

Esso Exploration & Production Chad Inc.

Village Impact Monthly Report

Land Use Mitigation Action Plan

December 2007

Prepared by the EMP Department

Executive Summary

This Monthly Survey of Land Use Mitigation Action Plan (LUMAP) activity provides information to EEPIC management and the IFC on the progress made in calculating, analyzing and reducing the Project impact on villages and households.

Tracking the impact on communities is the purpose of Village Impact Classification and the "Watch List" of villages' status. The classification follows the movement of a village from one category to another in order to judge the effectiveness of LUMAP mitigation measures or signal when the effect of ongoing project land take needs to be promptly addressed.

The village impact classification (severe, medium and low) is used to:

- Improve the targeting of EMP mitigation activities in the OFDA
- Determine and/or validate eligibility (actual versus estimated) for Supplemental Community Compensation
- Alert EMP on the need for Site Specific Plans and Cadastral Surveys

The December 2007 Village Impact Classification has:

- 7 severe impact villages
- 7 moderate impact villages
- 9 low impact villages

For the Watch List, LUMAP also tracks village land take and return. As of December 2007, three of the moderate impact villages are approaching the severe category:

- Begada
- Bela
- Mouarom

During 2007 LUMAP has developed Geographic Information System (GIS) mapping, socio-economic survey tools and information filters. These show that the number of At-Risk Households (Hh) in the most severely impacted village, Dokaidilti (for which the GIS survey has been completed) is two (2) out of eighty five (85) households. Similar surveys were ongoing in two other severe impact categorized villages through December 2007 and continuing on into the new year.

The body of this report conveys the data concerning village status and the evolution of project land take and return. It also explains the nature of the instruments being used to measure and monitor the evolution of the situation at the community level.

1. Village classification

1.1. Summary

The Village classification is calculated using land use (total amount of land; amount of temporary and permanent take) and socioeconomic criteria (less than 2/3 Corde (c) per Hh Member (HHM) before project and currently). Each criterion classifies a village using impact assessment criterion and categorizing into one of three categories: Severe, Moderate & Low. The final categorization of a village is done according to its worst placement in one of the three impact criterion. The next table show the December 2007 Classification.

Table 1 : Village Classification December 2007

Categories	Village
Severe	<ul style="list-style-type: none">• Dokaidilti• Dildo• Madjo• Mbanga• Béro• Danamadja• Ngalaba
Moderate	<ul style="list-style-type: none">• Madana Nadpeur• Missimadji• Mainani• Mouaroum• Béla• Maikéri• Bégada
Less	<ul style="list-style-type: none">• Ndoheuri• Bendo• Maïmbaye• Miandoum• Komé• Merméouel• Morkété• Kairati• Naïkam

The following subsection details all criteria scores for villages listed above.

1.2. Land Use Criteria

This table shows the Land Use Village Impact in terms of Permanent and Temporary Land Use. The already returned areas are not included. The total project land use is shown in term of village area percentage (see annex). Last month activities in land acquisition (↑) or land return (↓) are shown in Hectares. The criteria used for the final classification is the % of permanent land used within the village area.

Table 2: Land Use by Village in OFDA.

Village	Total Village Area (ha)	Permanent Not Returned		Temporary Not returned		Perm Not Returned + Temp Not Returned	
		Now	Last Month	Now	Last Month	Now	Last Month
Dokaidilti	812.4	15.4%	(↑ 1.1 ha)	3.9%		19.3%	(↑ 1.1 ha)
Dildo	1961.3	9.9%		0.5%	(↑ 1.9 ha)	10.4%	(↑ 1.9 ha)
Ngalaba	1879.4	6.5%		7.1%	(↓ 0.2 ha)	13.6%	(↓ 0.2 ha)
Béro	4239.7	6.2%	(↓ 2.4 ha)	6.0%	(↓ 7.0 ha)	12.2%	(↓ 9.4 ha)
Béla	2315.1	4.4%		6.0%	(↑ 3.6 ha)	10.4%	(↑ 3.6 ha)
Bégada	2478.6	4.3%		6.2%	(↓ 0.8 ha)	10.5%	(↓ 0.8 ha)
Mouarom	1585.4	4.3%	(↑ 0.6 ha)	4.4%	(↑ 0.6 ha)	8.7%	(↑ 1.2 ha)
Danmadja	449.4	3.7%		7.3%	(↓ 0.2 ha)	11.0%	(↓ 0.2 ha)
Maikéri	1208.1	3.5%		5.5%		9.0%	
Mainani	1696.2	2.8%		1.5%		4.3%	
Madjo	1921.3	2.6%		2.5%		5.1%	
Mbanga	3050.4	2.2%		6.7%	(↑ 4.4 ha)	8.9%	(↑ 4.4 ha)
Kairati	179.9	2.2%		0.2%		2.4%	
Madanan N.	323.1	1.3%		4.0%		5.2%	
Bendo	809.0	1.2%		0.8%		2.0%	
Ndoheuri	830.2	1.0%		1.1%		2.1%	
Komé	2569.3	1.0%		0.5%		1.5%	
Miandoum	4133	0.8%		0.6%		1.4%	
Missimadji	840.6	0.7%		3.7%		4.4%	
Naikam	1773	0.7%		0.6%		1.3%	
Merméouel	1121.2	0.6%		1.2%		1.8%	
Morkété	524.2	0.5%		0.4%		0.9%	
Maïmbaye	373.5	0.0%		0.0%		0.0%	

The criteria: Permanent Not Returned + Temporary Not Returned is used as the village project footprint at this date.

