Site Specific Plan
Mbanga Village
August 2009

Context of the Land Use Situation

Since construction began in 2000, the Chad Cameroon Oil Export Project (the Project) has compensated nearly 12,900 individual land users for almost 7,100 Hectares (Ha) of land in 375 villages along the entire length of the Project from Kome, Chad to Kribi, Cameroon.

Compensation in the Oil Field Development Area (OFDA) has been paid for nearly 3,500 Ha of land involving about 4,000 individual land users. The Project has utilized 3.5% of the 100,000 ha of land in the OFDA. When all of the land taken for construction and not needed for permanent facilities has been returned the percentage still in use by the Project will be just over 1.5% of the total OFDA area.

All land users and villages have been compensated according to the Environmental Management Plan (EMP) that was approved prior to Project construction. The Project's compliance with the EMP compensation requirements has been documented in the Project Update reports and by the World Bank's External Compliance Monitoring Group (ECMG) and the International Advisory Group (IAG).

A set of principles set out in the EMP have guided the land acquisition and compensation effort, including:

- A transparent compensation procedure with, at minimum, four information and consultation steps so that all village residents can see that no other resident is gaining an advantage.
- Sensitivity to cultural practices and local legal requirements. Most land is controlled by the village and allocated by the local chief. In Chad, nearly all land is owned by the state. So farmers, rather than owning land as in Europe or North America, have only the use of the land for crops. The Project therefore does not buy land but compensates for farmer labor and lost crop opportunities as provided in the EMP.
- Recording all compensation transactions. Each payment is archived with a photo of the transaction and the recipient's thumb print.
- Avoiding resettlement of households through project redesign and by offering two resettlement alternatives - Improved Agriculture Training and Off-Farm Employment Training.

These principles have been developed into a set of guidelines and procedures that govern how compensation, resettlement, and other mitigations are applied. These guidelines are contained in an in-house Land Management Manual, which serves as a Desk Guide to implementation. This guide is periodically updated to include improvements and modifications (last revision in September 2008)

Evolution of the OFDA Land Use Situation

As the three original OFDA oilfields were being developed, and results began coming in from the completed wells, it became clear that more rather than fewer of the projected wells would be needed in order to develop Chad's oil. This continued drilling, and the infrastructure to collect the oil and to supply electricity to the wells, was consuming more land than originally anticipated on the basis of the low-end estimate. The project's efforts to address this land use situation began in mid-2005, when it declared a Level II Noncompliance Situation (NCS) regarding the pace of returning to communities temporary use land that had been reclaimed in accordance with the Environmental Management Plan (EMP).

By the end of 2006, with the help and input from the World Bank Group, the project had developed initial mitigation actions and had begun implementing them. An action plan was agreed in 2007, which included among other actions the development of Site Specific Plans to address particular problems facing certain villages that had surrendered substantial areas to project use and for which land return was lagging.

Purpose of a Site Specific Plan

The purpose of a Site Specific Plan for each of these villages is to develop measures that mitigate the precise problems the village's population is encountering within their own village area. First, the study must determine the problems specific to that village. Then the mitigations proposed must be feasible, using the resources that are available to the restricted vicinity and maximizing the knowledge and capabilities of its inhabitants. The plan consolidates all applicable livelihood restoration tactics into a strategy that will lead to livelihood restoration in this heavily affected village.

Although the absolute foot print of the Project (Permanent Land Take and Temporary Land Take Not Returned) has not grown appreciably since December 2005, the initially slow return of temporary use land plus the increase in compensated land has impacted certain villages located in the OFDA. These impacts include:

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

The Land Use Mitigation Action Plan (LUMAP) Site Specific Plan (SSP) for each highly impacted village in the OFDA develops mitigation measures by clearly defining the village's situation. It looks at:

- Existing natural resources in this localized area of the OFDA.
- Identification and assessment of complementary economic resources that are available.
- Villagers use of farmlands and bush.
- Current land needs of villagers.

