

Esso Exploration & Production Chad Inc.

**Site Specific Plan
Ndoheuri Village**

Land Use Mitigation Action Plan

**Prepared by the EMP Department
September 2012**

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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.

Ndoheuri (Miandoum canton) is the latest of 17 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 2010 following the identification of a small field known as Miandoum North West. A significant number of wells and service facilities have since been established in this community.

As of June 30th these facilities occupied 23.4 ha out of a village land area of about 800 ha, or about 2.9% of the village's area. Although the Project has occupied 37.1 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 Ndoheuri is considered to be a low impact village both in terms of project land use and its impact on the population of this community. These impacts could include:

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

It should be noted that this community received a community compensation package, in the form of a flour mill in 2010. As such the purpose of Ndoheuri'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 (flour mill). 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. Ndoheuri’s population at a glance

Created in 1986, Ndoheuri (Miandoum canton) is the latest

of 17 OFDA villages to be surveyed using the Village Land Use Survey technique. With a total area of only 812 ha, Ndoheuri is one of the small villages of the OFDA, in fact it ranks 16th out of 25 in terms of area. It has a relatively small population density with only 95 households and 514 residents. The village has been impacted by the development of the North West of Miandoum fault block.

Table 1: Distribution of Households and Individuals by Eligibility Factor

| Range | Nbr HH | Nbr Individual |
|----------------|------------|----------------|
| 0.000 – 0.667 | 11 (12%) | 75 (15 %) |
| 0.668 – 0.999 | 7 (7 %) | 61 (12 %) |
| 1.000 – 2.499 | 49 (52 %) | 265 (51 %) |
| 2.5000 - | 28 (29 %) | 113 (22 %) |
| Total | 95 (100 %) | 514 (100 %) |

With an average household size of 5.4 persons and an average population age of 19, it is in general fairly representative of the villages of the OFDA (OFDA average is 5.6 persons per HH (see annex 3)). Some notable facts can nonetheless be outlined:

- 15% of households are headed by women. This is slightly higher than what is found in comparable villages. The average number of women headed households in small villages (less than 150 households) is 12.8 %.
- 90 individuals or 17.5% 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 15.98 cordes or 2.96 cordes of farm land per family member.
- With only 4.3 % of its population which is made up of non-viable project affected individuals, this village is considered to be a low impact category for the socio-economic criteria.

Contrary to what has generally occurred, moving from far less accurate declarative data to the declarative data resulted in a significant increase rather than reduction in the percentage (going from 2.0% to 15.0 %) of households that are deemed to be non-viable (below 0,67 cordes per household member). This increase was not as dramatic as one may expect, if one considers the fact that only 4.3% (22 individuals) of the population was identified as project affected non-viable. The analysis conducted confirmed that Ndoheuri remains in the low impact category in terms of both the social and land take criterion. From table 1 we can, nonetheless, note that 88% of Ndoheuri's households are viable, in fact the non-viable category is made-up of only 11 households (3 households non-viable project affected).

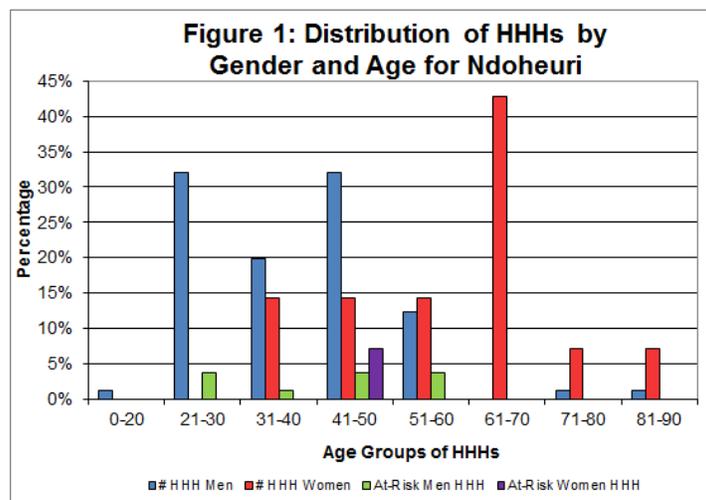
Table 2: Number of Non-viable households as per declarative vs VLU data

| | Total non-viable | Non-viable project affected |
|------------------|------------------|-----------------------------|
| Declarative data | 1.0% | 1.0% |
| VLUS data | 11.6% | 3.2% |

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 (85% 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 60% of cases where the HHH is more than 60 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.

