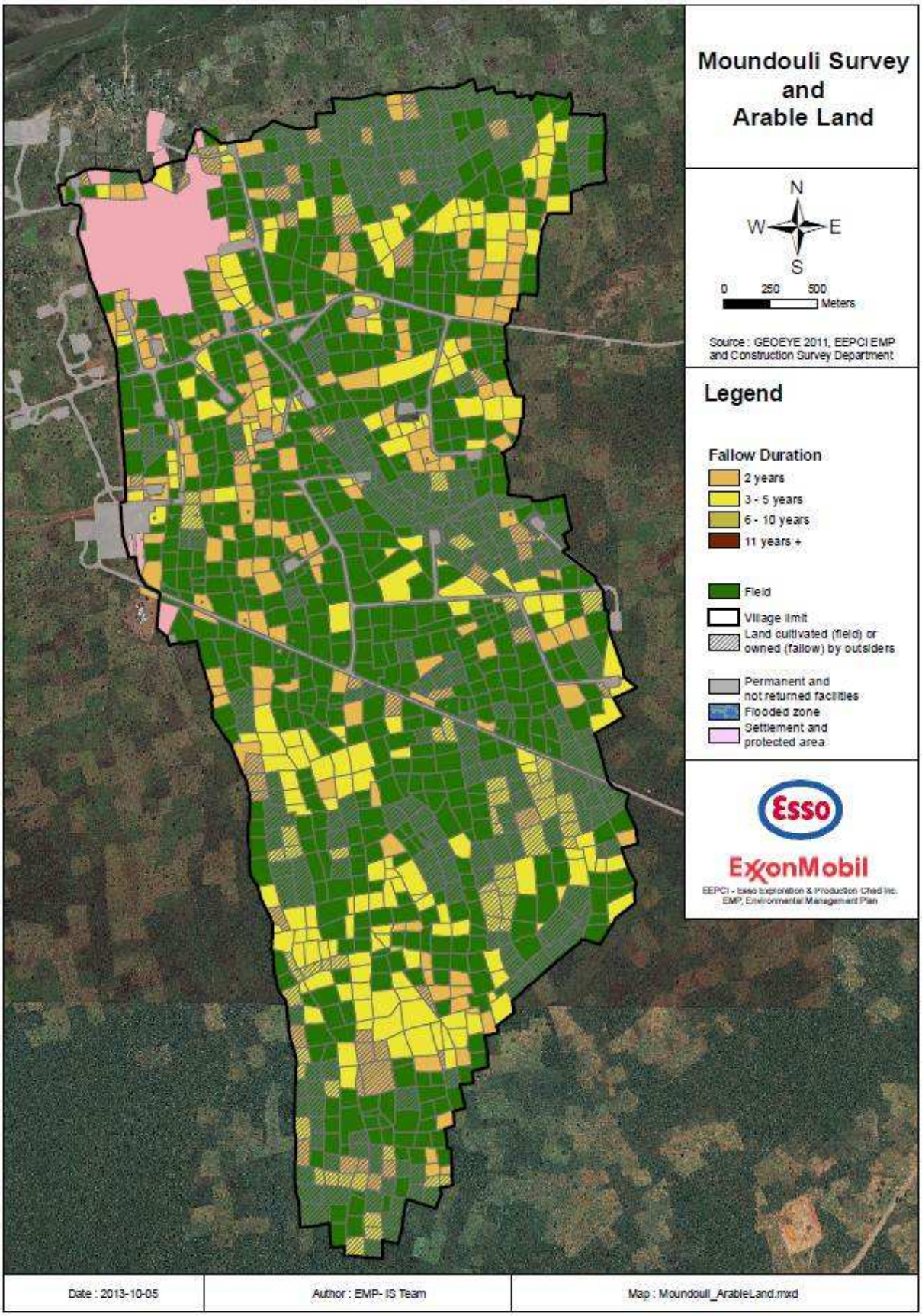
	Bémira	Benguirakol	Moundouli	Moundouli Satellite Average	OFDA Average
Cultivated (Field) or Owned (Fallow) by non-residents inside the village limit in Hectares (% of available land inside village limit)	29.9 (4.9 %)	324.6 (32.7 %)	300.1 (28.3 %)	218.2 (24.5 %)	308.2 (18.7 %)
Cultivated Field Farmed by Resident inside the village limit in hectares (% of available land)	392.7 (64 %)	350.5 (35.3 %)	497.6 (46.9 %)	413.6 (46.5 %)	649.1 (39.3 %)
Fallow Owned by Resident inside the village limit in hectares (% of available land)	189.5 (30.9 %)	310.3 (31.2 %)	263.1 (24.8 %)	254.3 (28.6 %)	676.9 (41 %)
Ratio Fallow/Field	0.48	0.89	0.53	0.61	1.04

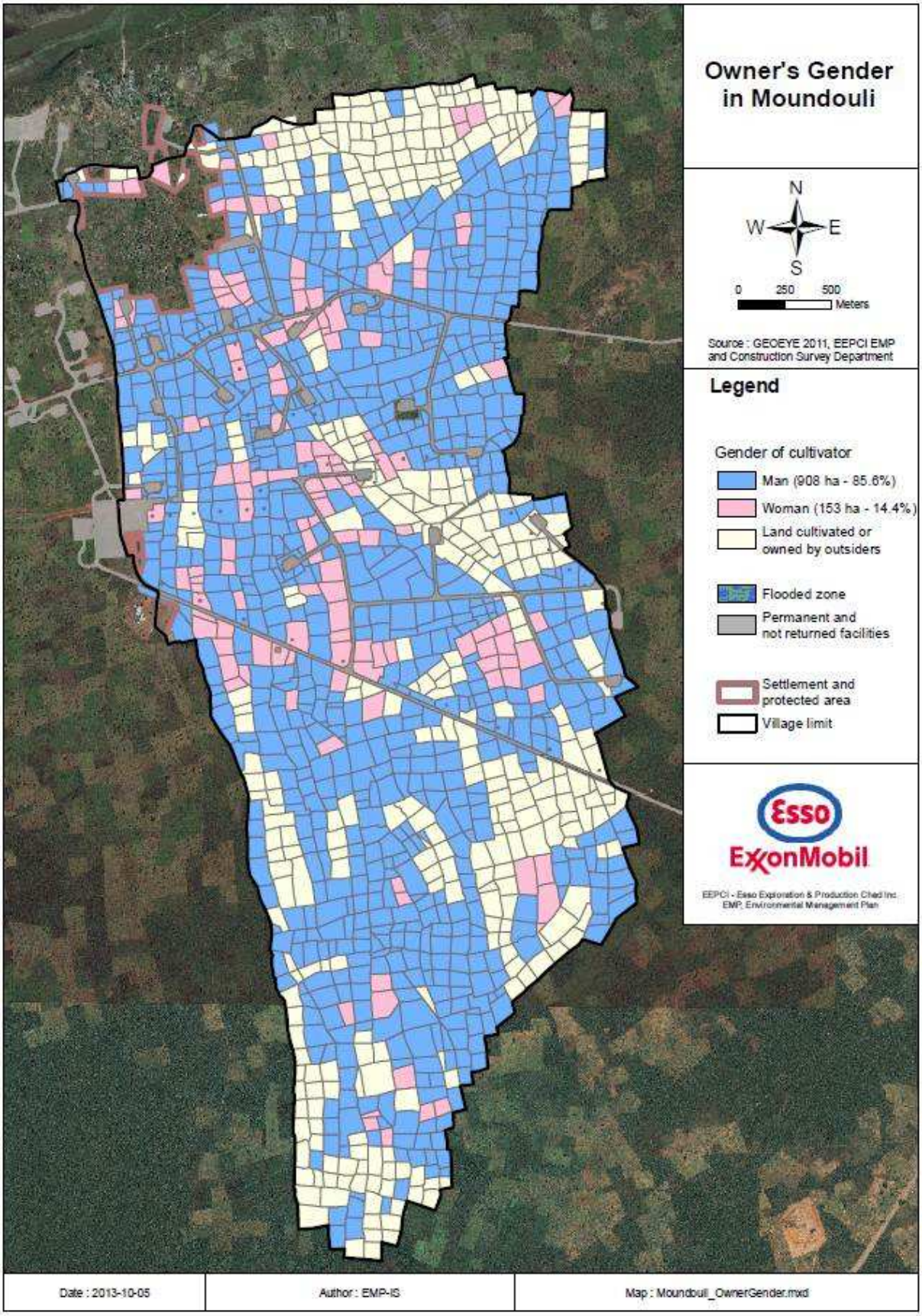
Annex 3: Demography of villages

