Esso Exploration & Production Chad Inc.

Village Impact Quarterly Report

Land Use Mitigation Action Plan

Third Quarter 2009

Prepared by the EMP Department

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List of Acronyms & terms used in this report

Hh	Household.
CdM	Household Chief (Chef de Ménage)
HhM	Household Member. Include the CdM and all it dependents, regardless their age.
LT	Land Take.
Eligible	Generic term to designate an individual that may be eligible to the EMP Resettlement Program.
Potential Eligible	Individual that may be eligible to the EMP Resettlement Program. Analysis must be completed.
True Eligible	Individual eligible to the EMP Resettlement Program.
EMP-IS	EMP Information System: manages Land Acquisition, Socioeconomic and Land return data.
Land Survey	Formally called Cadastre survey. Refer to the measurement of every field, fallow & house of households.
Project Footprint	Total area occupied by the project at a given time (e.g. Compensated but not returned land)

Executive Summary

The Quarterly Village Report provides information to Esso Exploration & Production Chad Inc (EEPCI) management and the International Finance Corporation (IFC) on the progress made in calculating, analyzing and reducing the EEPCI Oil Project (Project) land use impact on villages and households.

Tracking and analysis of the land use impact is the purpose of Village Impact Classification and the "Watch List". The classification follows the movement of a village from one category to another in order to judge the effectiveness of Land Use Mitigation Action Plan (LUMAP) mitigation measures or to signal when the effect of ongoing project land take requires the Project to review the situation and adjust plans as per the Environmental Management Plan (EMP) principles.

The village impact classification (high, approaching high, medium and low) is also 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 Team to the need for Site Specific Plans and Land Survey needs

The Third Quarter 2009 (3Q09) Village Impact Assessments status:

- 4 high impact villages
- 4 approaching high villages
- 4 moderate impact villages
- 12 low impact villages

LUMAP maintains a "Watch List" (approaching high) that tracks village land take and return. As of September 2009, three (3) of the moderate impact villages are approaching the high category because of continuing land acquisition and number of people eligible:

- Bela
- Maikeri
- Mouarom

The primary accomplishments of this quarter are:

- Completion of Madjo
- Decision to extend the mapping of Bero to the entire village, including the distant quartier Moudoudoigne
- The Kome and Bolobo oil fields in fill drilling program is progressing on a fault block by fault block basis, using pads constructed prior to the heavy months of the rainy season. The Village Land Use Surveys are aligned with the fault block in fill drilling schedule. An explanation of the fault block in fill drilling program and the village land use survey process is described in Annex 5.4.
- The manner in which the fault block in fill drill program interfaces and aligns with the goals of the LUMAP to rapidly identify At Risk households and ensure appropriate Resettlement options is also described in Annex 5.4.

The village land use survey work plan for the upcoming 4th quarter of 2009 includes:

- Final topographic measures of Bero fields inaccessible in 3Q because of high water.
- EMP-IS integration of Bero HH dossiers with the topographic information on the fields of each HH.
- Finish survey of all Red Flag HH determined to be potentially At-Risk in villages not undergoing full village surveys.
- Evaluation of Red Flag HH data to determine if full Village Land Use Surveys may be needed in given villages.

Village classification

1.1. Summary

The original Village classification was calculated using a land use (area covered by temporary and permanent take) and two socioeconomic criteria (less than 2/3 Corde (c) per Hh Member (HhM) before project and currently). Each criterion classifies a village into one of four categories: High, Approaching High, or Moderate or Low. **The final categorization** of a village is done **according to its worst placement** by the land use or socio-economic criteria. However, with the village land surveys a more precise socio-economic criterion is possible through the investigation of the village, using the new Village Land Survey methodology. The single, more reliable criterion is the number of non-viable individuals among the total population of the village. For villages where the survey is not completed, we have to rely on declared data collected during compensation, therefore the criteria becomes individuals made non-viable by Project compared to the population of the village.

Once the Village Land Use Survey is complete in a given village, a Site Specific Plan is developed to address heavy impacts. After the site specific plan is executed, the modification in impact is shown on the table below, which represents the **current Quarter's situation** and any residual impact on Site Specific completed villages.

Table 1 : Village Classification Quarter Just Ended

Categories	Village
High	• Bégada • Ngalaba • Béro • Danmadja
Approaching High (Watch List)	• Mouarom • Maikeri • Béla • Madjo
Moderate	• Mbanga • Madana Nadpeur • Maïnani • Missimadji

Low	• Dokaidilti • Dildo • Kaïrati • Bendo • Ndoheuri • Komé • Miandoum • Naïkam • Merméouel • Morkété • Koutou Nya • Maïmbaye

What has changed?

- Madjo survey has been completed and Bero is approaching completion. Both were slowed by seasonal flooding of fields and access roads.
- The analysis of the Begada and Mbanga village survey data was completed during the third Quarter and it turns out that the socio-economic situation is better than expected based on the declarative data in the Compensation Database (previous system); as detailed in following section, Mbanga is now in the moderate category:

Table 2: Site Specific Plan Development

Village	Site Specific Plan Developed?	Site Specific Plan Implemented?	Residual Impact
Dokaidilti	Yes	Yes	Low
Dildo	Yes	Yes	Low
Ngalaba	Yes	Yes	Low
Bégada	Yes	In Progress	TBD
Béla	Yes	In Progress	TBD
Danmadja	Yes	In Progress	TBD
Mbanga	Yes	In Progress	TBD
Mouarom	Yes	In Progress	TBD
Madjo	In Progress	No	TBD
Bero	No	No	TBD

TBD: To Be Determined

1.2. Land Use Criteria

This section covers the project land use part of the classification. The criterion is the **% of Permanent + Temporary Not Returned** area of the village. The thresholds for the different category are shown in annex 6.1. Villages are sorted by the % of this criterion, from the highest to the lowest value. Note that some villages can pass from High to Moderate or Moderate to Low as temporary land is returned:

Table 3: Land Use by Village in OFDA.

Village	Total Village Area (ha)	Permanent + Temporary Not Returned		
		Past Quarter (% of Village Area)	Current Quarter (% of Village Area)	Delta (Hectares)
Dokaïdilti	812.4	**16.4**	**15.9**	**- 4.3**
Ngalaba	1879.4	**12.9**	**13.1**	**+ 3.7**
Bégada	2478.6	**13.1**	**12.7**	**- 6.9**
Béro	4239.7	**12.5**	**12.5**	**+ 2.9**
Danmadja	449.4	**12.2**	**11.5**	**- 2.8**
Mouarom	1585.4	**9.7**	**9.5**	**- 2.3**
Dildo	1961.3	**8.9**	**8.9**	
Maïkéri *	1208.1	**8.5**	**8.6**	**+ 1.7**
Béla	2315.1	**9.0**	**8.3**	**- 14.6**
Mbanga	3050.4	**6.4**	**6.0**	**- 12.5**
Madjo	1921.3	**5.6**	**5.7**	**+ 1.1**
Madanan N.	323.1	**5.2**	**5.2**	
Maïnani	1696.2	**4.6**	**4.5**	**- 1.8**
Missimadji	840.6	**3.7**	**3.7**	
Ndoheuri	830.2	**2.1**	**3.1**	**+ 8.4**
Kaïrati	179.9	**2.2**	**2.2**	
Merméouel	1121.2	**1.8**	**1.8**	
Miandoum	4133	**1.6**	**1.6**	
Bendo	809.0	**1.4**	**1.4**	
Naïkam	1773	**1.4**	**1.4**	
Komé	2569.3	**1.0**	**1.1**	**+ 1.5**
Morkété	524.2	**0.7**	**0.7**	
Koutou Nya	1819.6	**0.6**	**0.6**	

* Maikeri shows the effect of both the original 3 Field and Satellite projects. The impact of each is currently being calculated

- Note that Madjo's Village Survey shows that in terms of land, the village is only in the Moderate category, rather than High as it was originally classified.

- The total balance of land acquired or returned in 3Q09 is -25.9 ha; 25.9 more ha of land have been returned than acquired in 3Q09, due to restored Borrow Pits returned.)

We can see that Begada, Bela and Bero are the villages where most of the land acquisition related to infill drilling has occurred. In Mouarom, where the first infill wells were drilled in Bolobo oilfield, land return has started and more land has been returned than acquired.

It is also important to understand that the new facilities are now overlapping old facilities. At the present time, it is not possible to make a simple addition or subtraction of the land acquired or returned (delta column) to the value of the previous quarter to compute the percentage of village used for the actual quarter.