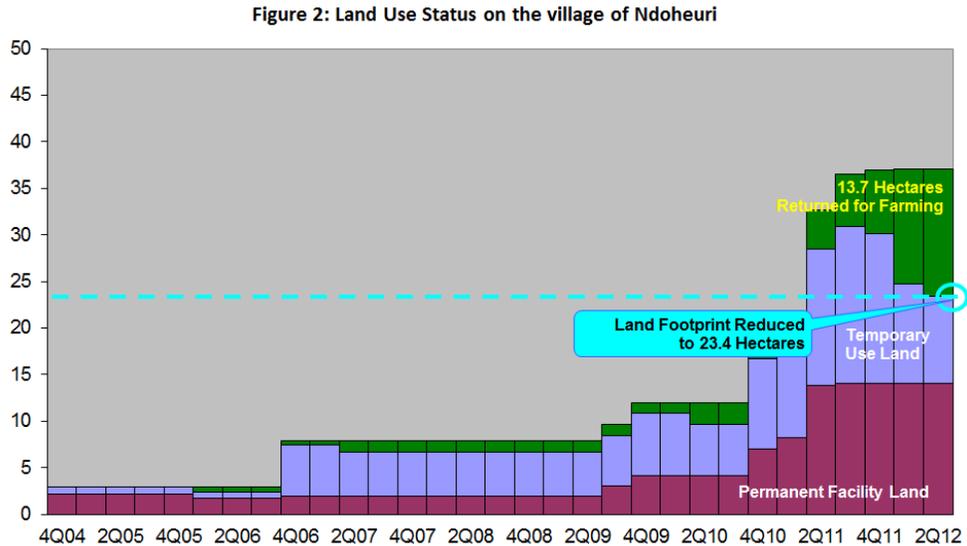


While we normally find that the proportion of at risk household tends to correspond to the gender distribution, in Ndoheuri WHHH (Women Head of Household) represent 9% of at risk HHHs while representing only 15% of households. Overall, 12% of men headed households are at risk (10/81) while it is only 9% for households headed by women (1/14). WHHH 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 Ndoheuri where the distribution is fairly even amongst the various age groups.

3. The Project’s Footprint at the Village Level

While the original land take was fairly small (about 3 ha) and remained low for a number of years, the development of the Miandoum NW field resulted in a significant increase in the project’s footprint. If we do not account for recent land return the project has touched 37.1 ha



representing 4.6 % of the village’s area. 13.7 ha have since been returned or 37% of the original land-take. At present the Project’s land take stands at 23.4 ha or 2.9 % of the village area. It must be noted that the initial community compensation (flour mill built in 2010) 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 over the last two years, the project has had a significant recurring and potentially destabilizing effect on Ndoheuri in general and on the settlement of Dogoi, the portion of Ndoheuri where most of the infrastructure is located. 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

| Land use type | Total area (hectares) | | |
|--|-----------------------|-------------|-------------|
| | Compensated | Returned | |
| Permanent with public access | 8.9 | 0.5 | 6 % |
| Permanent with no Public access | 5.6 | 0 | - |
| Sub-Total Permanent | 14.5 | 0.5 | 3 % |
| Temporary returned without restriction | 0 | 0 | - |
| Temporary returned with restriction | 22.6 | 13.2 | 58 % |
| Sub-Total Temporary | 22.6 | 13.2 | 58 % |
| Grand Total | 37.1 | 13.7 | 37 % |

- 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 Ndoheuri

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.

No ground water collection station is present in Ndoheuri. Most relevant data to use are those for Ngalaba which is located between the most probable source of contaminants (Miandoum gathering station) and Ndoheuri. Ndoheuri is located at 2.8 km from Miandoum Gathering Station.

For the village of Ngalaba 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 Ngalaba

| Results | Cl ⁻ | SO ₄ ²⁻ | NO ₃ ⁻ -N | NO ₂ ⁻ -N | NH ₃ -N | Fe | Mn | fecal coliforms | TPH |
|----------|-----------------|-------------------------------|---------------------------------|---------------------------------|--------------------|-------|-----|-----------------|------|
| Q1-2012 | 0.7 | 1 | 0.2 | 0.004 | 0.02 | 0.035 | 0.2 | TNTC | 30.0 |
| Standard | 250 | 250 | 50 | 3 | 1.5 | 0.3 | 0.5 | OMP/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, there is a continuous monitoring of ambient air for nitrogen oxides (NO₂) and monitoring of sulfur dioxides (SO₂) on a quarterly basis.

No predicted location for air monitoring is present in Ndoheuri, 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 Ndoheuri. Ndoheuri is located at 2.8 km from Miandoum Gathering Station.

Ambient air data collected shows the following:

- Average of monthly levels of emission (Q4-2011) at the stack for NO₂ varies between 2.68 and 8.3 micro grams per cubic meter of air (ug/m³), or at worst 12 times less than the maximum allowable of 100 ug/m³.
- Average monthly levels of emission at the stack for SO₂ varies between 1.64 and 8.68 micro grams per cubic meter of air (ug/m³), or at worst 9 times less than the maximum allowable of 80 ug/m³.

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 Ndoheuri.

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.