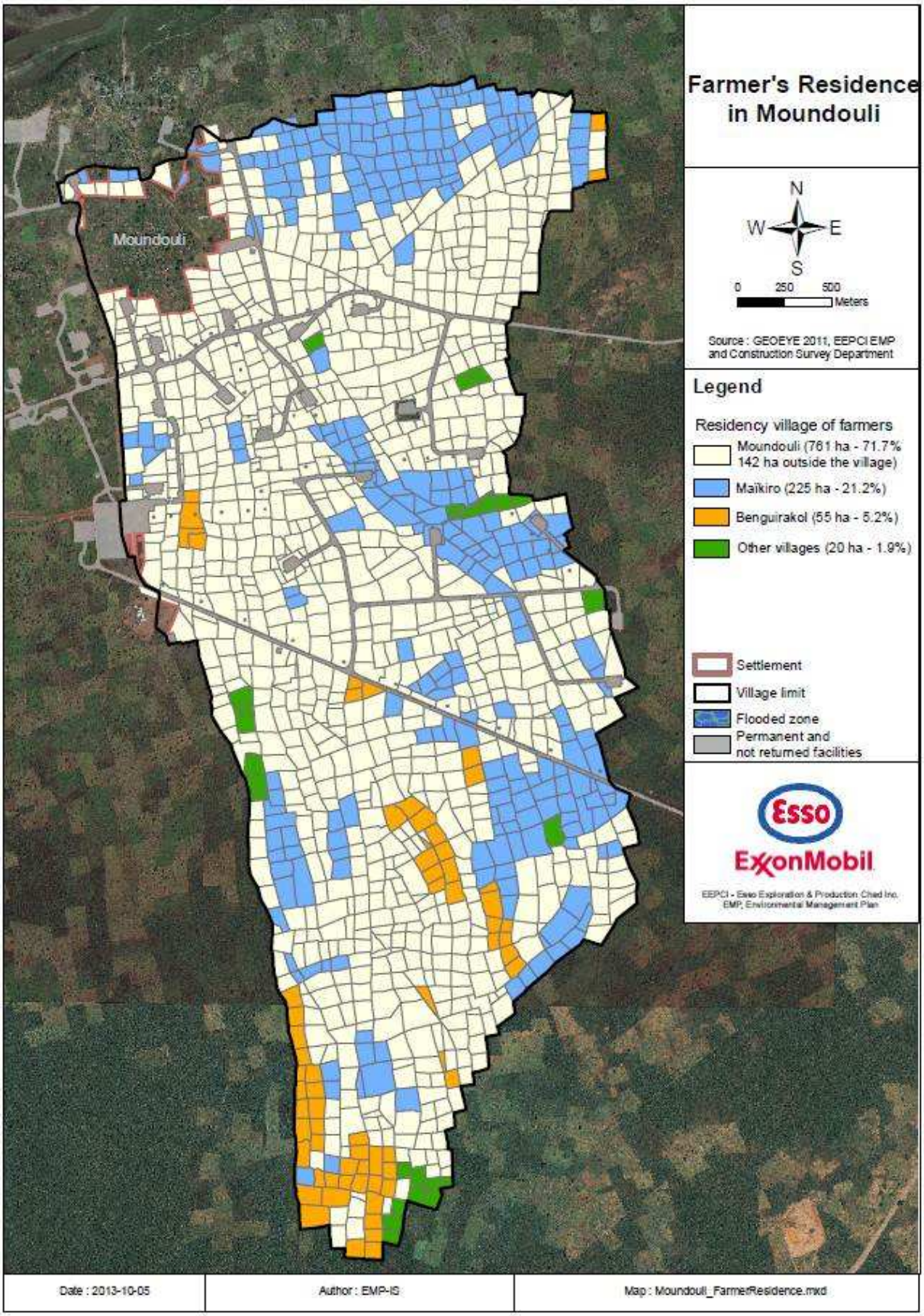
	Bémira	Benguirakol	Moundouli	Moundouli Satellite Average	OFDA Average
Nbr of Residents	777	665	1084	842	960.5
Men	352	329	543	408	474.1
Women	425	336	541	434	486.4
Avg Age in Years	18.7	19.1	18.7	18.8	18.7
Nbr HH	145	106	178	143	176.1
Avg. HH size	5.4	6.3	6.1	5.9	5.5
Avg. cordes Land per HH inside and outside village	8.7	13.7	10.1	10.8	16.2
Avg. Resettlement Factor (Based on all land inside and outside village)	1.625	2.191	1.653	1.8	3
% Area cultivated (Field) or owned (Fallow) by women out of total area “owned” by village residents inside and outside village	10.4	8.3	14.8	11.5	19.6

Annex 4: Thematic Maps of Moundouli




Moundouli Survey
and
Arable Land
N
W
E
S
0
250
500
Meters