LEGEND	
Land Acquisition	(↑)
Land Return	(↓)
Severe	
Less Severe	
Moderate	
Least Affected	

1.3. Socioeconomic Criteria

The two socioeconomic criteria are related to the augmentation in villages of household falling below the resettlement factor of 2/3 cord per individual. See the annex for more details on the [Eligible After Project](#) and [Eligible by Project](#) criteria. The next table presents the scoring of all the villages by each of the two socioeconomic criteria.

Table 3 : Socioeconomic criterion values for December 2007.

Eligible After Project	Value Now	Since Last Month	Eligible by Project	Value Now	Since Last Month
Madjo	70%		Danmadja	24%	↑ 1%
Mbanga	69%	↑ 1%	Mbanga	18%	
Danmadja	45%		Madjo	17%	
Béro	40%		Béro	16%	
Ngalaba	33%		Bégada	15%	
Bégada	31%		Mouarom	14%	
Mouarom	28%		Ngalaba	10%	
Béla	27%	↑ 1%	Béla	11%	
Dokaïdilti *	20%		Missimadji	8%	↑ 1%
Missimadji	18%		Maïnani	7%	
Dildo	16%		Dildo	3%	
Bendo	14%		NDoheuri	2%	
Madanan N.	13%		Morkété	2%	
Maïnani	10%		Miandoum	1%	
NDoheuri	8%		Kaïrati	1%	
Miandoum	5%		Merméouel	1%	
Komé	4%		Komé	1%	
Merméouel	4%		Naïkam	1%	
Morkété	4%		Bendo	0%	
Kaïrati	2%		Madanan Nad.	0%	
Naïkam	1%		Dokaïdilti *	0%	

Notice that the scores (Value Now) are computed on declarative data given by a person affected by project land take. These data are collected through the EMP Socioeconomic Survey and Compensation Process and the accuracy is less than adequate. This is a system issue.

Therefore, on a going forward basis we will use the Cadastral Survey techniques in the EMP Socioeconomic Survey and Compensation Process to more accurately determine an individual's land use holdings and household. This will give us a more accurate assessment of the individual's impact and allow us to offer resettlement options as appropriate on a timelier basis. The other system improvements will help us determine if the resettlement options are providing sufficient livelihood restoration.

The classifications computed using measured data from Cadastral Survey or Fast Track Mitigation Survey are far more accurate. For example, Dokaidilti village was originally estimated to be severe in both land take and socioeconomic classifications. Once the Cadastral Survey data was analyzed this village is no longer in the Severe category, in fact it is in the Low category.

2. Land Acquisition Monitoring

Here is the list of all compensated Subjects (i.e. the land taken for different construction uses) in December.

Table 4: Summary of all compensated Subject in December.

Date	Subject	Sector	Type	Nbr Individual	Residency Village
12/31/2007	B312	Bolobo	Well pad	2	Béla
12/31/2007	B312	Bolobo	Well pad	2	Danmadja
12/21/2007	B239	Bolobo	Well pad	2	Danmadja
12/21/2007	B239	Bolobo	Well pad	2	Mouarom
12/18/2007	KF610	Komé	Flow Line	1	Bégada
12/18/2007	KF610	Komé	Flow Line	16	Mbanga
12/18/2007	KWL-K165K629	Komé	Water Injection Line	1	Béro
12/18/2007	KWL-K165K629	Komé	Water Injection Line	27	Mbanga
12/11/2007	BF580	Bolobo	Flow Line	33	Béla
12/11/2007	BF580	Bolobo	Flow Line	3	Danmadja
12/11/2007	BF580	Bolobo	Flow Line	1	Komé

3. Socioeconomic monitoring

This section present the current status of socioeconomic surveys carried out and Eligible people identified. The next figure summarizes the steps followed to find people Eligible for the resettlement program.