Table 5: Compensated Individuals and Amounts

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 established 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.

| Year | Compensation Payment (XAF) | # of Compensated Individuals | Cumul Compensated Individuals* |
|---|----------------------------|------------------------------|--------------------------------|
| 1998-2001 | 0 | 0 | 0 |
| 2002 | 46,000 | 1 | 1 |
| 2003 | 0 | 0 | 1 |
| 2004 | 0 | 0 | 1 |
| 2005 | 0 | 0 | 1 |
| 2006 | 8,167,000 | 17 | 18 |
| 2007 | 0 | 0 | 18 |
| 2008 | 0 | 0 | 18 |
| 2009 | 2,523,000 | 4 | 20 |
| 2010 | 0 | 0 | 20 |
| 2011 | 14,718,500 | 32 | 45 |
| 2012 | 0 | 0 | 45 |
| Total | 25,454,500 | 54 | 45 |
| * Compensated individuals are only counted once | | | |

Since the Project was started, 45 individuals were compensated receiving more than 25 million XAF.

Table 6: Number of trained individuals by option and year

| Year | Improved Agriculture | OFF Farm | Total |
|-------|----------------------|----------|-------|
| 2001 | 0 | 0 | 0 |
| 2002 | 0 | 0 | 0 |
| 2003 | 0 | 0 | 0 |
| 2004 | 1 | 0 | 1 |
| 2005 | 0 | 0 | 0 |
| 2006 | 0 | 0 | 0 |
| 2007 | 0 | 0 | 0 |
| 2008 | 1 | 0 | 1 |
| 2009 | 0 | 0 | 0 |
| 2010 | 0 | 0 | 0 |
| 2011 | 0 | 0 | 0 |
| 2012 | 0 | 0 | 0 |
| Total | 2 | 0 | 2 |

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 2004, only 2 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 thru 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.

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

After almost two years of operation Ndoheuri's flour mill has had a significant positive impact on the community.

Not only has it been a financial success, they have presently over half a million XAF in their treasury, but they have also been able to develop a host of new services. As explained by the president of the management committee (Mbainaissem Narnan), these new services were setup in order to meet the need of the residents of Ndoheuri and of neighboring villages. The mill has thus become a significant lever in the development of the community. The services presently being offered cover areas such as:



Picture 1: Flour mill, Ndoheuri



Picture 2: Mbainaissem Narnan
President Management Committee

- Micro and emergency credit: Funds are lent to households who are in need of emergency relief to buy food during the last few weeks of the "soudure" or to buy inputs for the next cropping season. Reimbursement is made once harvest is completed on the basis of a bag of peanuts for a 10,000 XAF loan and a bag of Sorghum for a 5,000 XAF loan. No interest is charged for these loans.
- They buy grains from local farmers ensuring that all receive a fair price corresponding to market conditions. They simply use the price offered in some of the regional markets (Bebidja and Doba) allowing for transport costs and a small profit for the mill.
- Clients who have grain to mill can choose to pay for the service in either cash or grain. The grain is purchased at the daily market price.
- In order to generate additional surpluses for their mill they speculate on the market in order to maximize the value of the stocks of peanuts and sorghum they accumulate during their daily activities. The grain they receive or buy in the fall will be sold when the price peaks out, during the months of June, July and August.
- Parts of the profits thus generated are used to pay the salary of community based teachers at the local school. Ensuring that all profit from this self-sustaining community based activity profit the entire community.

From the discussion we have had with Mr. Mbainaissem, it is clear that their success comes from the fact that the community has taken full ownership of its mill. The fact that the mill's president has experience in commerce and trade has also contributed significantly to their success. This confirms the

fact that the makeup of the management committee is one of the key factors for such a project to achieve a good level of performance. The training offered by the project in equipment repair and maintenance, general management and appropriation have also ensured that the management committee has all the tools it requires to be successful.

If it wasn't for the fact that more than 50% of this mill's clients come from neighboring communities, it could have been a major challenge to operate this mill profitably if it depended only on the patronage of the 95 households of the village.

One of the clients coming from a neighboring village is Appoline Meounon. Twice a week she travels from Ngalaba using her ant's bicycle to have some sorghum and manioc milled. She explains that the quality of the service is well worth the effort of traveling the extra 2 km rather than using Ngalaba's mill.

For her, the existence of a commercial mill has two significant advantages:

- It reduces her work load significantly. She used to have to spend a few hours every day to pound the grain into flour. Now she can, for a minimal amount, get her grain milled and focus on more pressing tasks at home and on their farm.
- She also feels that commercial milling is far more efficient than traditional practices. Not only does pounding grain into flour requires a lot of effort but it often results in a fair amount of wastage in the form of dropped/lost grain and produces an uneven/coarse flour not always suitable for the purpose at hand.

Overall this initiative has had great direct benefits for the women of the surrounding area and is becoming a significant lever for the development of the economy of Ndoheuri and the region.