The following charts detail land use in the High and "Approaching High" villages listed in Table 1:

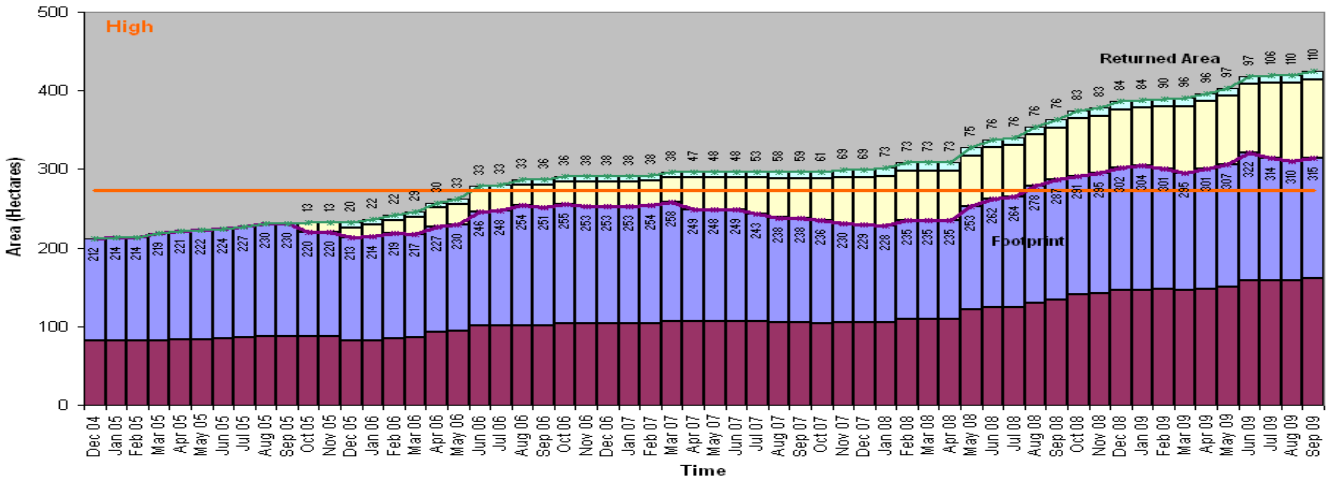


Chart 1: Land Acquired and Returned in Begada

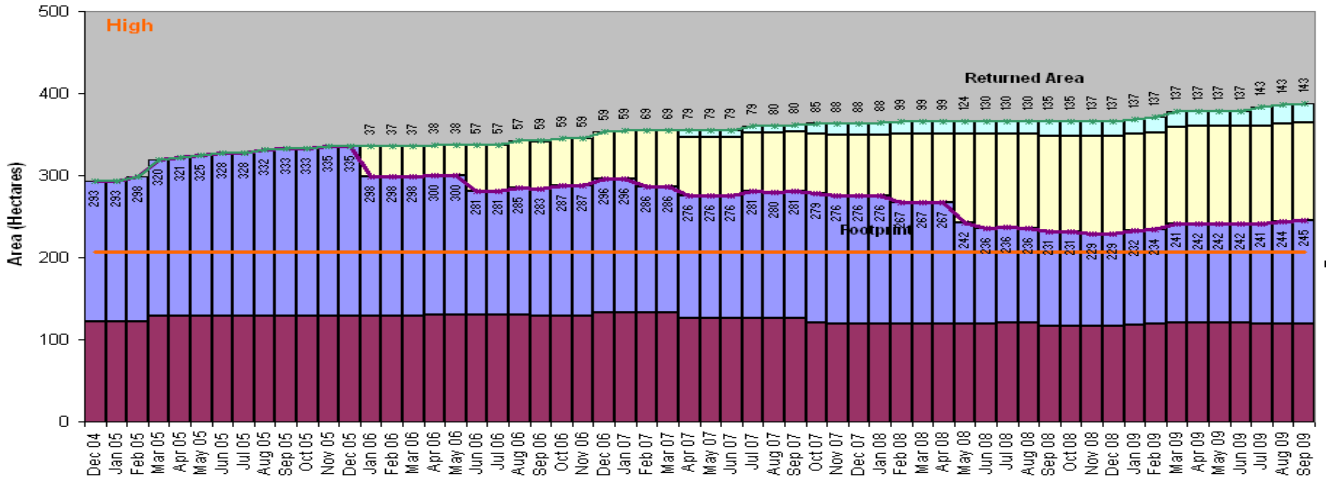


Chart 2: Land Acquired and Returned in Ngalaba

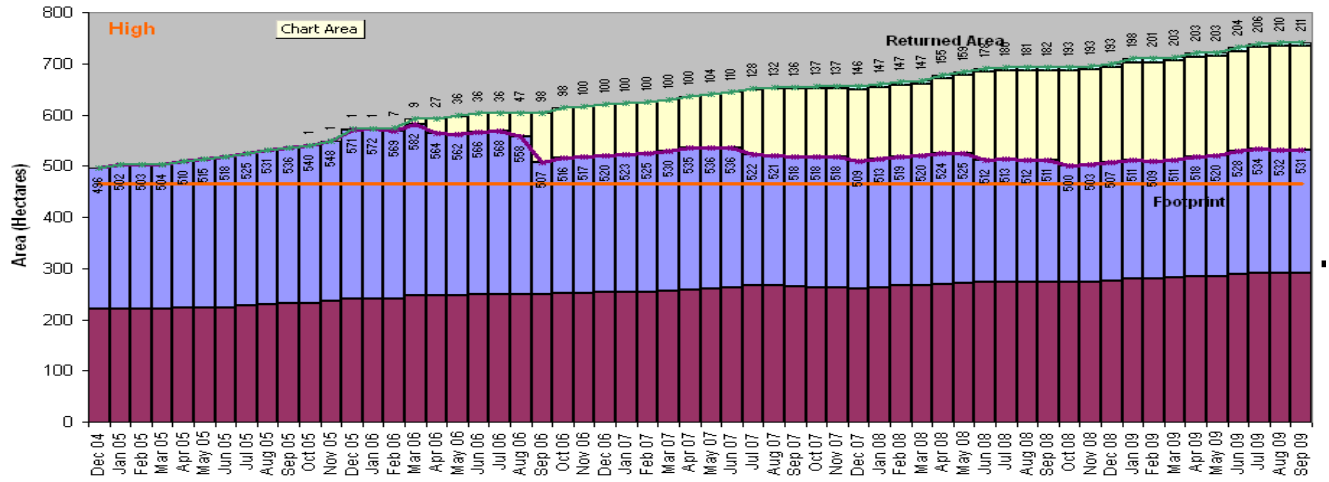


Chart 3: Land Acquired and Returned in Bero

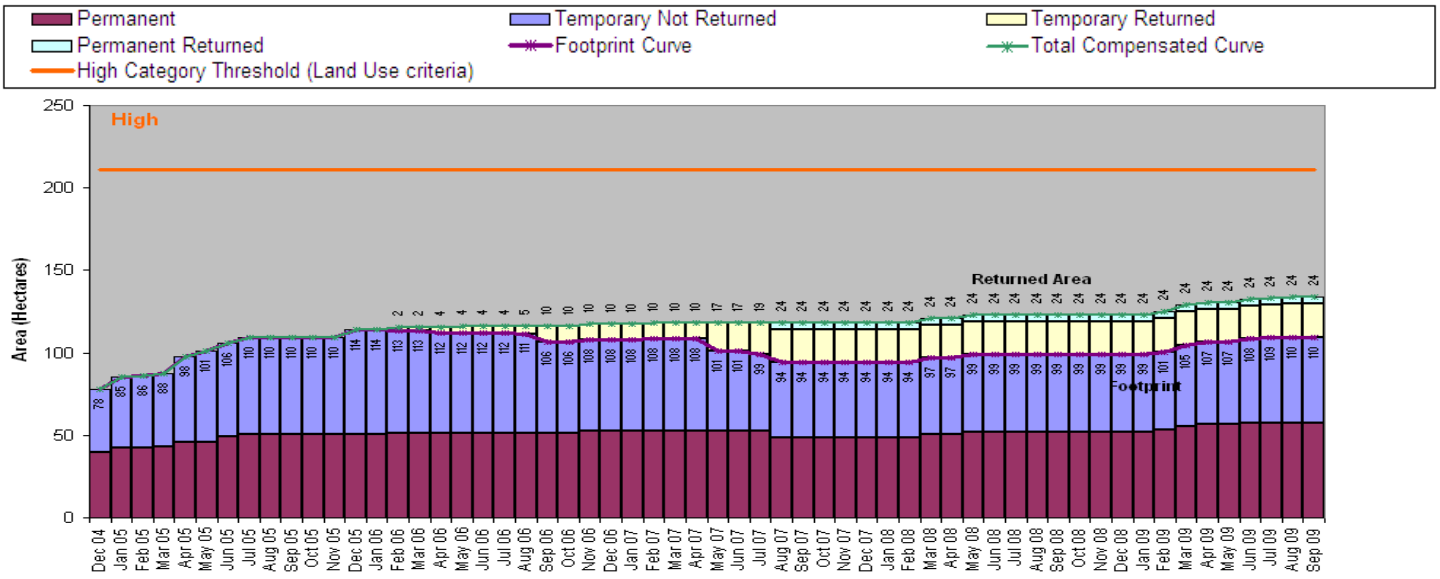


Chart 4: Land Acquired and Returned in Madjo

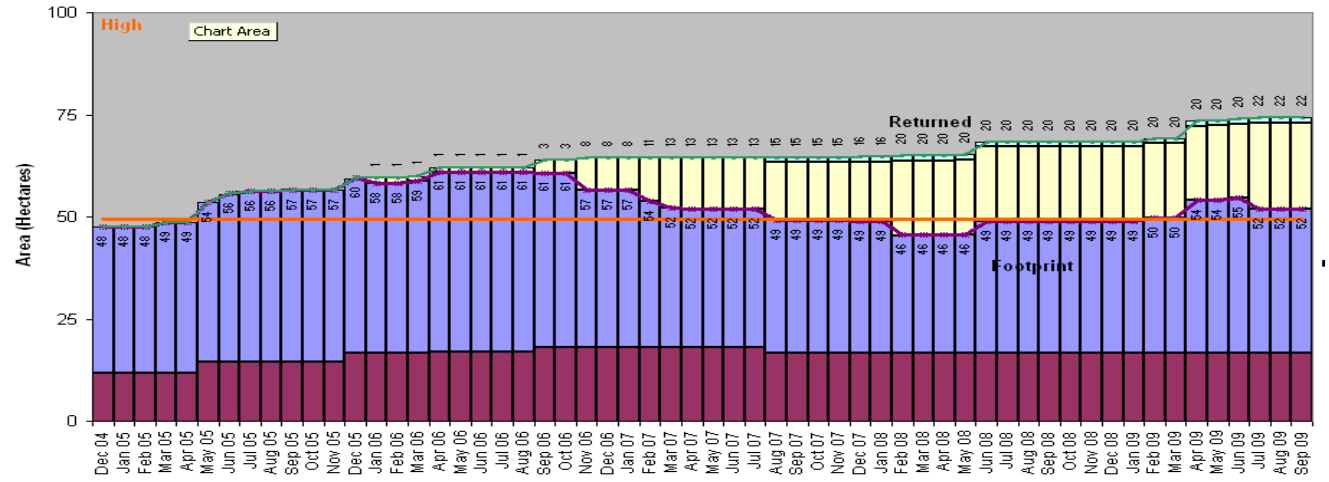


Chart 5: Land Acquired and Returned in Danmadjia

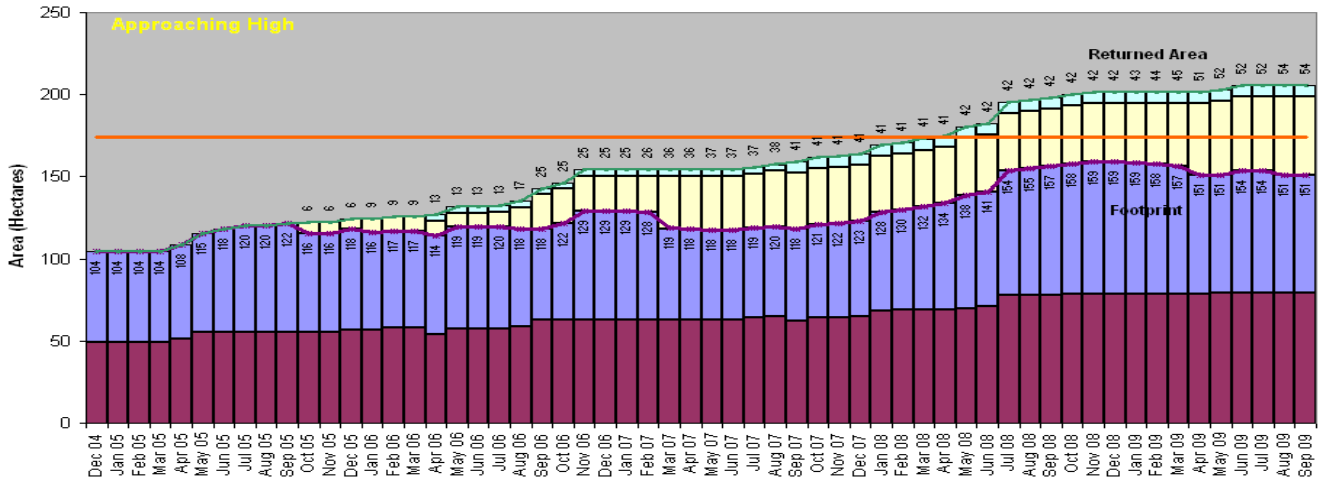


Chart 6: Land Acquired and Returned in Mouarom

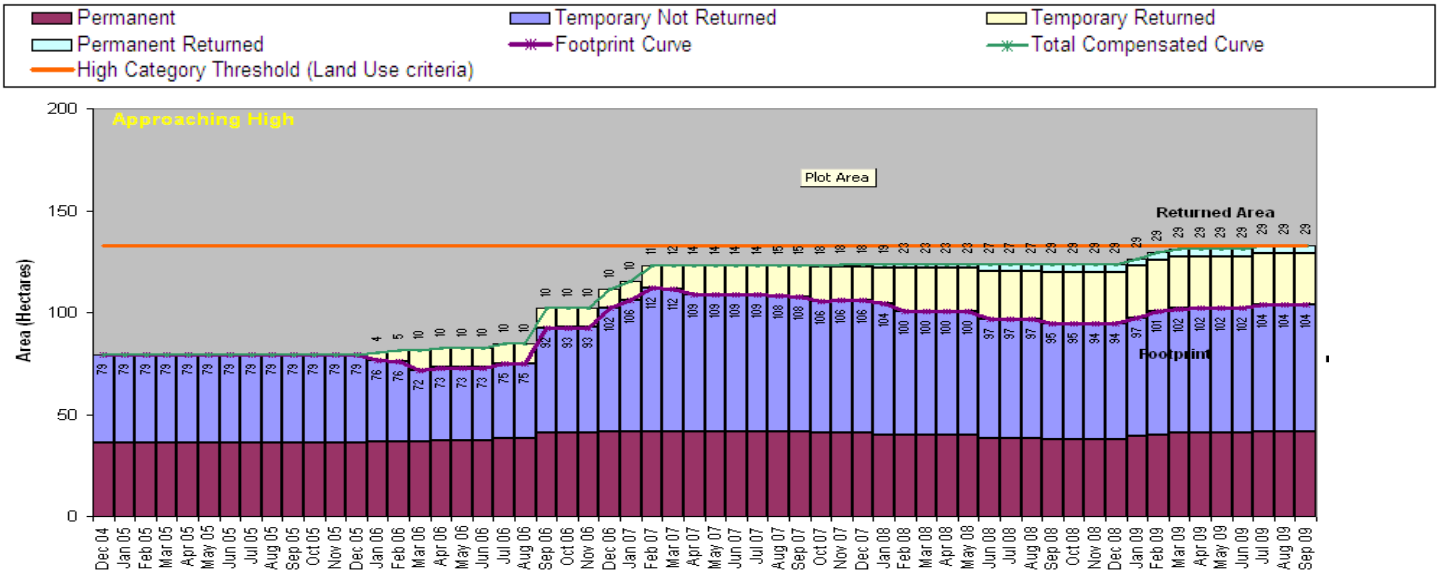


Chart 7: Land Acquired and Returned in Maikeri

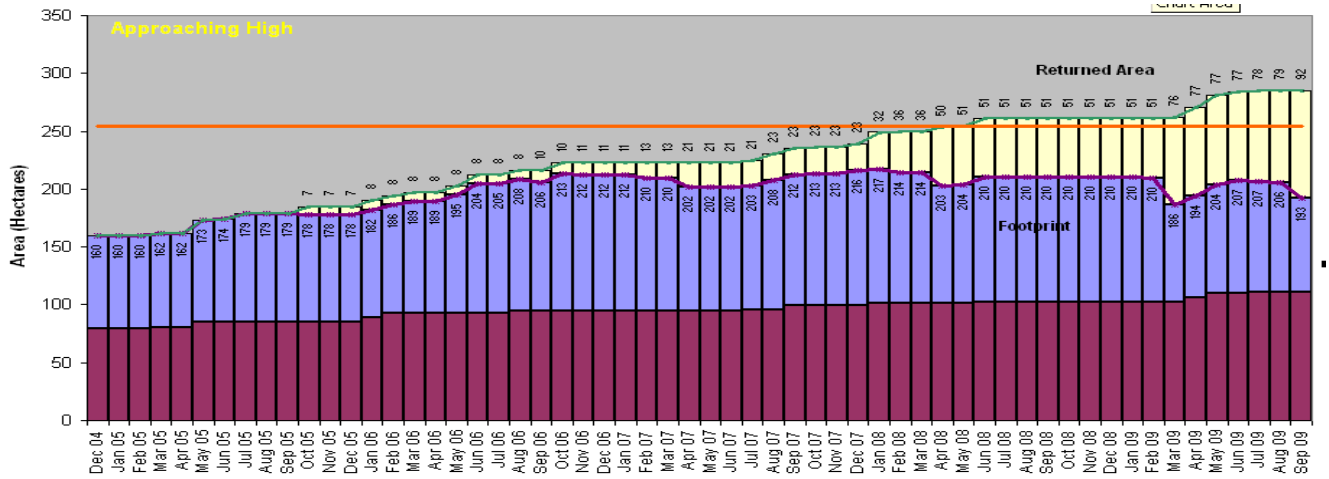
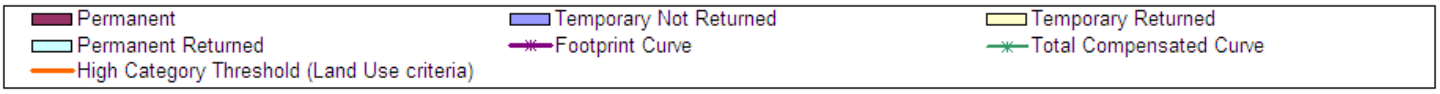


Chart 8: Land Acquired and Returned in Bela



1.3 Socioeconomic Criteria

Two socioeconomic criteria were initially used to calculate the Project's social impact indicated in the next table (Table 4). The data are derived from the compensation database (See the annex for more details):

1. Individuals already non-viable before they surrendered land to the project ,and
2. Individuals made non-viable by project land-take.

Table 4 : Percentage of individual made non-viable by project land take according to compensation database