- Specific measures to re-establish the viability of the village.
- List of closely tailored mitigation measures designed to return the village to viability.

Focus of a Site Specific Plan

Within the OFDA, land acquisition for production facilities has affected 47 official villages according to 2008 administrative categorization -- 32 if the geographic rather than administrative units are counted – 61 if all the unofficial quartiers are included For purposes of a Site Specific Report it is the **geographic unit** that will be considered since the aim is to remediate impacts on the geographical area of the village and its inhabitants.

Out of the 32 geographical villages in the OFDA, 10 were categorized as more affected by ongoing project land needs than others. Implementation of SSP at Dokaidilti and Dildo has moved these villages to the low impact category Mbanga has been classified Moderate according to land acquisition and High according to social impact. As of 3Q 2009 Mbanga has lost 6% of its pre-project land; the campaign to return temporary use land has had a definite impact by moving Mbanga from 88.8% of land within its geographical boundaries to 94% today. However, with infill drilling, by 2Q07 it was at 8.0% of its land area but two years later in 2Q09 land return had dropped it to 6.0%. This figure reflects the fault block use policy of laying all flowlines, cables, etc. before closing a trench and returning the land. This allows for better restoration as well as more efficient land acquisition and return. The village remains on the Watch List for any change in status

Purpose of the Mbanga Site Specific Plan

The purpose of the Mbanga Site Specific Plan is to provide the village as a whole and the affected people in the village with sufficient livelihood to offset their losses to the Project. The SSP also evaluates the land-holding situation of all the HHs in the village to judge whether the village as a whole is at risk and, if so, what actions would be efficacious. For at-risk HHs this can be done by increasing revenues from Off-Farm training or Improved Agriculture, through providing additional land to the village, particularly to those below the viability threshold, or other means that can be employed through a precise identification of the individual HHs' and the village's condition. The mitigations proposed must be feasible, using the resources that are available to the restricted vicinity and maximizing the knowledge and capabilities of its inhabitants. The plan consolidates all applicable livelihood restoration tactics into a strategy that will lead to livelihood restoration in this heavily affected village.

Elements of the Mbanga Site Specific Plan

- Land use status of the community prior to the Project:
  - Nature and quantity of resources available before the Project.
- Resources currently available:
  - The inhabitants already have the knowledge and habits to exploit these resources.

- Socioeconomic survey data and analysis to obtain current status of the village:
    - Community inhabitants.
    - Which village and individual resources have been impacted by the Project?
    - Households in difficulty.
- Ways in which the village has been unable to deal with Project impact:
    - Define the livelihood difficulties found at the specific site.
    - Identification of impacts unforeseen in the EMP and CRCP.
    - Will new additional measures be needed to reverse Project impact?
- Review of possible actions for Site Specific Plans providing for village level livelihood enhancement.
- Actions so that all Project-affected agriculturally non-viable HHs have maintained or improved their livelihood.
- List of actions selected in priority order:
    - Quantify resources needed to reverse Project impact.
    - Identify unities responsible for execution.
- Implementation plan for each listed action, with time-bound actions and dedicated budgets.

Land Use Status Prior to the Project
The OFDA

- The population of the 10 Highly Affected villages in the OFDA doubled between 1993 and 2006.
- The average population growth was 124% and the modal increase in population ranged from 90-96% in these villages.
- Compared with natural population growth the Project's impact on land (bush, fallow, settlement, fields) was very limited.
- Project land take caused only a 4% increase in population density per ha compared to the increase caused by natural population growth.
- In the OFDA the population growth reduced the amount of bush available to people by one half between 1993 and 2006. Only 8% of the decrease in bush area can be attributed to Project land take.

Note: The data used in this analysis are correct as of August 2009; the figures may change slightly as additional fields cultivated by Mbanga residents are discovered in other villages being surveyed; since this additional land only ameliorates Mbanga's situation any changes in the data will be to the advantage of the village and its residents.