Picture 3: Appoline Meounon, mill user from Ngalaba

7. Relations with the community and Major Topics of concerns

Public Consultation

As of August 9th 2012, 5 public consultation sessions were held in 2012. In total **85** participants were present at these various sessions. The major concerns raised by the community during these sessions dealt with:

- ☐ Local employment
- ☐ Insecurity (relationship with the gendarme force)
- ☐ Donation
- ☐ Quality of land reclamation
- ☐ Boundary between villages

Claims process

With the establishment of a new claims management program/process in early 2011 all of the old claims have been settled. **25** new claims were received in 2011 and **1** in 2012; 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 creation

- ☐ During 2012, No residents of Ndoheuri were hired to perform jobs requiring limited skills (non-qualified jobs). This is due to the fact that no work was undertaken in the limits of the village.

Donations

- ☐ 2012: 0 Loads of waste wood donated to local community groups in view of the distance to cover for delivery.

8. Ndoheuri's Current Needs and Resources

- The amount of land needed by those compensated non-viable families to become economically viable is 6.62 ha.
- Ndoheuri's resident population has access to 747 ha of arable land; they also have 42 ha of farmland in other villages.
- 2 HH have previously graduated from resettlement training programs.
- 3 At Risk households' heads will enter into the resettlement program in 2013. 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, Ndoheuri's children presently have access to traditional straw buildings/hangars that are used as school houses, with all the restrictions that this implies.
- Water is supplied through traditional surface wells often found to be contaminated by fecal coliforms from animal or human origin.

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).

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

- 5 project-affected HH are non-viable; 2 have completed the BBS training program and the rainy season portion of the IAT and 3 will be offered resettlement options in the class of 2013. First they will participate in Basic Literacy training (BBS) in 1Q 2013 and then implement their option (IAT).
- Following a monitoring process completed in 2011, 1 previously trained eligible has been enrolled in the reinforcement program started in 2012.
- 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.

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

As described in the following table 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 (MARF) it is clear that three options offer the best potential for addressing the issues raised earlier. They are:

- A one room school to replace at least one of the straw buildings. While this does not completely address the needs of the community it is a start.
- As a flour mill is already available some consideration could be given to the establishment of a complementary facility such as a Shea butter or peanut oil extraction mill. Further reinforcing what activities are presently taking place.
- A water well in view of water quality issues often associated to the dependence on shallow wells normally found in such villages. Furthermore as it is often women who need to go and fetch water from the river (the second closest source of water) this would also reduce their burden.

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.

Site Specific Actions for Ndoheuri

| 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 Ndoheuri 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 depending on Third Party Compensation occurring. |
| 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. 3 eligible will start the training program in 2013. |
| 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 2010. Community chose a flour mill. |
| | Phase 2: Oversee implementation; Create management committee | Yes | Construction and establishment completed in 2010. |
| Supplemental Community Compensation | Phase 1: MARP | Yes | Could start in Q4 2012 |
| | Phase 2: Oversee implementation; create management committee. | Yes | Could be completed in 2013 if budget permits |

Site Specific Plan Implementation Timeline

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

| Action | <u>Timeline</u> |
|---|--------------------------|
| EEPCI provides Reinforcement Training and equipment to qualified resettlement training program graduates. | March 2009 |
| Village Land Use Survey completed | July 2010 |
| Monitoring process of individuals who previously received resettlement. | September 2011 |
| EEPCI provides Reinforcement Training and equipment to qualified resettlement training program graduates. | Summer 2012 Ongoing |
| EEPCI offers Basic Business Skills and Improved Agriculture Training to first time resettlement eligible farmers. | Jan 2013 (3) |
| MARP | November 2012 |
| Ndoheuri choice of Supplemental Community Compensation | Nov 2012 – Nov 2013 |
| Construction Ndoheuri Supplemental Community Compensation Projects | Jan 2013 – March 2014 |