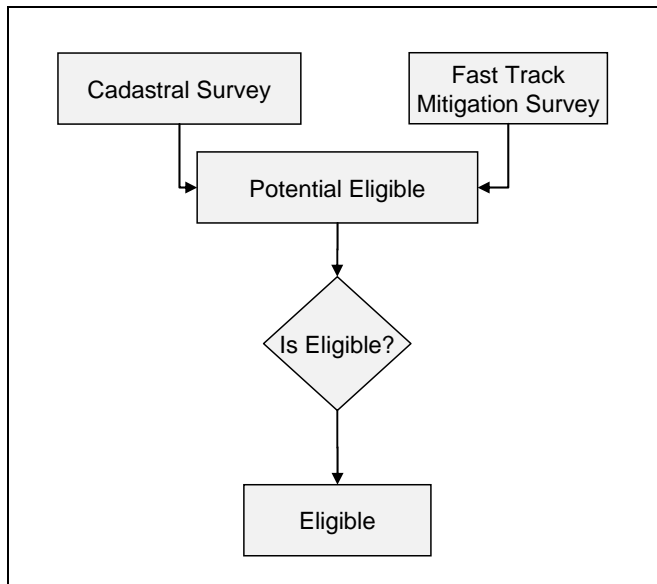


Figure 1 : Eligible identification process.

Please note that Eligibles were selected earlier in 2007 with the traditional methodology used by EMP. However, this form has been reviewed and revised to create uniformity in inquiries. This monthly report focuses only on Eligibles determined by Cadastral Survey and Fast Track Mitigation Survey's new form. The following subsections detail survey results and Eligibles identified.

3.1. Cadastral Survey

The Cadastral Survey is one of the two processes that identify any potential Eligible. The following table resumes all Cadastral Surveys performed in the previous month.

Table 5 : Total number of HH Survey by village.

Village	HH survey in December	HH Survey at Year end 2007	Total HH expected
Dildo	40	83	200
N'galaba	31	77	300

The next graph shows the total number of household surveyed from May to December.

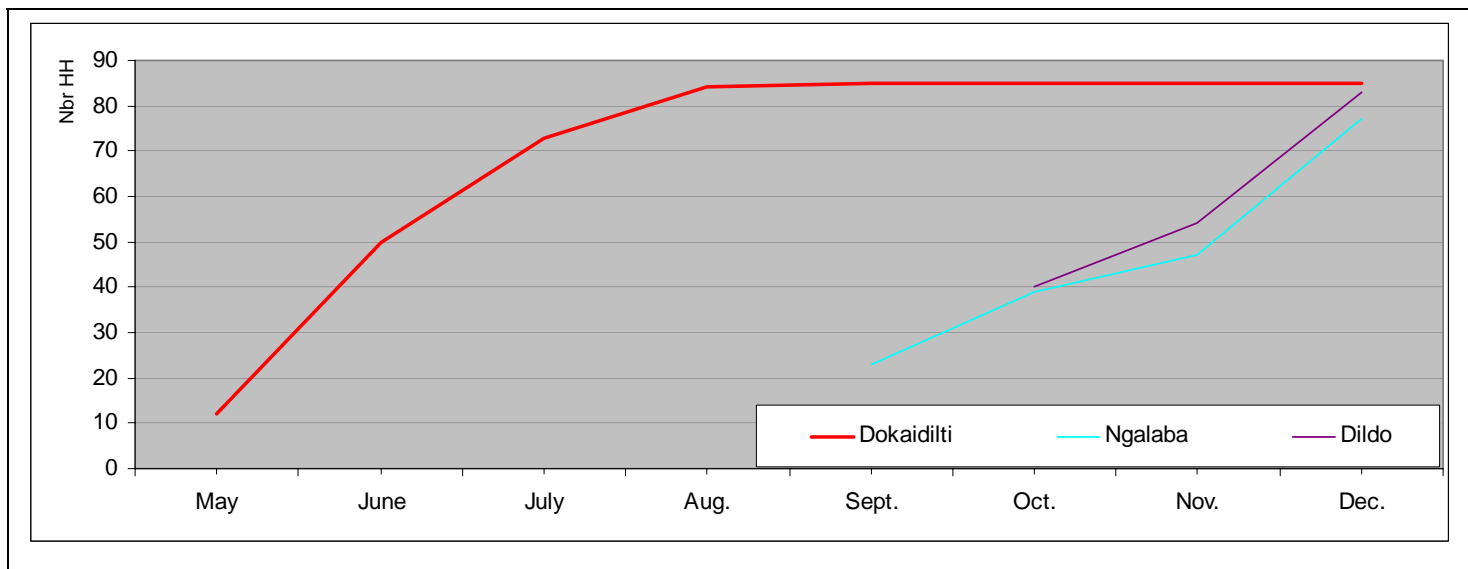


Figure 2 : Number of HH surveyed by Cadastral Survey Teams.

3.2. Fast Track Mitigation Surveys

The Fast Track Mitigation Survey team uses the Cadastral Survey techniques on individuals identified in the EMPIS Compensation database that were: compensated in the past who appear to be resettlement eligible and/or recently compensated who appear to be resettlement eligible.

Fast Track Mitigation Surveys started in December 2007.

As presented in the next table, **30** household were surveyed in December. At present we estimate that there are approximately 500 households to be surveyed by this team.

Table 6 : Total number of HH Surveys in December by the Fast Track Team.

HH survey in December	Total HH Survey
30	30

Starting next month, a graph will present the total number of survey over the month (like the previous section).