Mbanga's Land and Population, past and present.
Lying on the western edge of Bero canton, Mbanga village borders Begada village to its south, in Canton Kome. On the east lies the Loule River, with its gallery forest, and just on the other side of the Loule is Bero village land. A northern branch of the narrow Loule River has been no impediment to people from Bero moving south onto Mbanga

land and farming a good portion flanking the Loule but belonging to Mbanga. Bero village thus lies both to the northeast and east of Mbanga. To the northwest of Mbanga is Kagroye village, outside the oilfield area. Kagroye is currently the land-rich area to which others in the zone migrate for land:

- Mbanga's population growth between 1993 and 2007 was 276%, from 543 inhabitants to 1501. The average growth in most area villages in this period was somewhere in the 90-100% range.
- Mbanga is second in population size in its canton to Bero, the canton capital.
- Mbanga had 3068 ha of land (as measured by approximate village boundaries in 2006). The numbers in the three bullets below are based on a manual interpretation of a satellite image dating from November 2003. At that time, the approximate village limit gave an area of 3050 ha, categorized as follows:
    - 533 ha of bush.
    - 1510 ha of cultivated and fallow land.
    - Settlement area of 48 ha.
    - These numbers are updated on pp 16-17 with the more precise village survey data.
- Before the Project Mbanga fell just inside the top third of the 20 project-affected OFDA villages with respect to the hectares of bush available. In terms of availability of bush, Mbanga's neighboring village Bero and Begada have slightly more bush, while Kagroye to the north is rich in bush land.
- Mbanga's total land area in March 2009 is 2885 ha or 94% of its pre-project area (3068 ha):
    - During the Village Survey, the village declared an area of 0 ha of Bush. (Bush that was estimated on the 2003 satellite image is, according to the farmers claiming the land, long-term fallow).
    - The history of land take and land return plus the impact of infill drilling is as follows:
        - In 2Q 2007 Mbanga had lost 8.0% of its pre-project arable land.
        - In 3Q 2008 – 6.5%.
        - In 2Q 2009 – 6.0%.
- 20% of Mbanga's land is farmed by people from the surrounding villages, particularly Bero.
- The Project land take has increased the population density by 7% from the beginning of the project to today, the population increase accounts for 13% and the settlement expansion for 0%: (0.53 = 1.07*1.13*1.00 * 0.44)
- Mbanga had 0.18 people per ha at the census of 1993, 0.44 people/ha pre-project and now has 0.53.
- Mbanga's population density is similar to the density of other surveyed villages in the OFDA, with the exception of Danmadja and Dokaidilti, which are about triple the density of Mbanga:

	1993 pop density	2000 pop density/ha	post project pop density/ha
Bégada	0.24	0.29	0.38
Béla	0.14	0.27	0.45
Béro	0.34	0.92	0.56
Danmadjia	0.46	0.84	1.72
Dildo	0.37	0.70	0.79
Dokaïdilti	0.24	0.52	1.41
Madjo	0.18	0.53	0.27
Mbanga	***0.18***	***0.44***	***0.53***
Mouarom	0.15	0.19	0.38
Ngalaba	0.44	0.64	0.88
Average	0.27	0.53	0.74

- In Mbanga, as in all the villages, it is evident that the major increase in population density that is measurable from the national census done in 1993 is due to the high birth rate. That, alone, tripled the population of Mbanga in the 7 years between the national census and the inception of the Project.