Annexes

Annex 1: Land available to villages

| | Ndoheuri | Missimadji | Dokaidilti | Dildo | Ngalaba | Danmadja | Mouarom | Begada | Bela | Mbanga | Madjo | Bero | Maikeri | Mainani | Naikam | Poutouguem | Kome |
|--|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|----------------|----------------|----------------|---------------|----------------|
| Village Area in Hectares | 812 | 181 | 688 | 1888 | 2122 | 480 | 1359 | 3320 | 2200 | 2979 | 2150 | 5706 | 1245 | 1407 | 1446 | 562 | 2448 |
| Settlement area in Hectares (% village) | 42 (5 %) | 24 (13 %) | 24 (3.5 %) | 46 (2.5 %) | 97 (5 %) | 64 (13 %) | 23 (2 %) | 56 (2 %) | 35 (2 %) | 62 (2 %) | 27 (1 %) | 158 (3 %) | 46 (4 %) | 68 (5 %) | 23 (1.5 %) | 28 (5 %) | 81 (3 %) |
| Project Perm. Land Take + Temp. No Returned in Hectares (% village) | 23.4 (3 %) | 21 (11 %) | 63 (9 %) | 179 (9.5 %) | 249 (12 %) | 70 (14.5 %) | 138 (10 %) | 267 (8 %) | 193 (9 %) | 207 (7 %) | 106 (5 %) | 611 (11 %) | 106 (8.5 %) | 87 (6 %) | 20 (1.5 %) | 47 (8 %) | 24 (1 %) |