Total non-viable individuals today	Value Now	Since Last Quarter	Made non-viable by project	Value Now	Since Last Quarter
Béro	47 %		Béro	18 %	
Missimadji	26 %	↓ 3 %	Missimadji	11 %	↓ 2 %
Maïnani	20 %	↑ 1 %	Maïnani	12 %	
Bendo	15 %		Naïkam	4 %	↑ 3 %
Madana N.	13 %		NDoheuri	2 %	
NDoheuri	7 %	↓ 1 %	Morkété	2 %	
Naïkam	6 %	↑ 5 %	Madanan Nad.	2 %	
Miandoum	5 %		Miandoum	1 %	
Komé	4 %	↑ 1 %	Kaïrati	1 %	
Merméouel	4 %		Merméouel	1 %	
Morkété	4 %		Komé	1 %	
Kaïrati	2 %		Bendo	1 %	↑ 1 %

As of the end of third quarter, Madjo, for which village survey data is now available, no longer appears in this table but has been moved to the table below, where more precise information shows its status has moved from High to Approaching High. Madjo falls on the lowest edge of the Approaching High category; the category goes from 10.1% to 15% of nonviable individuals. 10.1% of Madjo is of nonviable.

The number of non-viable households below 2/3 c. of land per HHM is much more reliable in villages with complete Village Survey data. Using this data when available to calculate the number of people in non-viable households gives the results noted in the Table below.

- Completed during the third quarter of 2009, Madjo is new in this Table. Section 3, below, presents the first results for this village:

Table 5 : Non-Viable Project Affected Individuals Out of Entire Resident Population Reclassification with Measured criterion from Village Survey.