3.3. Potential Eligible

A Potential Eligible is an individual surveyed by the Cadastral or Fast Track process who seems to present a resettlement factor below 2/3 (red flag). However, more analysis is needed to determine the real eligibility of the individual.

The next table shows how many cases are still in analysis process.

Table 7 : Remaining Potential Eligible to analyze

Village	December		2007
	Cadastral Survey	Fast Track	Total

For December no available results for now. Coming next month.

As time passes and analyses are completed, all potential cases should be solved and complete total (previous table) would be equal to 0.

3.4. Eligible

Eligibles are those who, after all analysis, present a resettlement factor below 2/3. These eligible are presented with the various resettlement options and, depending on their choice, integrated to the next promotion of farm/off-farm training. Here is the summary since the beginning of the year.

Table 8 : Number of Eligible declared in December.

Village	December	Total over 2007
Dokaidilti	0	2

By comparing the number of HH and the number of eligible for a village (next figure), we get the picture of the impact of the project. So far only Dokaidilti's cadastral survey is completed so that it is possible verify recently affected people's true eligibility but N'galaba and Dildo will follow in the coming months.

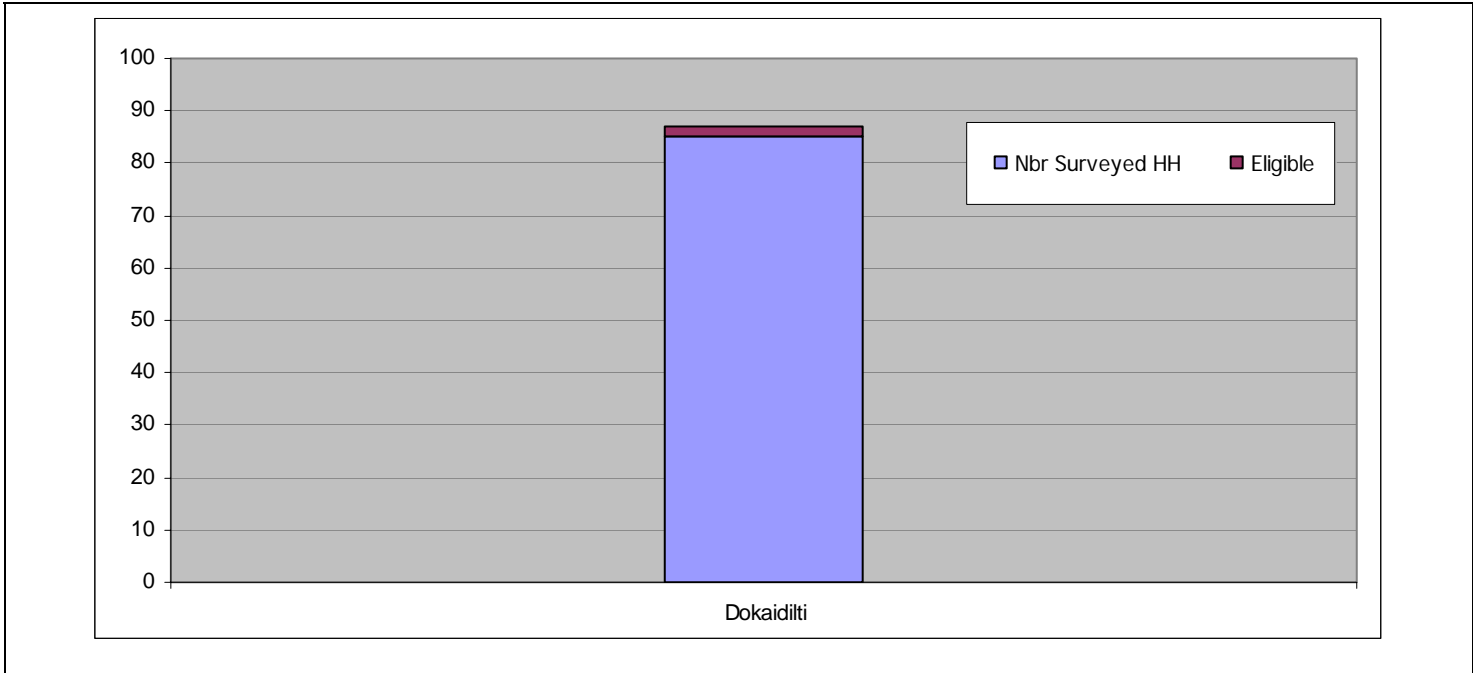


Figure 3: Surveyed HH and Nbr eligible for 2007

4. Land Return Monitoring in OFDA¹

4.1. Compensated and Returned Land by Land Use Type

This section presents the compensated and returned areas. The compensated land is divided in four Land Use Types:

- 1) Permanent with Public Access
 - 2) Permanent with No Public Access
- } Permanent Land Use
-
- 3) Temporary Returned Without Restriction
 - 4) Temporary Returned With Restriction
- } Temporary Land Use

Figure 4 presents the contribution of each Land Use Type in the total Compensated Land. The land returned is also noted but does not appear in the chart.