| Available Land inside the village limit in Hectares (% village) | 747 (92 %) | 136 (75 %) | 601 (87 %) | 1662 (88 %) | 1776 (84 %) | 346 (72 %) | 1198 (88 %) | 2997 (90 %) | 1972 (90 %) | 2709 (91 %) | 2017 (94 %) | 4937 (86.5 %) | 1093 (88 %) | 1252 (89 %) | 1403 (97 %) | 487 (87 %) | 2343 (96 %) |
| Available Land Density inside the village limit (Hectares/Person) | 1.45 | 0.92 | 1.18 | 1.23 | 1.31 | 0.60 | 2.72 | 2.34 | 2.35 | 1.79 | 2.40 | 1.26 | 1.48 | 2.02 | 5.08 | 1.6 | 2.4 |
| Cultivated (Field) or Owned (Fallow) outside the village in Hectares (% of total land of the residents) | 42 (8 %) | 146 (45 %) | 43 (9 %) | 133 (8 %) | 85 (5 %) | 123 (25 %) | 220 (26 %) | 127 (5 %) | 88 (5 %) | 105 (4.5 %) | 100 (6 %) | 702 (14 %) | 28 (3 %) | 455 (28 %) | 375 (34 %) | 9 (4 %) | 761 (20 %) |
| Total Cultivated (Field) or Owned (Fallow) of the residents in Hectares (% of total land of the residents) | 510 | 324 | 500 | 1589 | 1659 | 485 | 857 | 2785 | 1670 | 2311 | 1689 | 5131 | 1002 | 1641 | 1115 | 239 | 3770 |
| Available Land Density inside and outside the village limit (Hectares/Person) | 0.99 | 2.19 | 0.98 | 1.17 | 1.22 | 0.84 | 1.95 | 2.18 | 1.99 | 1.53 | 2.01 | 1.31 | 1.35 | 2.64 | 4.04 | 0.79 | 3.85 |

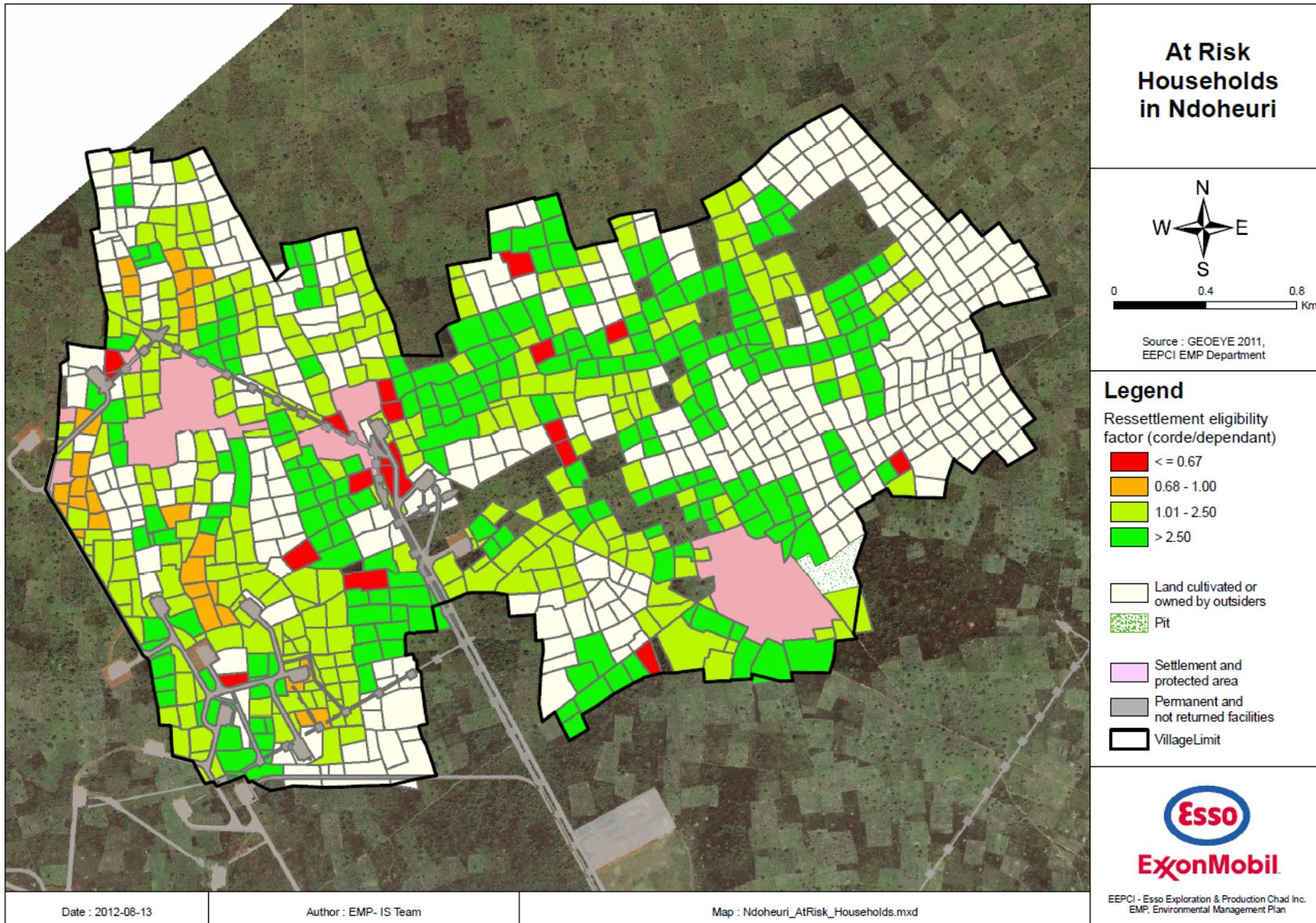
Annex 2: Use of Available Land per Village