Village	Measured Non-viable Project-affected Individuals*	Declared Non-viable Project-affected Individuals
Bégada	2.0%	11.5%
Bela	1.0%	6.5%
Danmadjia	11.0 %	19%
Dildo	2.5 %	7 %
Dokaidilti	1.5 %	15%
Madjo	6.0%	19 %
Mbanga	4.0%	19%
Mouarom	0.5 %	14%
Ngalaba	6.5 %	17%

*This number excludes all non-viable households with a resettlement option

- Data presented in this table indicates that of the nine villages with Village Land Use Survey information, none of them are in the high impact category based on the socioeconomic impact criterion of number of vulnerable individuals created by the Project but without having received resettlement benefits.
- This table uses, as the original calculation also did, the number of HHM and only the amount land currently accessible to the HH, without any other alleviating income data.
- The column on the right is computed by using declarative data on Area cultivated and Number of dependents) gathered in the formerly used Compensation Database divided by the population found during the Village Land Use Survey instead of the less reliable census data that was used in table 4.
- Using precisely measured land and HH surveys that exclude anyone from belonging to more than one HH in the same village yields very different and less dire results on the number of Affected Individuals.
- A Resettlement Option will be offered to any HH revealed by the Village Land Use Survey as non-viable Project-affected that has not yet been assisted with a resettlement option.
- Although 10.1% of all Madjo's population are nonviable in terms of landholdings, the % of Project-Affected Individuals – excluding those who have already benefited from a resettlement option, is 6.0%, or moderate.

2. Acquired Land Monitoring

The following is a list of all facilities (called by EMP "Compensation Subjects") compensated during the quarter. For each subject a Land Take occurred:

Table 6: Summary of all compensated Subjects in Quarter.

Village	Land Acquired		Nbr Individual
	Permanent	Temporary	
Atan			33
Bégada		1.6	119
Béla	0.1	0.5	5
Bemboura			5
Bendo			6
Béro	1.9	10.1	116
Dandili			2
Dildo			2
Doba			4
Dogoï			6
Guidikou			3
Kaïrati			1
Komé		1.5	13
Madjo		4.3	57
Madjo-Doba			13
Maïkéri	1	0.7	19
Maïnani			3
Manboye			4
Mbanga		0.5	3
Mékapti I			6
Miandoum			1
Missimadji			6
Ndjamena			1
NDoheuri	1.2	0.7	3
Ngalaba	3.2	2.1	47
Total	**7.4**	**22**	**478**

Note that the "Nbr Individual" column refers to the farmer's village of residence, which is not necessarily the same village as the village area where the compensated land is located. An individual from one village can be compensated for land he/she owns/uses in another village. Note also that the "Total individuals compensated" line at the bottom of the chart does not match the actual sum of the

number of individuals listed in "Nbr Individual" column because some individuals have been compensated more that once and have declared different villages of residency.

3. Socioeconomic monitoring

3.1. Village Land Survey

Table 7: Total number of HH Survey by village.

Village	Survey completed		Total HH expected	Status	Theoretical % completed
	3rd Quarter	Total			
Bégada I	-	**151**		**Completed**	100%
Bégada II	-	**106**		**Completed**	100%
Béla I	-	**79**		**Completed**	100%
Béla II	-	**65**		**Completed**	100%
Dokaïdilti	-	**85**		**Completed**	100%
Dildo	-	**275**		**Completed**	100%
Mbanga I	-	**152**		**Completed**	100%
Mbanga II	-	**107**		**Completed**	100%
Ngalaba	-	**249**		**Completed**	100%
Danmadja	-	**102**		**Completed**	100%
Mouaroum	-	**85**		**Completed**	100%
Bero	**206**	**542**	**720**	**In progress**	75%
Madjo*	**26**	**125**	**150**	**Completed**	100%
Total	**232**	**2123**	**2326**		

* Village surveyed with the "Impact Survey Method"

Madjo was completed during the third quarter. Results are presented at section 3.3.

All available teams have been assigned to Bero, which is the more populous village in the project's area. By proceeding with a full village survey rather than partial, the expected data quality should be the same as other villages. Field operations are now done at a higher pace (due to the number of teams), but coherent data integration will be harder to achieve and demands much care. All field operations should be completed in the last quarter and result presented at the end of the first quarter of 2010.

The following section shows the progression of each team since July 2008.

3.2. Socio economic survey integrated into the EMP Information System

The following graph is slightly different from the one presented in previous quarterly reports. Rather than showing production rate by named month, the graph shows production by the number of months spent in each surveyed village.

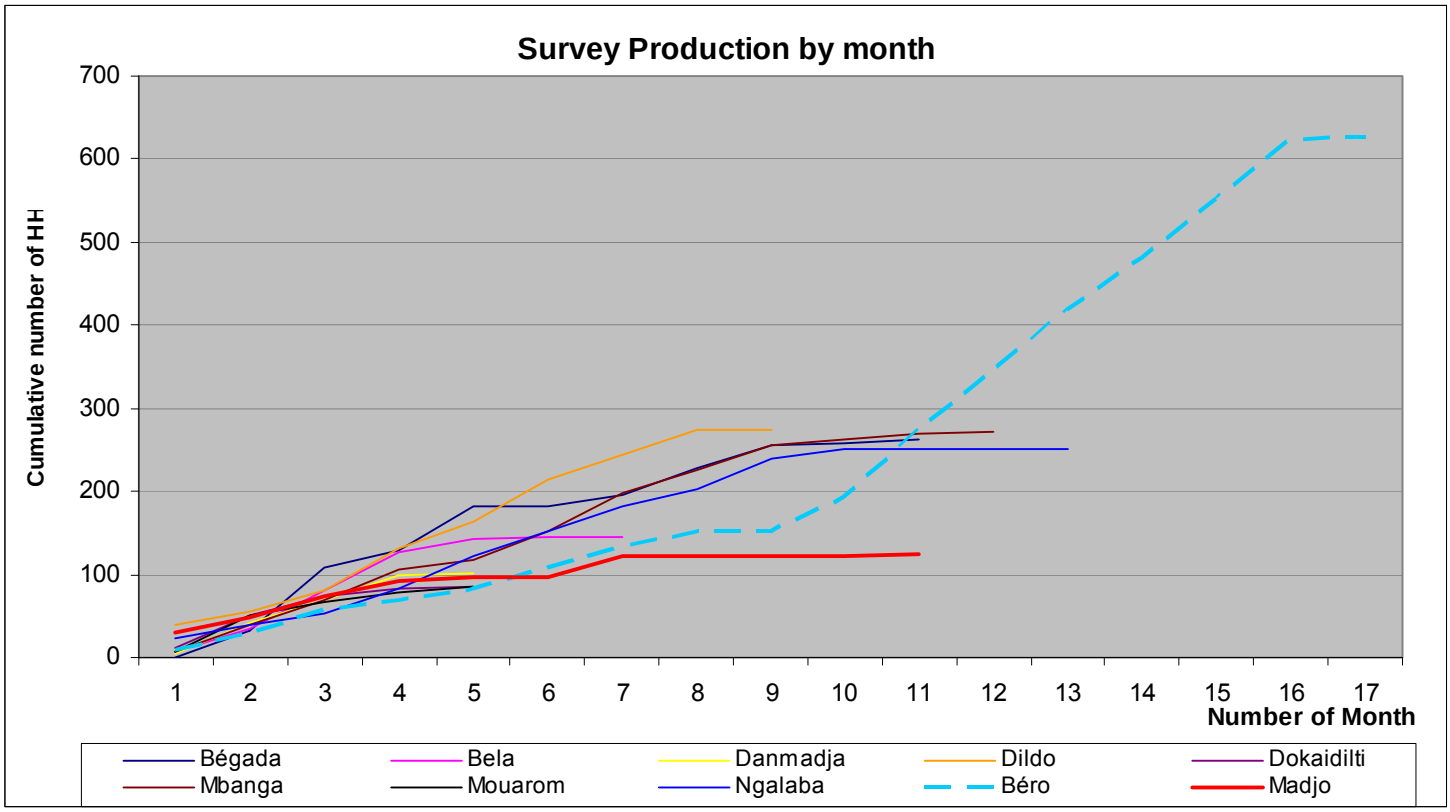


Figure 1 : Graphical and tabular views of survey progression according to captured survey in the EMP Information System.

By observing the graph, 3 general trends can be observed: a slow rate when a village survey begins, a higher rate of survey by month for a certain period and finally a slower pace at the end. At the beginning, each team affected to a village must get familiar with the villagers and the village. Once the survey is rolling the household completion rate rises, but at the end, when most of the work involves households that are hard to locate and scattered fields without identified uses, it becomes very slow and difficult.

The dashed curve is the remaining village (Bero). At the end of the third quarter, most of all household have been surveyed. Teams spend now most of their time to complete the village map by surveying fields and fallows that have been forgotten and ensuring data integrity on houses and other assets.

3.3. Completed Villages

This section provides some analysis of the Village Land Use Survey Data for completed villages. The results have been put in a table to allow comparisons.

Table 8 : Available Land.