¹ OFDA Area includes the oil concessions of Miandoum, Bolobo and Komé (See map in Annex 5.3)

4.2. Compensated and Returned Land by Facility Type

It is interesting to look in more detail at each of these categories, and see the different facility types that compose them. The tables and charts on the next pages show the contribution of the different facility type that exist in the four land use types, as well as their land acquired and returned status

Land Use Type	Total areas in Hectares		This month areas in Hectares	
	Compensated	Returned	Compensated	Returned
1) Permanent With Public Access	555.7	20.0	0.6	0.8
2) Permanent With No Public Access	796.3	37.3	1.2	1.6
Sub Total Permanent	1352.0	57.3	1.8	2.4
3) Temporary Returned Without Restriction	396.7	161.8	0.0	0.0
4) Temporary Returned With Restriction	1378.0	348.0	19.5	13.4
Sub Total Temporary	1774.7	509.8	19.5	13.4
TOTAL (Permanent + Temporary)	3126.7	567.1	21.3	15.8

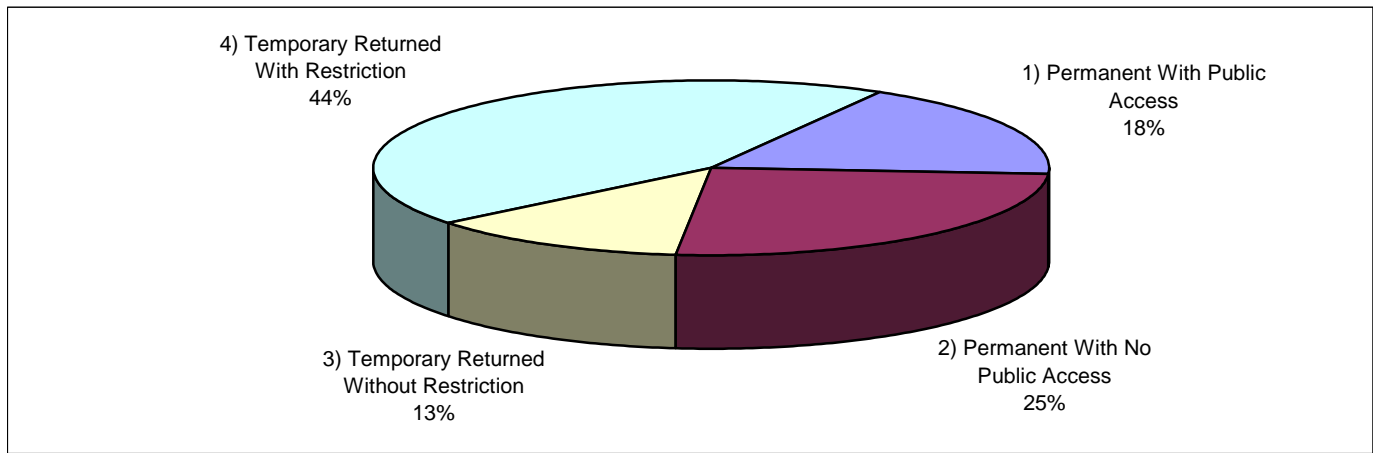


Figure 4: Total Compensated and Returned Land in OFDA

Facility Type	Compensated	Returned	% Returned
Main Road	76.4	0.0	0.0
Access Road	479.3	20.0	4.2
Total	555.7	20.0	3.6

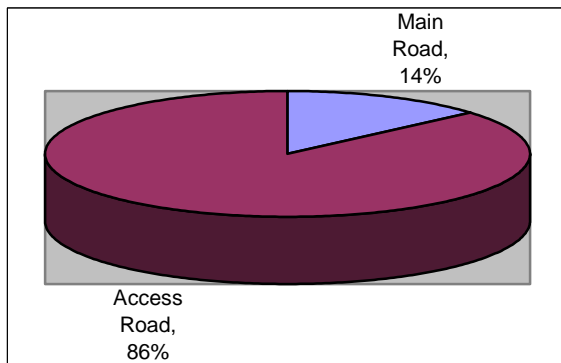


Figure 5: Land Use Type 1) Permanent with Public Access (Areas in hectares)

Although the area taken by roads is not small, the main road now serves as the second economic artery behind the national highway for moving local production from the OFDA region, the Prefectures to the south of the OFDA, and bordering portions of the Central African Republic. The access roads are convenient for the many bicycles, hand carts; oxcarts and motorcycles inhabitants have acquired with their compensation money and are frequently used by farmers going to their fields, which branch off on the footpaths only when they get near their destination.