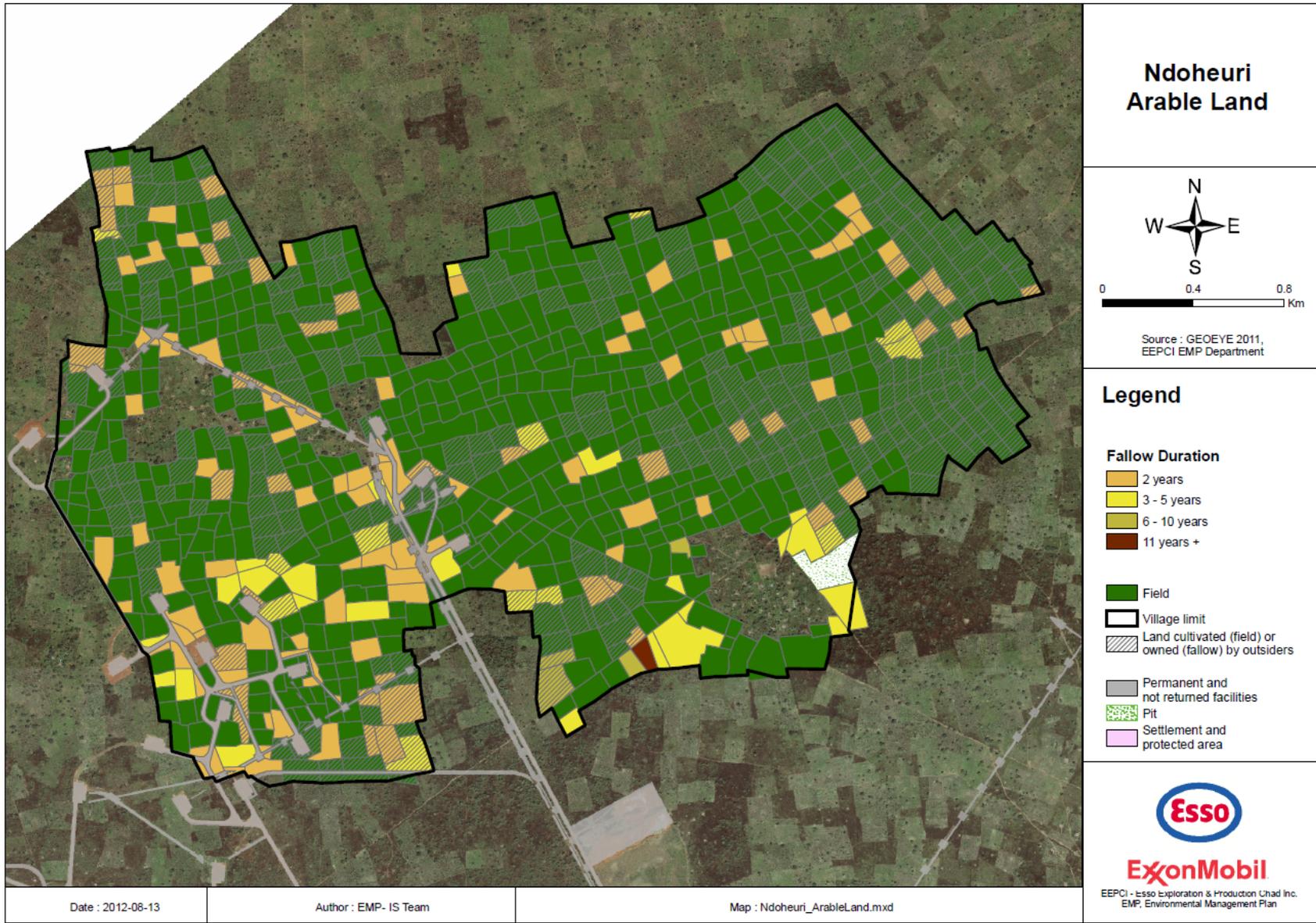
| | Ndoheuri | Missimadji | Dokaidilti | Dildo | Ngalaba | Danmadja | Mouarom | Begada | Bela | Mbanga | Madjo | Bero | Maikeri | Mainani | Naikam | Poutouguem | Kome |
|---|-----------------|----------------|-----------------|-----------------|----------------|-----------------|-----------------|----------------|--------------|-----------------|---------------|-----------------|---------------|---------------|----------------|---------------|----------------|
| Cultivated (Field) or Owned (Fallow) by non-residents inside the village limit in Hectares (% of available land inside village limit) | 285 (38 %) | 64 (47 %) | 138 (23 %) | 140 (8.5 %) | 145 (8 %) | 16 (4.5 %) | 527 (44 %) | 280 (9 %) | 373 (19%) | 604 (22 %) | 552 (27 %) | 398 (8 %) | 188 (17 %) | 143 (11 %) | 765 (54.5%) | 249 (51 %) | 372 (16 %) |
| Cultivated Field Farmed by Resident inside the village limit in hectares (% of available land) | 377 (50.5 %) | 70 (51.5 %) | 309 (51.5 %) | 664 (40 %) | 1030 (58 %) | 240 (69.5 %) | 293 (24.5 %) | 1171 (39 %) | 750 (38%) | 1121 (41.5%) | 473 (23 %) | 2001 (40.5%) | 634 (58 %) | 526 (42 %) | 94 (6.5 %) | 152 (31 %) | 1130 (48 %) |
| Fallow Owned by Resident inside the village limit in hectares (% of available land) | 85 (11.5 %) | 2 (1.5 %) | 154 (25.5 %) | 859 (51.5 %) | 601 (34 %) | 90 (26 %) | 378 (31.5 %) | 1546 (52 %) | 849 (43%) | 985 (36.5%) | 992 (50 %) | 2538 (51.5%) | 271 (25 %) | 583 (47 %) | 544 (39 %) | 86 (18 %) | 841 (36 %) |
| Ratio Fallow/Field | 0.23 | 0.03 | 0.50 | 1.29 | 0.58 | 0.38 | 1.29 | 1.32 | 1.13 | 0.88 | 2.10 | 1.27 | 0.43 | 1.11 | 5.79 | 0.57 | 0.74 |