	Dokaidilti	Dildo	Ngalaba	Danmadja	Mouarom	Begada	Bela	Mbanga	Madjo
Village Area in Hectares	686	1887	2118	480	1352	3321	2200	3068	2148
Settlement area in Hectares (% village)	24 (3%)	46 (2%)	97 (5%)	34 (7%)	23 (2%)	56 (2%)	35 (2%)	62 (2%)	27 (1%)
Project Perm. Land Take + Temp. No Returned in Hectares (% village)	79 (12%)	185 (10%)	253 (12%)	61 (13%)	149 (11%)	288 (7%)	172 (8%)	189 (6%)	135 (6%)
Available Land inside the village limit in Hectares (% village)	583 (85%)	1656 (88%)	1768 (83%)	385 (80%)	1180 (87%)	2977 (90%)	1993 (91%)	2817 (92%)	1986 (92%) incl 483 of Flooded Area
Available Land Density inside the village limit (Hectares/Person)	1.09	1.23	1.34	0.68	2.64	2.32	2.38	1.88	2.34 1.77 excl Flooded Area
Cultivated (Field) or Owned (Fallow) outside the village in Hectares (% of total land of the residents)	40 (8%)	106 (6%)	69 (4%)	122 (23%)	217 (26%)	76 (3%)*	73 (4%)	70 (3%)*	114 (10%)
Total Cultivated (Field) or Owned (Fallow) of the residents in Hectares (% of total land of the residents)	490	1561	1601	487	850	2763	1666	2270	1110
Available Land Density inside and outside the village limit (Hectares/Person)	0.92	1.16	1.21	0.85	1.90	2.15	1.99	1.51	1.88 1.31 excl. Flooded Area

Table 9 : Use of Available Land.

	Dokaidilti	Dildo	Ngalaba	Danmadja	Mouarom	Begada	Bela	Mbanga	Madjo
Cultivated (Field) or Owned (Fallow) by non-residents inside the village limit in Hectares (% of available land inside village limit)	121 (21 %)	141 (9 %)	141 (8 %)	17 (4 %)	531 (45%)	272 (9%)	389 (20%)	577 (20%)	504 (25%)
Cultivated Field Farmed by Resident inside the village limit in hectares (% of available land)	302 (52 %)	668 (40 %)	1043 (59 %)	241 (63 %)	291 (25%)	1190 (40%)	755 (39%)	1122 (40%)	443 (22%)
Fallow Owned by Resident inside the village limit in hectares (% of available land)	149 (26 %)	792 (48 %)	553* (31 %)	124 (32 %)	342 (29%)	1497 (50%)	838 (42%)	1078 (38%)	553 (28%)
Ratio Fallow/Field	0.49	1.19	0.53	0.51	1.18	1.26	1.11	0.96	1.25

* 63 Ha of bush included in fallow

Table 10 : Social summary for Completed Village Land Survey.

	Dokaidilti	Dildo	Ngalaba	Danmadja	Mouarom	Begada	Bela	Mbanga	Madjo
Nbr of Residents	534	1346	1324	570	447	1285	837	1501	848
Men	243	657	668	284	216	608	434	718	418
Women	291	689	656	286	231	677	403	783	430
Avg Age in Years	19	20	20	19	19	19	18	18	17
Nbr HH	85	275	250	101	85	259	144	269	133
Avg. HH size (# HH Members)	6.3	4.9	5.3	5.7	5.3	5.0	5.9	5.6	6.4
Avg. cordes Land per HH inside and outside village	11.3	11.2	12.6	10.3	19.6	20.7	22.8	16.6	16.0
Avg. Resettlement Factor (Based on all land inside and outside village)	1.80 Corde/HhM	2.29 cordes/HHm	2.39 cordes/HhM	1.8 Corde/HhM	3.69 cordes/HhM	4.17 cordes/HhM	3.88 cordes/HhM	2.95 cordes/HhM	2.5 cordes/HhM
% Area cultivated (Field) or owned (Fallow) by women out of total area "owned" by village residents inside and outside village	15%	17%	29%	22%	14%	30%	12%	22%	28 %

Madjo's population in comparison with the other villages surveyed is medium size. Its settlement area is small (only 1% of the village territory), locked as it is between the Pende River and areas that tend to flood in the rains. The landholding situation of the average individual in the village is quite good, with an average of 2.5 cordes of land per capita. The village as a whole is not under economic stress. But like the other surveyed villages with many fishermen, the number of individuals without enough farmland to be agriculturally viable (<2/3 corde per capita) is higher than elsewhere, as the following tables show. 10.1% of Madjo's population appears to be vulnerable. Revenue from fishing makes up the shortfall in production for many of them and the standard of living for many is similar to other, agricultural villages.

The following tables present Resettlement Factor distribution of the compensated households surveyed in all completed villages.

Table 11 : Land Distribution

Resettlement Factor Range	Bégada				Mbanga			
	Nbr HH	Nbr Individual	% HH	% Individual	Nbr HH	Nbr Individual	% HH	% Individual
0.000 - 0.499	7	39	3.8	3.82	5	32	2.37	2.47
0.500 - 0.667	3	32	1.63	3.13	5	29	2.37	2.24
0.668 - 0.999	9	75	4.89	7.34	13	120	6.16	9.25
1.000 - 1.499	40	239	21.74	23.39	64	486	30.33	37.47
1.500 - ...	125	637	67.93	62.33	124	630	58.77	48.57
Total	184	1022	100	100	211	1297	100	100

Resettlement Factor Range	Béla				Ngalaba			
	Nbr HH	Nbr Individual	% HH	% Individual	Nbr HH	Nbr Individual	% HH	% Individual
0.000 - 0.499	2	20	2.44	3.76	8	48	3.85	4.0 %
0.500 - 0.667	3	25	3.66	4.70	8	62	3.85	5.3 %
0.668 – 0.999	1	3	1.22	0.56	15	92	7.21	7.8 %
1.000 – 1.499	16	114	19.51	21.43	85	552	40.87	46.7 %
1.500 - ...	60	370	73.17	69.55	92	427	44.23	36.2 %
Total	82	532	100	100	208	1181	100	100 %

Resettlement Factor Range	Mouarom				Danmadjia			
	Nbr HH	Nbr Individual	% HH	% Individual	Nbr HH	Nbr Individual	% HH	% Individual
0.000 - 0.499	1	2	1.39	0.5 %	5	40	5.75	7.5 %
0.500 - 0.667	1	4	1.39	1 %	6	38	6.9	7.1 %
0.668 - 0.999	3	16	4.17	4 %	13	74	14.94	13.8 %
1.000 - 2.499	29	167	40.28	41.8 %	41	277	47.13	51.8 %
2.500 - ...	38	211	52.78	52.8 %	22	106	25.29	19.8 %
Total	72	400	100	100	87	535	100	100 %

Resettlement Factor Range	Dokaidilti				Dildo			
	Nbr HH	Nbr Individual	% HH	% Individual	Nbr HH	Nbr Individual	% HH	% Individual
0.000 – 0.499	5	52	6.85	10.5 %	5	33	4.85	5.5 %
0.500 – 0.667	4	33	5.48	6.6 %	6	34	5.83	5.7 %
0.668 – 0.999	12	87	16.44	17.5 %	16	119	15.53	19.9 %
1.000 – 1.499	31	247	42.47	49.7 %	45	269	43.69	44.9 %
1.500 - ...	21	78	28.77	15.79 %	31	144	30.1	24.0 %
Total	73	497	100	100 %	103	599	100	100 %

Resettlement Factor Range	Madjo			
	Nbr HH	Nbr Individual	% HH	% Individual
0.000 – 0.499	7	61	6.36	8.1 %
0.500 – 0.667	5	32	4.55	4.2 %
0.668 – 0.999	9	60	8.18	7.9 %
1.000 – 1.499	51	373	46.36	49.2 %
1.500 - ...	38	232	34.55	30.6 %
Total	110	758	100	100 %

Twelve (12) compensated household in Madjo are below the resettlement threshold of 2/3 corde by dependent. Four (4) of these households have already undergone livelihood restoration through a resettlement option in the past. The remaining 8 compensated households represent about 7% of all compensated Households in this village; individuals from these 8 household represent 6% of the total population (table 5). Another 7 households also appear agriculturally non-viable but have never surrendered any land to the Project.

4. Land Return Monitoring in 3-Fields[1]

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

The chart in Figure 4.1 shows the current portion of each Land Use Type out of the total Compensated Land. The land returned is noted only in the table and does not appear in the chart. The "Returned" column shows the number of hectares returned (on the left) and the percentage of returned area out of the total compensated area (on the right), for each land use type.

[1] 3-Fields Area includes the oil concessions of Miandoum, Bolobo and Komé

	Total areas in Hectares			3Q09		
Land Use Type	**Compensated**	**Returned**		**Compensated**	**Returned**	
1) Permanent With Public Access	620.0	31.0	5%	5.3	3.7	70%
2) Permanent With No Public Access	877.1	91.3	10%	6.6	6.2	94%
Sub Total Permanent	**1497.1**	**122.3**	**8%**	**11.9**	**9.9**	**83%**
3) Temporary Returned Without Restriction	438.0	334.8	76%	8.1	29.0	358%
4) Temporary Returned With Restriction	1563.3	564.0	36%	18.8	28.9	154%
Sub Total Temporary	**2001.3**	**898.8**	**45%**	**26.9**	**57.9**	**215%**
TOTAL (Permanent + Temporary)	***3498.4***	***1021.1***	29%	***38.8***	***67.8***	175%

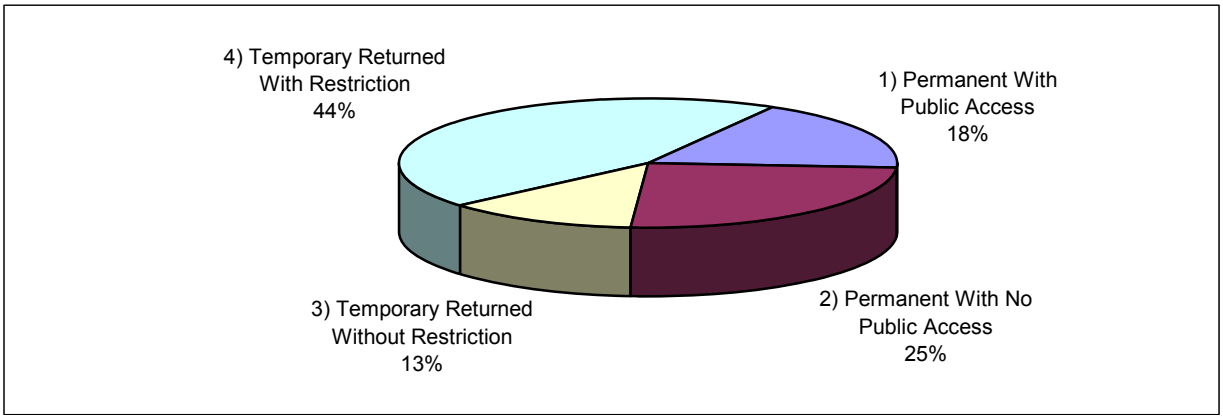


Figure 2: Total Compensated and Returned Land in OFDA

In 3Q09 there was a sizeable return of land originally acquired for both permanent and temporary uses. Some of the returned land was abandoned or reclaimed land acquired for permanent facilities; 83% of land newly acquired in 3Q09 was offset by return of "permanent" land take. As for the temporary land acquired in the third quarter, a bit more than double that amount was returned of land previously acquired for temporary purposes: 215%. The temporary and permanent land returned in this quarter gives 75% more land returned than acquired. In other words, in the 3rd quarter all land return was ahead of land acquisition for infill drilling or other purposes. During this 3rd quarter rainy season it was possible, due to a streamlining modification in procedure, for the socio-economic group to return a great deal of the land that had been reclaimed by Construction in 2Q09.