Facility Type	Compensated	Returned	% Returned
Camp ¹	272.0	0	0.0
Airport	170.5	20.5	12.0
Post Completion Well Pad	245.4	7.8	3.2
Gathering Station	31.9	4.1	12.9
M1 and B1	26.2	4.9	18.7
Waste Mangement Facility	12.2	0	0.0
Ditch	22.4	0	0.0
Electric Pole	12.7	0	0.0
Others ²	2.9	0	0.0
Total	796.2	37.3	4.7

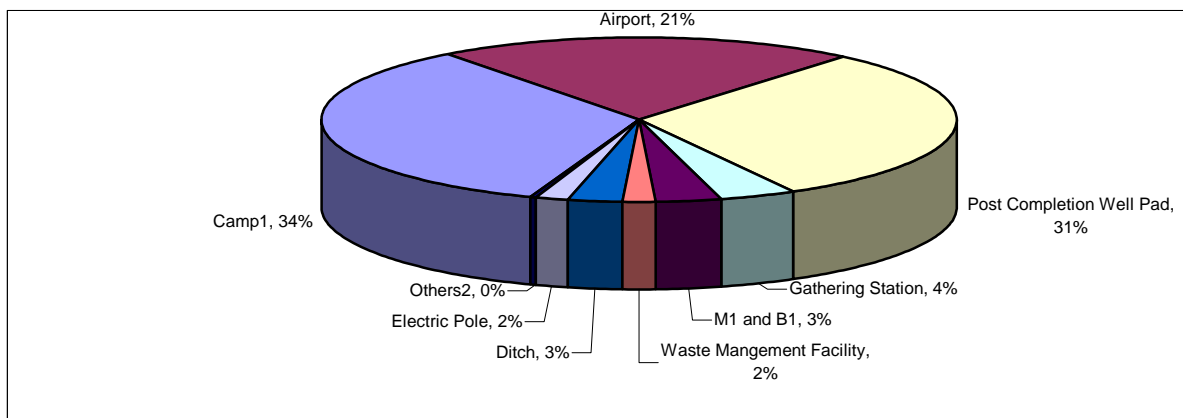
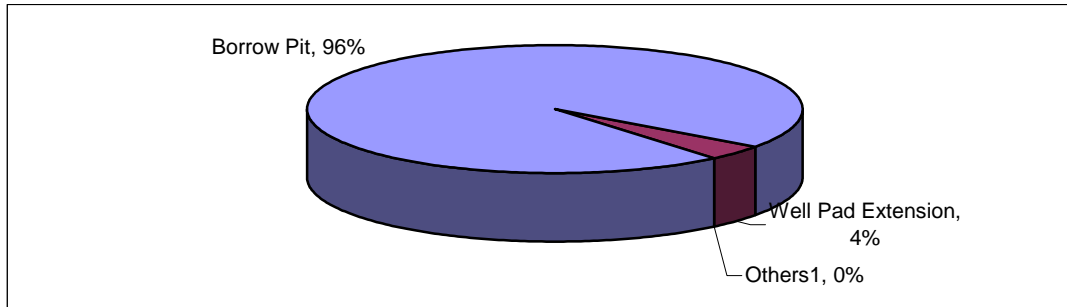


Figure 6: Land Use Type 2) Permanent with No Public Access (Areas in hectares)

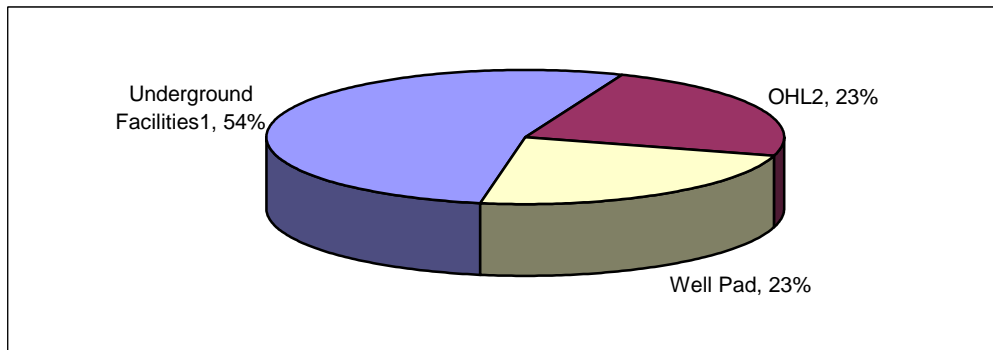
Facility Type	Compensated	Returned	% Returned
Borrow Pit	381.5	157.1	41.2
Well Pad Extension	15.0	4.6	30.7
Others ¹	0.3	0.0	0.0
TOTAL	396.8	161.7	40.8



1. Water Line Access & Soil Boring

Figure 7: Land Use Type 3) Temporary Returned Without Restriction (Areas in hectares)

Facility Type	Compensated	Returned	% Returned
Underground Facilities ¹	736.7	44.1	6.0
OHL ²	320.9	27.2	8.5
Well Pad	320.3	260.3	81.3
TOTAL	1377.9	331.6	24.1