Source : GEOEYE 2011, EEPCI EMP
and Construction Survey Department
Legend
Fallow Duration
2 years
3 - 5 years
6 - 10 years
11 years +
Field
Village limit
Land cultivated (field) or
owned (fallow) by outsiders
Permanent and
not returned facilities
Flooded zone
Settlement and
protected area
Esso
ExxonMobil
EEPCI - Esso Exploration & Production Chad Inc.
EMP, Environmental Management Plan
Date : 2013-10-05
Author : EMP- IS Team
Map : Moundouli_ArableLand.mxd


Owner's Gender in Moundouli
N
W
E
S
0
250
500
Meters
Source : GEOEYE 2011, EEPCI EMP and Construction Survey Department
Legend
Gender of cultivator
Man (908 ha - 85.6%)
Woman (153 ha - 14.4%)
Land cultivated or owned by outsiders
Flooded zone
Permanent and not returned facilities
Settlement and protected area
Village limit
Esso
ExxonMobil
EEPCI - Esso Exploration & Production Chad Inc.
EMP, Environmental Management Plan
Date : 2013-10-05
Author : EMP-IS
Map : Moundouli_OwnerGender.mxd


Farmer's Residence in Moundouli
Moundouli
N
W
E
S
0
250
500
Meters
Source : GEOEYE 2011, EEPCI EMP and Construction Survey Department
Legend
Residency village of farmers
Moundouli (761 ha - 71.7% 142 ha outside the village)
Maïkiro (225 ha - 21.2%)
Benguirakol (55 ha - 5.2%)
Other villages (20 ha - 1.9%)
Settlement
Village limit
Flooded zone
Permanent and not returned facilities
Esso
ExxonMobil
EEPCI - Esso Exploration & Production Chad Inc.
EMP, Environmental Management Plan
Date : 2013-10-05
Author : EMP-IS
Map : Moundouli_FarmerResidence.mxd