4.2. Compensated and Returned Land by Facility Type

The tables and charts on the next pages show the different types of facility in each of the four land use types, as well as their acquired or returned status. Since the infill program brings new wells in areas already drilled, it is not rare to see that the new pads will fall on existing roads or flowlines right of way. Therefore the area already acquired for an initial facility type (or land use) is just transferred to another one, without affecting the global footprint.

	Total Compensated			*3Q09*		
Facility Type	**Compensated**	**Returned**		**Compensated**	**Returned**	
Main Road	73.9	0.0	0.0%	0.0	0.0	0.0%
Access Road	546.1	31.0	5.7%	5.3	3.7	69.8%
Total	620.0	31.0	5.0%	5.3	3.7	69.8%

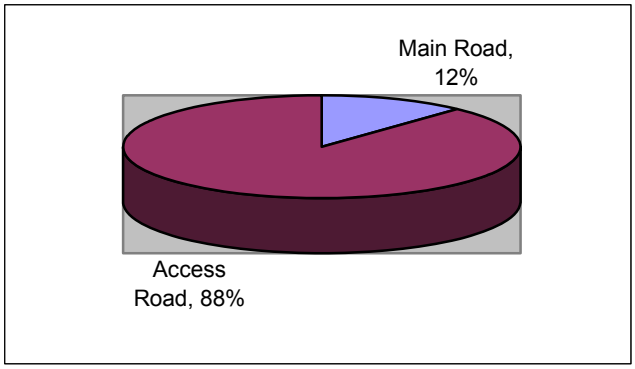
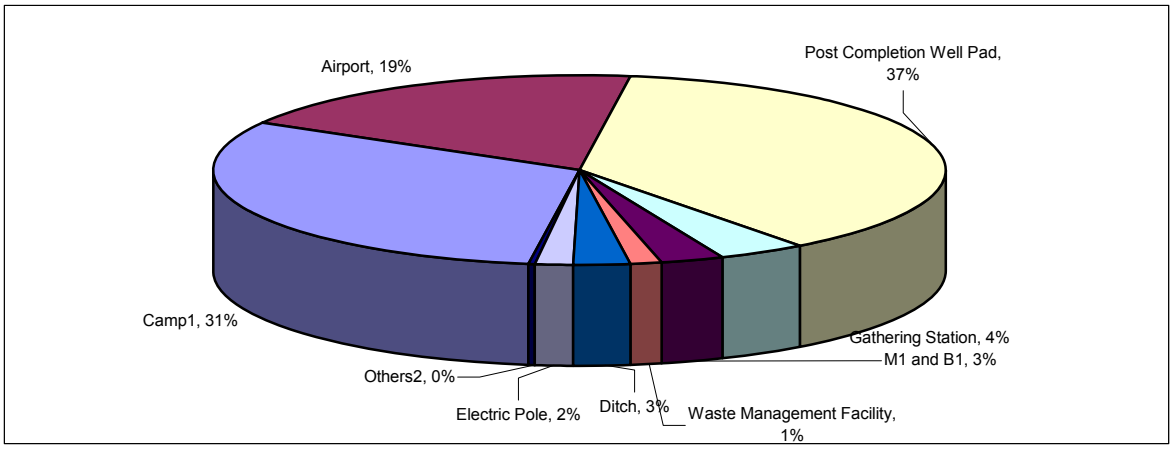


Figure 3: Land Use Type 1) Permanent with Public Access (Areas in hectares)

The main road, although it occupies a substantial area, now serves as an economic artery, second only to the national highway, for moving local production from the OFDA region, zones south of the OFDA, and bordering portions of the Central African Republic. Farmers going to their fields heavily use the project's secondary, access roads, which are frequented by the many bicycles, hand carts; oxcarts and motorcycles inhabitants have acquired with their compensation money.

	Total Compensated			3Q09		
Facility Type	**Compensated**	**Returned**		**Compensated**	**Returned**	
Camp[1]	271.8	0.0	0.0%	0.0	0.0	0.0%
Airport	164.5	64.5	39.2%	0.0	0.0	0.0%
Post Completion Well Pad	328.2	12.6	3.8%	6.5	0.5	7.7%
Gathering Station	34.3	4.6	13.4%	0.0	0.0	0.0%
M1 and B1	24.1	9.6	39.8%	0.0	5.7	0.0%
Waste Management Facility	12.2	0.0	0.0%	0.0	0.0	0.0%
Ditch	22.3	0.0	0.0%	0.0	0.0	0.0%
Electric Pole	13.5	0.0	0.0%	0.0	0.0	0.0%
Others[2]	3.2	0.0	0.0%	0.1	0.0	0.0%
Total	874.1	91.3	10.4%	6.6	6.2	93.9%

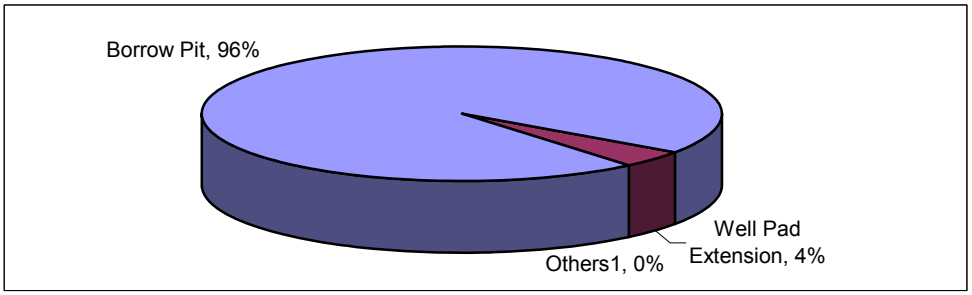


1. Kome Base, Kome 5, Lagoon, Leach Field
2. Piezometers, Service Area, Water Well

Figure 4: Land Use Type 2) Permanent with No Public Access (Areas in hectares)

Even if the original land use of category 2 is "Permanent with no public access", when a piece of land is not needed by the project the facilities are returned to population. 10% of the area compensated as "permanent with no public access" has therefore been returned.

	Total Compensated			3Q09		
Facility Type	**Compensated**	**Returned**		**Compensated**	**Returned**	
Borrow Pit	420.2	324.3	77.2%	8.1	29.0	358.0%
Well Pad Extension	17.5	10.5	60.0%			0.0%
Others[1]	0.3	0.0	0.0%	0.0	0.0	0.0%
TOTAL	438.0	334.8	76.4%	8.1	29.0	N/A

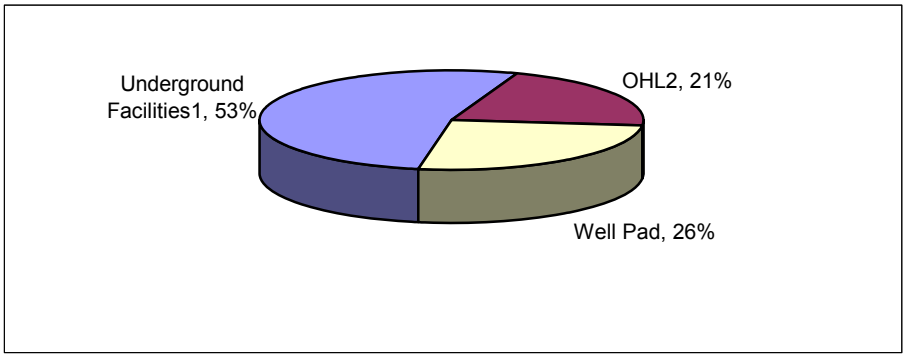


1. Water Line Access & Soil Boring

Figure 5: Land Use Type 3) Temporary Returned Without Restriction (Areas in hectares)

Current borrow pit reclamation work is returning quality arable land to the villagers even though the arable quality of these land areas prior to laterite mining by the Project was very low.