1. Flowline, Gathering Line, Water Injection Line, Trunkline, Pipeline, Underground cable
 2. 33 Kv, 66 Kv, 132 Kv

Figure 8: Land Use Type 4) Temporary Returned With Restriction (Areas in hectares)

The restrictions on using land covering underground facilities are not onerous. No planting of trees, digging of holes, or construction of buildings, all of which might damage the lines or prevent easy access when needed. Otherwise any cultivation is allowed. Acquisition of a special work-over rig for well maintenance has further reduced the well pad area from the 1 Ha. used for drilling. The areas under the 66Kv and 33Kv and other electrical lines present more of a challenge. The greatest problem is accessing the power poles for repairs – frequent enough in this lightning-prone area. How access is achieved is constrained by hazards related to safety: the growth of high grasses or normal crops during the rainy season impedes visibility for repair crews and security patrols, who risk

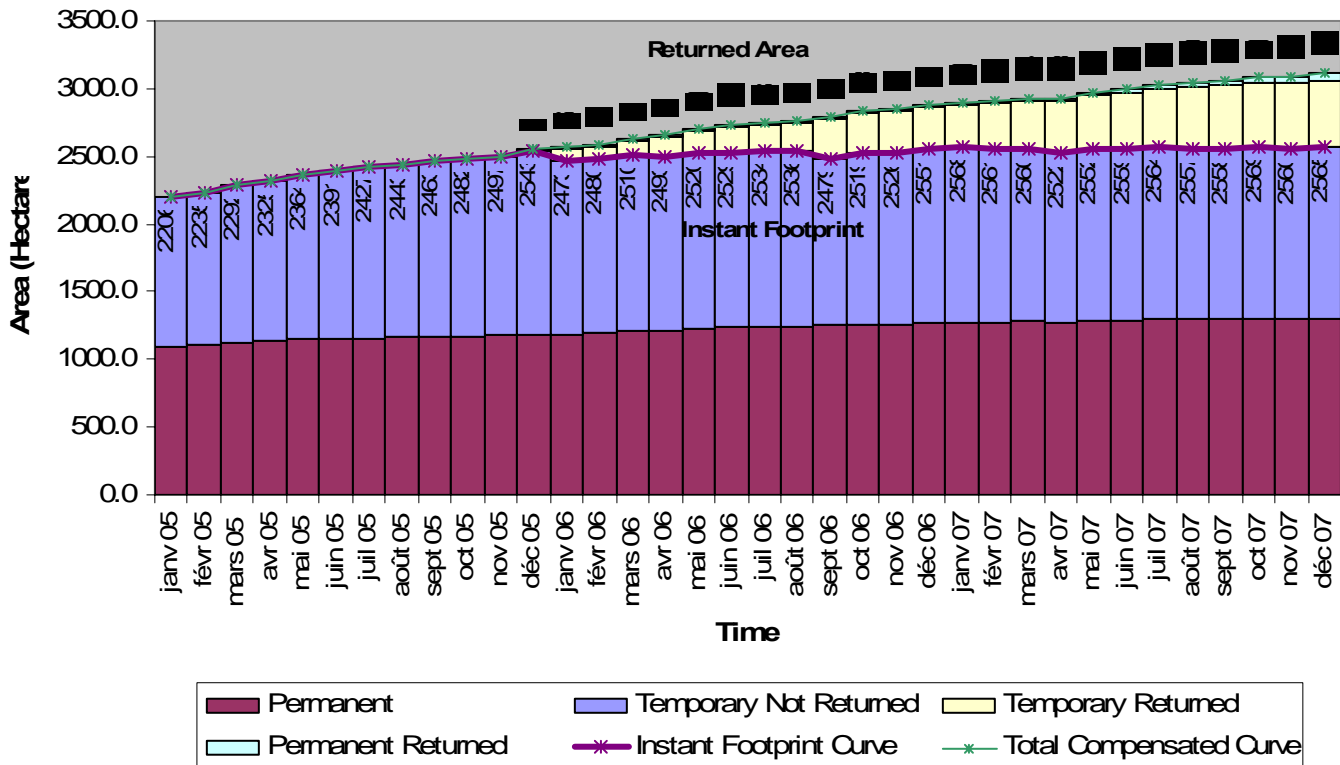
colliding with people, cars, animals, bicycles, etc. making their way along the obscured footpaths. The risk is increased at night. Secondly, crops or grasses will be burned off intentionally or by bush fires at the end of the dry season, depositing carbon on the lines and increasing the probability of short circuits. EEPCL plans to resolve this seeming dilemma by planting the OHL ROW in low growing forage crops that will be used during the rainy season by children gathering fodder for their tied-up domestic animals and by the animals themselves once the rains have stopped.

4.3. Project Footprint

This section presents the evolution of the project footprint since January 2005. It is interesting to see the amount of land returned (the area between the two curves). The purple curve shows the current footprint (compensated and not returned yet) and the green curve shows the total compensated land, the green curve labels are the total returned area.

As you can see, the absolute Project footprint has not grown since December 2005 (2 years).