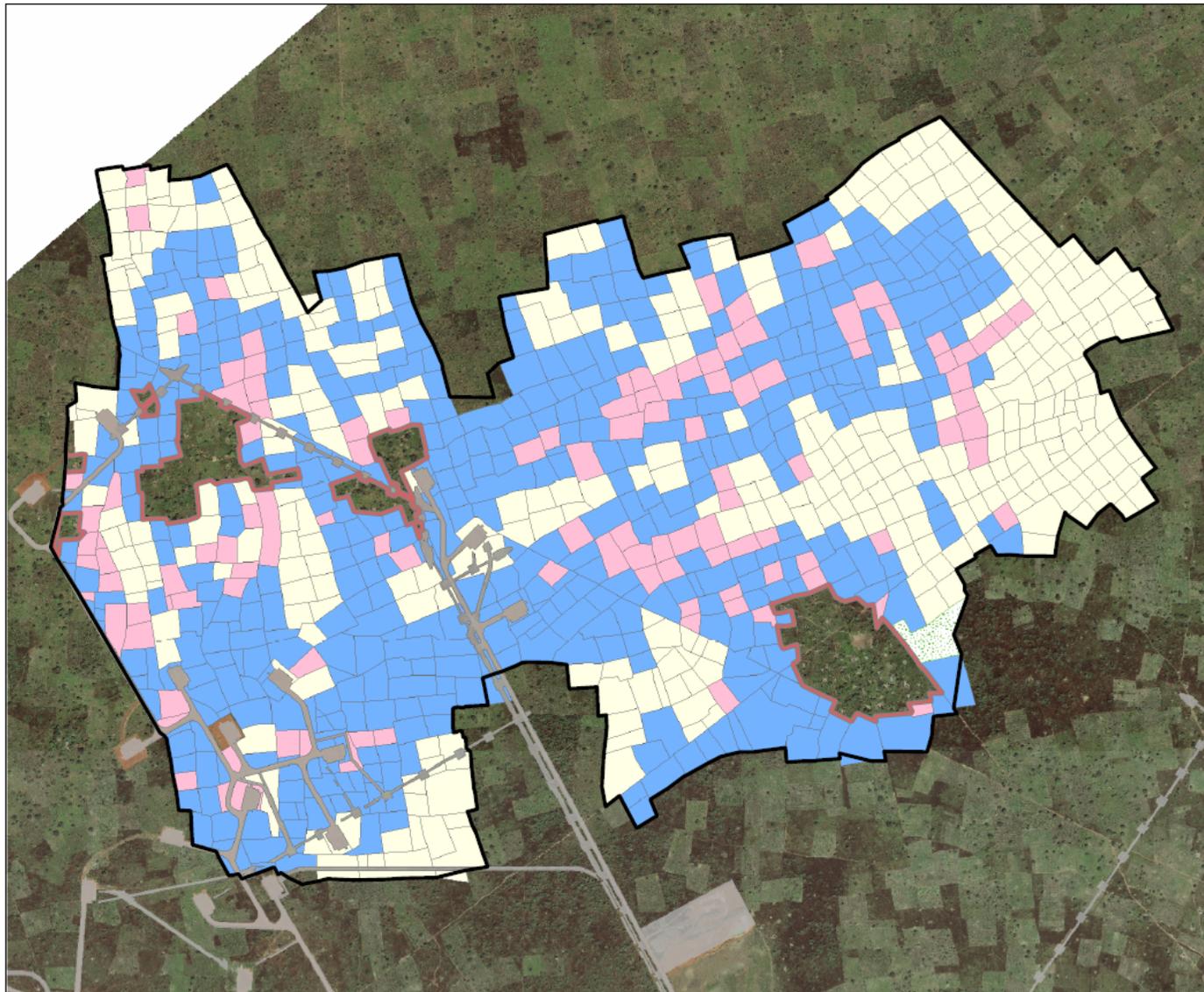
Annex 3: Demography of villages

| | Ndoheuri | Missimadji | Dokaidilti | Dildo | Ngalaba | Danmadja | Mouarom | Begada | Bela | Mbanga | Madjo | Bero | Maikeri | Mainani | Naikam | Poutouguem | Kome |
|--|----------|------------|------------|-------|---------|----------|---------|--------|-------|--------|-------|-------|---------|---------|--------|------------|-------|
| Nbr of Residents | 514 | 148 | 510 | 1353 | 1360 | 577 | 440 | 1279 | 839 | 1514 | 842 | 3907 | 740 | 621 | 276 | 304 | 978 |
| Men | 266 | 69 | 232 | 664 | 679 | 292 | 216 | 605 | 424 | 715 | 408 | 1939 | 384 | 336 | 139 | 151 | 501 |
| Women | 248 | 79 | 278 | 689 | 681 | 285 | 224 | 674 | 415 | 799 | 434 | 1968 | 356 | 285 | 137 | 153 | 477 |
| Avg Age in Years | 19.5 | 19.2 | 22.2 | 22.7 | 21.4 | 20.8 | 21.8 | 20.9 | 20.7 | 20.5 | 19.4 | 20 | 21.3 | 21.1 | 20.9 | 20.3 | 21.6 |
| Nbr HH | 95 | 26 | 85 | 275 | 251 | 105 | 86 | 259 | 147 | 275 | 136 | 686 | 138 | 114 | 54 | 61 | 200 |
| Avg. HH size | 5.4 | 5.7 | 6 | 4.9 | 5.4 | 5.5 | 5.1 | 4.9 | 5.7 | 5.5 | 6.2 | 5.7 | 5.4 | 5.4 | 5.1 | 5 | 4.9 |
| Avg. cordes Land per HH inside and outside village | 10.4 | 9.3 | 11.2 | 11.2 | 11.8 | 9 | 18.1 | 20.5 | 21.3 | 16 | 14.8 | 12.4 | 13.2 | 22.2 | 39.6 | 7.6 | 26.3 |
| Avg. Resettlement Factor (Based on all land inside and outside village) | 1.928 | 1.615 | 1.855 | 2.266 | 2.172 | 1.636 | 3.531 | 4.151 | 3.677 | 2.869 | 2.395 | 2.099 | 2.454 | 4.06 | 7.744 | 1.501 | 5.249 |
| % Area cultivated (Field) or owned (Fallow) by women out of total area "owned" by village residents inside and outside village | 19.4 | 71.2 | 14.8 | 17.8 | 32.9 | 22.5 | 13.7 | 30 | 11.4 | 21.9 | 20.8 | 18.5 | 24.7 | 7.8 | 12.6 | 19.2 | 16.1 |

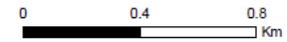
Annex 4: Thematic Maps of Ndoheuri







Owner's Gender in Ndoheuri



Source : GEOEYE 2011,
EEPCI EMP Department

Legend

Gender of cultivator

- Man (602 ha - 81%)
- Woman (140 ha - 19%)
- Land cultivated or owned by outsiders

- Pit
- Permanent and not returned facilities
- Settlement and protected area
- Village limit



EEPCI - Esso Exploration & Production Chad Inc.
EMP, Environmental Management Plan

Date : 2012-08-13

Author : EMP- IS Team

Map : Ndoheuri_OwnerGender.mxd