	Total Compensated			*3Q09*		
Facility Type	**Compensated**	**Returned**		**Compensated**	**Returned**	
Underground Facilities[1]	821.8	164.0	20.0%	10.3	9.4	91.3%
OHL[2]	330.8	63.1	19.1%	0.0	0.0	0.0%
Well Pad	407.0	336.8	82.8%	8.5	19.5	229.4%
TOTAL	1559.6	563.9	36.2%	18.8	28.9	153.7%



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

Figure 6: Land Use Type 4) Temporary Returned With Restriction (Areas in hectares)

The export pipeline right of way in the OFDA is 47.2 ha (30 m * 15.8 km). Half of the total right of way (23.6 ha) has been returned without restriction; only 7.5 m on each side of the center line has been returned with restrictions. 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 and no restrictions apply to the restored and returned portion . 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 agricultural season, depositing carbon on the lines and increasing the probability of short circuits. EEPCI 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

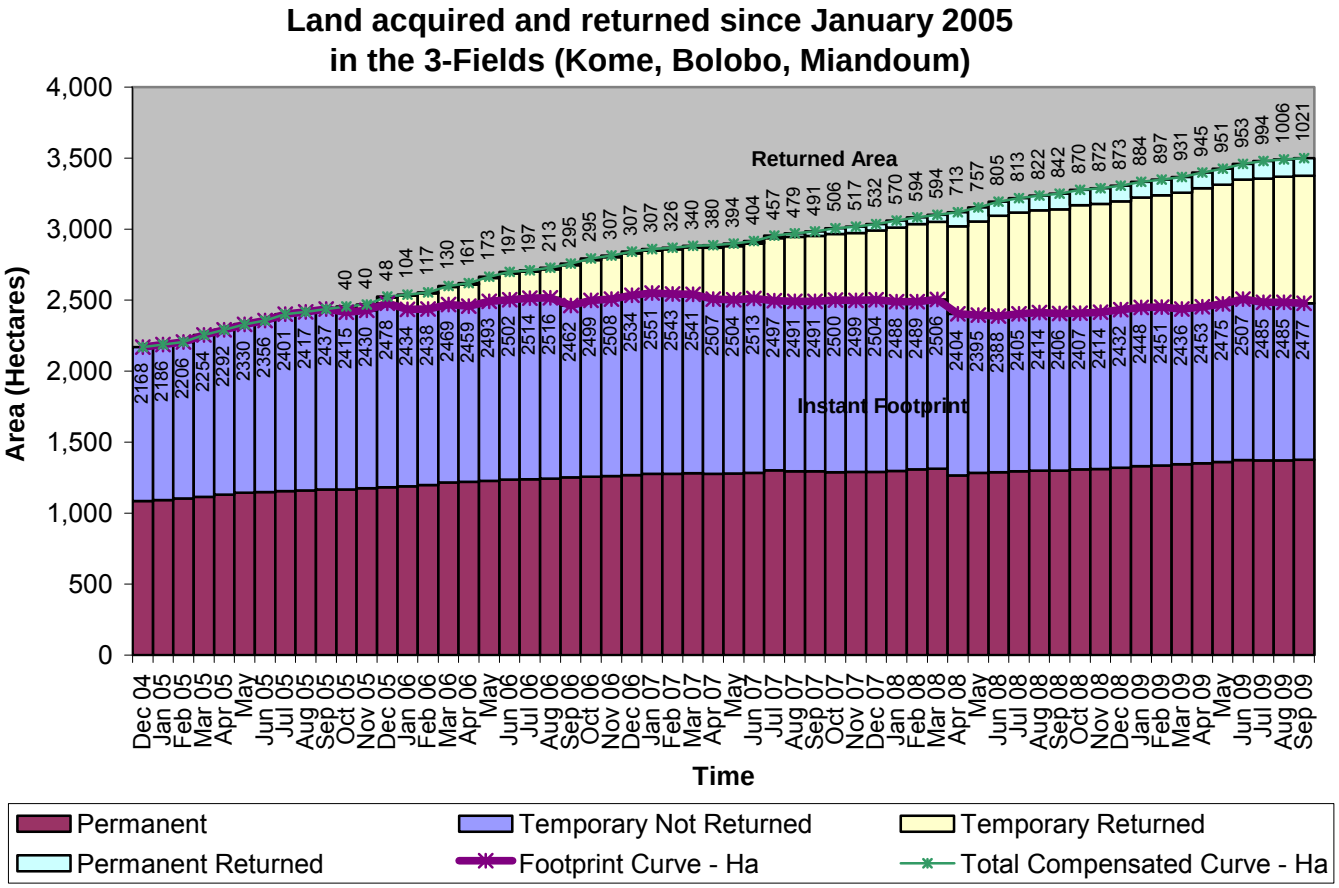


Chart 9: Footprint Chart

- Infill impact has been counterbalanced

The footprint continues to remain stable because the land returned is about the same as the land acquired. The land returned is not the only factor that counterbalances the in fill drilling land take. The second factor is that the in fill wells are built in already drilled areas and overlap existing compensated areas. The land area compensated for an initial facility type is just transferred to a new one.

4.4 Quitus

The following table describes Quitus (land return to the villages) for 2009 year to date:

Month	Quitus	Amount of Land Returned (sq meters)
Jan-09	11	108738
Feb-09	20	153403
Mar-09	14	336305
Apr-09	14	144870
May-09	6	57737
Jun-09	5	21690
Jul-09	30	408116
Aug-09	16	125890
Sep-09	11	206673
Total	127	1563422

5. Annex

5.1. Land Use Criteria

The criteria concerning Land Use impact represents the percentage of village area used by the project within each village. The boundaries of the village used to set the village area are not official and are computed based on a global survey of the village limits. The thresholds between levels of impact represent "natural breaks" or large numerical gaps in between villages.

Calculation of Land Use Impact

The final percentage used to classify the village's level of impact is computed by adding the "temporary" land not yet returned land to the land permanently used by the project

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

Thresholds	
High	≥11%
Approaching High	7% - 10.9%
Moderate	3% - 6.9%
Low	0% - 2.9%

5.2. Socioeconomic Criteria

Village level impact of project land take depends both on absolute amounts of land taken or returned and the way in which land resources are divided within the village. In some villages people depend mainly on farming for their livelihood. In others a portion of the inhabitants depend on fishing as well as farming; fishing families in these villages often have (and need) less farmland than in inland villages and may already be below the general threshold of agricultural viability (2/3 corde per HHM). Attributing all household non-viability to Project land acquisition in these villages would overstate the Project impact.

To reflect the difference in project impact in these two types of villages, the social criteria were set according to 1) the number of people **already non-viable** before they were compensated for land and 2) those who were **made non-viable** when they lost land to the project.

An important learning from the completed village land surveys is that the declarative data used to calculate non-viability often overstated the number of people dependent on the household's land and understated the amount of land available. Therefore using the number of non-viable households found during a village survey presents a more accurate picture of project impact in the village. But such data was not available when the Land Use Impact list was first calculated. For each village, as such data has become available, the pre-project criterion has been dropped and only the current but accurate criterion of currently non-viable HH (compensated and not compensated) has been used when a village is open to **reclassification**.

Changes in a village's position within the land use impact table therefore reflect both the measured return / continued acquisition of land and the measured number of households currently non-viable because of limited land access. Although this picture does not allow a **retrospective** view of a household's situation the first time it seceded land to the project, the accuracy of the data on the non-viability of households overrides the interest in distinguishing impact in fishing/farming and simple farming villages.

5.2.1 Initial Classification with Compensation Data

Criterion 1: % all non-viable individuals / all individuals in the village

Description: Percentage of all project-affected individuals in the village currently below the resettlement factor of 2/3.

Rule:

$$\frac{\sum \text{(All individuals below 2/3 corde after land take)}}{\text{Village Population}}$$

Threshold:

Threshold Criteria 2		
	Min	Max
High	50.1%	100%
Approaching High	30.1%	50%
Moderate	20.1%	30%
Low	0%	20%

This criterion includes people who were already non-viable before the Project.

Criterion 2: % individuals in the village made non-viable by project land take / all individuals in village

Description: Percentage of the number of individuals that were economically viable before surrendering land/feeling any project impact (the resettlement factor > 2/3) but who became agriculturally non-viable upon surrendering land/ after project impact (the resettlement factor < 2/3).

Rule:

$$\frac{\sum \text{(All individuals that were not eligible } \textbf{before} \text{ land take \& are eligible } \textbf{after} \text{ Land take)}}{\text{Village Population}}$$

Threshold:

Threshold Criteria 3		
High	20.1%	100.00%
Approaching High	15.1%	20.00%
Moderate	9.1%	15.00%
Low	0%	9%

This criterion cannot be calculated with village land survey results and is no longer applied when a change in village impact classification is calculated.

5.2.2 Reclassification with Village Survey data

Description: When a village reclassification is calculated and village survey data is available, a single criterion is used. This criterion represents all the members of the non-viable compensated households compared to the population of the village

Rule:

$$\frac{\sum \text{All members of non-viable compensated Households}}{\text{Village Population}}$$

*This statistic excludes non-viable households with resettlement options

Threshold:

Threshold Criteria 3		
High	**15.1%**	**100.00%**
Approaching High	**10.1%**	**15.0%**
Moderate	**5.1%**	**10.0%**
Low	**0%**	**5.0%**

5.3. List of Severely Impacted Household in Bela, Mbanga and Madjo Needing Resettlement Option

No.	Quartier	No HH	CdM	ID CdM	Age	Area Lost	Nbr Tr	On F	Off F	HhM	Fct before	Fct Now
1	Béla II	HH001945	M	ID020906	30	2.301	1	2008		7	0.426	0.097
2	Béla II	HH001866	M	ID022771	29	4.976	1	2008		13	0.776	0.393
3	Béla I	HH001927	M	ID021228	37	0.4				7	0.579	0.522
4	Béla II	HH001875	M	ID024583	22	4.631	1	2008		6	1.299	0.528
5	Béla II	HH001868	M	ID023057	27	3.673	1	2008		12	0.916	0.610
6	Mbanga II	HH001914	Mme	ID026942	40	0.013				7	0.256	0.254
7	Mbanga II	HH001495	M	ID026531	24	0.762				3	0.552	0.298
8	Mbanga 1	HH001371	M	ID021307	34	7.061				9	1.092	0.308
9	Mbanga II	HH001579	M	ID029306	35	3				9	0.737	0.403
10	Mbanga II	HH002168	Mme	ID036718	31	0.091				4	0.512	0.489
11	Mbanga 1	HH001098	Mme	ID025454	39	0.593				8	0.633	0.559
12	Mbanga II	HH001067	M	ID025814	27	1.951				6	0.887	0.561
13	Mbanga II	HH002170	Mme	ID025889	55	0.271				4	0.63	0.562
14	Mbanga II	HH002183	Mme	ID030126	37	0.247				6	0.636	0.594
15	Mbanga 1	HH001922	Mme	ID021904	32	1.19				5	0.887	0.649
16	Madjo	HH001047	M	ID021908	54	1.839	3	2005	2007	13	0.141	0
17	Madjo	HH002306	M	ID046345	29	0.198				3	0.066	0
18	Madjo	HH000558	M	ID031546	50	0.228	1		2006	6	0.187	0.149
19	Madjo	HH001995	Mme	ID026869	32	0.159				4	0.273	0.233