Land acquired and returned since January 2005



5.0 Summary

This report covers Land Use Mitigation Action Plan progress in the month of December 2007. As the final report for the year, it also presents the final status of achievements in 2007.

As of the end of 2007 the LUMAP had developed tools for measuring project impact at the village level. These tools were being used to monitor ongoing land acquisition and to understand the impact of previous land use.

At the beginning of 2007 the tool being used depended on information given by individuals being compensated for land and was, therefore, subject to bias. How honest was the individual being in declaring his land holdings and number of dependents? Did s/he see some advantage in misreporting or not? With this initial tool 5/61 villages in the OFDA seemed in 2006 to have been severely hit by project land needs (Barclay/Koppert Report). By the end of 1Q2007 EMP had developed a tool using GIS land measurements; this system showed 4 severely impacted villages. Since the tool needed further fine-tuning the number of severe villages was kept at 5. In 3Q2007 the tool was refined with the addition of social measurements of the number of individuals/Hh potentially At-Risk in a village, i.e. holding less than the 2/3c per HhM needed to be viable if dependent on agriculture alone. With these additional measures the total number of severely impacted villages rose to 7. At the end of 2007 this number had not changed. As we go forward using the Cadastral Surveys, we will validate the village impact severity for the currently categorized severe impact villages and the medium impact villages on our watch list.

LUMAP also introduced more quantitative measures (GIS mapping and in-depth social surveys) that presented a clearer picture. One village-wide survey had been completed by end 2007 and two (2) were on-going. The finished survey, in Dokaidilti, the most severely affected village (on the basis of land take) showed that thirteen (13) Hh had less than enough land, however, three (3) of the thirteen (13) has not been impacted by Project land take.

The Fast Track Survey Team is using existing data to identify and target individuals/Hh At-Risk and then use the filtering tools to validate impact and eligibility for Fast Track Mitigation.

As an example, the filtering tools were used in Dokaidilti. It was determined that only two (2) (2 out of remaining 10) households were truly at risk. This was the actual degree of impact at this allegedly "most severely affected village". It is to be hoped that the on-going surveys follow this trend.

The main objective of the Fast Track Survey Team using the filter is to identify individuals/Hh in villages that are not scheduled for Cadastral Survey (not severe impact and not on watch list) who may be at risk due to Project land take. The unreliability of the Compensation Data collection method (declarative from the land user) used to determine eligibility for resettlement prompted LUMAP's further investigation of their situation. This "Fast Track Survey Team" carried out 30 surveys in December 2007; the data has not yet been analyzed.

The most basic mitigation measure possible for reducing project impact is the reclamation and return of land to village use. This monthly report also tracks land return data. In December 2007 **15.8 Ha**, making a total of **567 Ha** by end 2007.

5. Annex

5.1. Annex 1: Land Use Criteria

Criteria 1: Land use & footprint

Two criteria are presented for the village Land Use impact. Both of them represent the percentage of village area used by the project within each village. The boundaries of the village are not official and are computed based on a global survey of village limit. The thresholds represent “natural breaks” or large numerical gaps in between villages, which tend to fall in groups, as of January 2008.

A. Permanent Land Use Percentage

Criteria used for the final classification. Portion of village used **permanently** by project facilities.

$$\frac{\sum \text{Permanent Not Returned}}{\sum \text{Village Area}}$$

Sub Threshold	
Between	Score
> 5%	2
2.1% - 5%	1
0% - 2%	0

B. Current Village Footprint

Gives a view of the project land use considering the temporarily, but not yet returned, compensated land. The final percentage is computed by adding the not returned land temporarily and permanently used by the project

$$\frac{\sum \text{Permanent Not Returned} + \text{Temporary Not Returned}}{\sum \text{Village Area}}$$

Sub Threshold	
Between	Score
> 7%	2
3.1% - 7%	1
0% - 3%	0

5.2. Annex 2: Socioeconomic Criteria

Criteria 1: % Eligible after Project

Description: Percentage at the village level of the number of individuals below the resettlement factor of 2/3, regardless of their situation before any project impact.

Rule:

$$\frac{\sum (\text{All HhM of All eligible Hh after land take, regardless their previous situation})}{\text{Village Population}}$$

Village Population

Threshold:

Threshold Criteria 2		
	Min	Max
Severe	50.1%	100%
Moderate	20.1%	50%
Low	0%	20%

Criteria 2: % Eligible by Project

Description: Percentage at the village level of the number of individual that were not eligible before any project impact (the resettlement factor > 2/3) and became Eligible after project impact (the resettlement factor < 2/3).

Rule:

$$\frac{\sum (\text{All HhM of All Hh those are not eligible before land take & are eligible after Land take})}{\text{Village Population}}$$

Village Population

Threshold:

Threshold Criteria 3		
	Min	Max
Severe	20.1%	100.00%
Pale Severe	12.1%	20.00%
Moderate	9.1%	12.00%
Low	0%	9%

Chad Project Concession and Facilities