20	Madjo	HH002022	M	ID020520	44	1.867				9	0.591	0.384
21	Madjo	HH000304	M	ID020620	34	5.286	1		2006	16	0.746	0.415
22	Madjo	HH001997	M	ID024294	36	1.015	1		2007	10	0.59	0.488
23	Madjo	HH002131	M	ID022962	25	1.387				5	0.843	0.565
24	Madjo	HH002380	M	ID033894	20	0.3				8	0.616	0.578
25	Madjo	HH002020	M	ID035705	31	0.004				8	0.597 *	0.597
26	Madjo	HH001961	M	ID024493	23	1.567				3	1.15	0.628
27	Madjo	HH001948	M	ID025077	23	2.791				8	0.979	0.63

***** The individual was compensated one time for 0.004 corde, too small a quantity to register any change in factor

5.4. Fault Block Concept

Definition of a Fault Block

The infill drilling program is to be implemented in sections called “Fault Blocks”. A Fault Block is a geologic feature of an oilfield. A discrete section of the field, called a Fault Block, shares the same oil-bearing formation and characteristics. The formation and characteristics are first defined through seismic exploration but more thoroughly defined and understood through the behavior of oil wells as they continue to produce. Thus the comprehension of the extent and nature of fault blocks increases with experience in the oilfield.

With this developing understanding Reservoir Engineers attempt to optimize production of increasingly clearly defined portions of the oil field. They develop strategies for dealing with the characteristics of each particular Fault Block. Working on these small, defined geological areas they are able to exploit the good producing areas while making decisions not to disturb other, less productive areas.

How working with Fault Blocks reduces impact

The Reservoir Engineers have also grown sensitive to minimizing land take. Fault block by fault block, Reservoir is giving the EMP team the location of all the wells which need to be drilled within the footprint of the Fault Block while in the past, locations of wells were known by the EMP team one location at a time. The fault block process allows the minimization of land required for access roads, flowlines and electrical lines. Because land in a fault block has already been used for well pads, roads and facilities, these can be reused or reconfigured to minimize land take. Reservoir is working with the Environmental Management Plan group and with Construction to use over again or to modify existing construction – access roads to well pads, electric and flow lines. Much of the land to be used in a fault block is land already in use as pads, roads, electrical lines etc. From the construction standpoint it also becomes possible to recycle the laterite construction material already laid down from less productive areas of the fault block. This reuse means new areas of land do not need to be disturbed by mining. This is a bonus as finding nearby sources of laterite is difficult and moving it long distances is expensive.

Working by fault block allows most construction, drilling and initial reclamation work to be done within a shorter and limited period of time.

- Reuse takes less time than new construction.
- Moving laterite from abandoned area to new construction; moving topsoil from new construction to reclaim abandoned area, recycling of already acquired land, reduces EEPCI costs and speeds up reclamation.
- Reduces BP surface area.
- Allows efficient and effective one time reclamation and return rather than continuous reopening of same trenches where land has been restored, returned and then reacquired and reused.
- Reduces loss of topsoil from reclaimed land that is then reopened
- Less disruption to community and to farming as work occurs within limited time
- More efficient use of construction equipment/labour is good for EEPCI
- Reduces number of “quitus” whose signature process has begun but not finished before the land is requested again (i.e. fault blocks cost the farmer nothing & reduce EMP paperwork/legwork).

By working block-by-block, the project will be able to optimize the pattern of access roads, flowlines and electrical lines, regulate the amount of land required, and reduce the period of construction needed to continue development of Chad's oil

How to assess social impact using fault blocks

A fault block defines the maximum degree, or "worst case scenario" of impact on land and people. Only land within the fault block will be used and only those using this land will be affected. Fault blocks define where to look for people who will be impacted. With satellite photography and the EMP-IS database and maps the EMP team can identify who is farming in the fault block area, their houses, shelters, etc. Any area within a fault block for which such EMP-IS information has not yet been collected can be (and has been) immediately targeted for inclusion in the EMP-IS.

Working by fault blocks reduces the need for additional land, as discussed above. It also facilitates the identification of social impacts. On the surface the subsurface layout of productively producing areas circumscribes the area of land that will be targeted for more intensive exploitation. From the social standpoint this means that fewer people will be impacted because construction has already removed some land from agricultural use. It means, in fact, that the same people already impacted are most likely those who will be impacted again. The number of HH impacted will not increase by much, but the same HHs will be impacted again.

Fault Blocks outline who may be impacted but not the degree of impact

Initial understanding of who could be impacted in a fault block can be rapid but approximate even without full village mapping. If EMP-IS identifies people already compensated for land in the fault block and already knows their resettlement status (based on earlier compensation data and resettlement choices), then it is likely these people could lose additional land, so EMP knows it must ensure that non-viable HH are still able to pursue effectively their chosen resettlement option, or else offer other options.

But determining the degree of impact on a household using land in a fault block depends on mapping all a household's fields. Individuals classically pursue a strategy of cultivating land in several areas in order to minimize crop risks; if pests get one field, or the river floods another, there will still be other fields elsewhere that escape. Taking land within the fault block does not, therefore, necessarily deprive a farmer of all his land (though it can).

The reason for which EMP Impact Teams were created is to measure all the fields of a person/household just identified for compensation and enter the up-to-date information into the EMP-IS. The new land acquisition is subtracted from the holdings and viability calculated. If non-viable the social team advises on resettlement options.

The Impact Team's information is a step in defining the impacted household's status. But for a clear picture of each household's land holdings LUMAP experience with mapping for the Village Site Specific Plans shows that mapping all the fields within a village area is needed for an accurate picture. As the mapping covers more and more of the area, the landholders of those fields that have not been claimed are identified and their total land holdings are known with accuracy. Hidden fields are uncovered that belong to seemingly "non-viable" households.

Predicting who will be impacted and by what degree

Given the agricultural system used in the OFDA, the use of a piece of land shifts frequently between field and fallow, the contours change depending on the crop being planted and the energy of the planter. The planters change as well between different members of the family, neighbors, and relatives from other villages, etc. Who is cultivating what exactly where cannot be known until the compensation identification team hits the ground and makes an identification.

What complete village mapping does do is offer a tool for predicting impact. When a village is surveyed everyone's approximate status is known:

1. Already non-viable
2. Near threshold (between just over 2/3 corde/HHM to 2.5 c./HHM)
3. Land rich (2.5 cordes/ HHM)
4. Non-agricultural income sources

The maps reveal the land holdings of everyone within the fault block at the time of the mapping. Most of the people identified will be the people that will be affected by the new land requests. The impact of the request on their situation can also be evaluated. The EMP-IS can list:

1. The number of, and identity of, non-viable HH within the fault block
2. Same for HH near the threshold of becoming non-viable
3. The number of land-rich HH who are most unlikely to be greatly affected
4. HH with additional non-agricultural income sources to offset land take

The EMP-IS indicates the households that need to be monitored – categories 1 and 2. The EMP-IS can also indicate the large landholders with land OUTSIDE any fault block, to whom non-viable individuals can be oriented for 3rd party land.

Once the compensation team has brought up to date the people farming in the impacted area, then for recently mapped areas the EMP-IS can define the actual impact, subtracting the new compensated area from the amount available to the household. For areas not yet mapped, the Impact Team sets to work, but unless all the fields in the village have been identified it is less able to accurately define impact and more likely to overestimate a household's non-viability. But in either case any resettlement actions can be undertaken immediately.

For example, Fault Block 3-4, involving the village of Begada, shows how the possible impact can be predicted.

Potential Impact of Begada Infill		
HH status	# HH in Fault Block	%
# HH already < 2/3	6	5
# viable HH	22	20
# land-rich HH	34	31

# potentially at risk	22	20
# houses/structures in FB	0	0

Definitions:

- HH already < 2/3 c. Any additional land take will impact their already non-viable status. Are the resettlement measures already taken still sufficient?
- Viable HH: HH with between 2/3c and 2.5 c of land per HHM. Depending on their current holdings and the amount of land to be surrendered they may become non-viable
- Land-rich HH: HH with more than 2.5 c per HHM. Only a massive land take would make a HH non-viable.

In fact all the construction requests for Fault-Block 3-4 have been received and the actual impact has been defined. Because the land take is occurring within the confined area of a fault block and where a number of people have already been compensated, then:

Actual Impact of Begada Infill		
HH status	# HH in Fault Block	%
# HH already < 2/3	6	5
# viable HH	22	20
# land-rich HH	34	31
# new non-viable HH	0	0
# houses/structures touched	0	0

Land take in the Begada Fault Block for Infill Drilling did not put any marginal HH below the viability threshold. Therefore the only resettlement action needed is to check with the HH already involved in resettlement about the continued tenability of their choice of option.

Conclusion:

- Working by fault block is the natural outcome of a learning process aimed at maximizing production and minimizing investment in drilling and construction.
- Construction is, additionally, minimized through the reuse and modification of existing project infrastructure above the fault block areas being maximized.
- Intensifying the use of an area means that the people already compensated for land in that area are most likely the people who will be affected again.
- The EMP-IS allows EMP to predict in advance the people who will probably be impacted and the probably outcome of that impact.
    - For HH already non-viable, their situation can be monitored and resettlement options readjusted – in any case this happens automatically with resettlement monitoring.
    - For HH near the threshold, once compensation identification has been done then their resettlement status can be calculated and resettlement initiatives started.
    - For large land holders their situation will be recalculated to check that they remain viable.