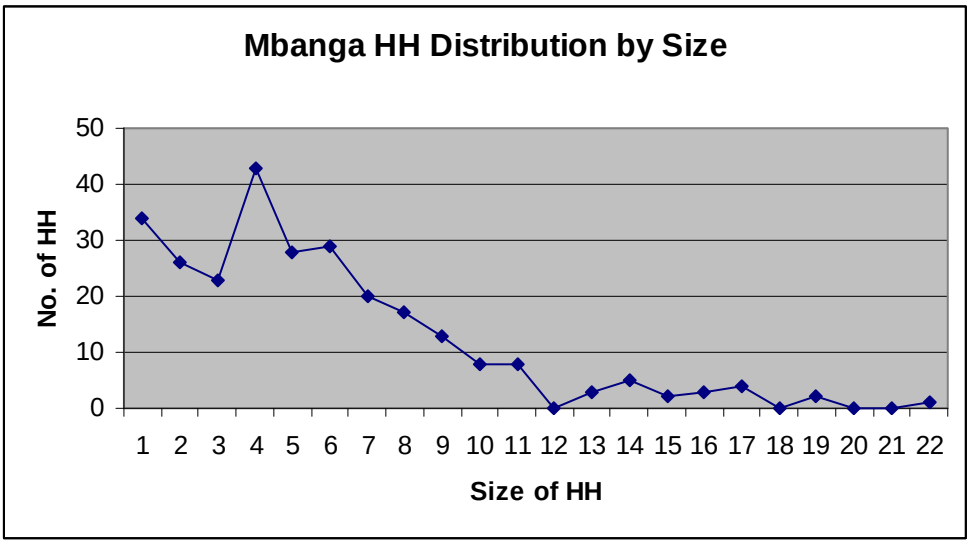
Mbanga's Current Demographics

Today, looking at Mbanga's households and using topographic measurements of land holdings rather than individuals' reported dependents and holdings:

- Mbanga has 269 households (HH) and 1501 inhabitants. The average number of HHM is 5.6.
- 23% of HH are headed by women.

HH Size

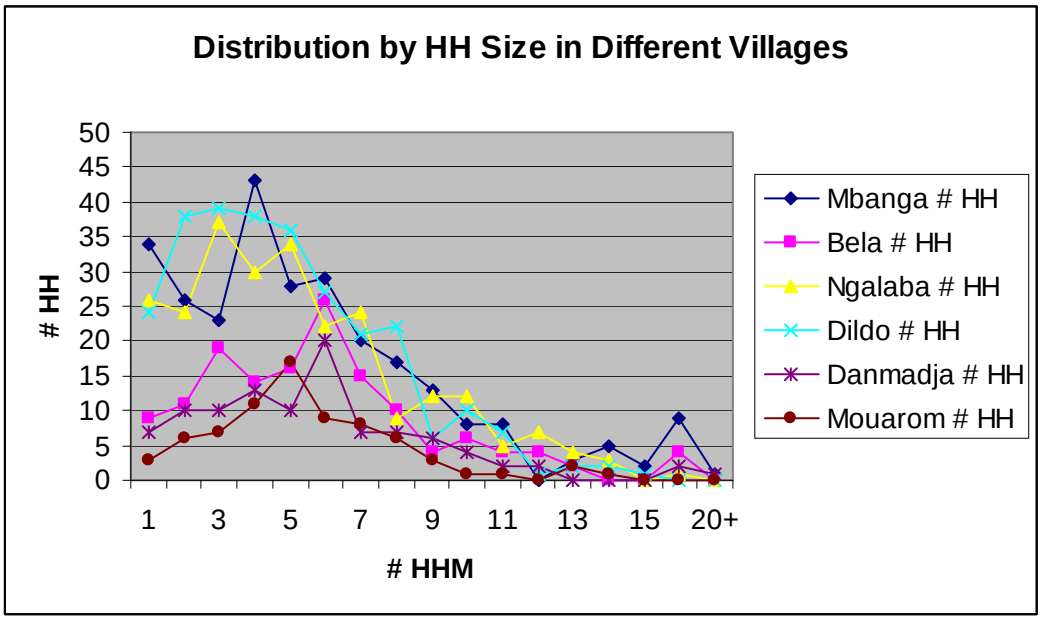
- While the average HH size in the area is about 5.6, in Mbanga the **mode** of HH composition is 4 HHM:



- The overall distribution of Mbanga's households by size, in comparison with other surveyed villages, is:

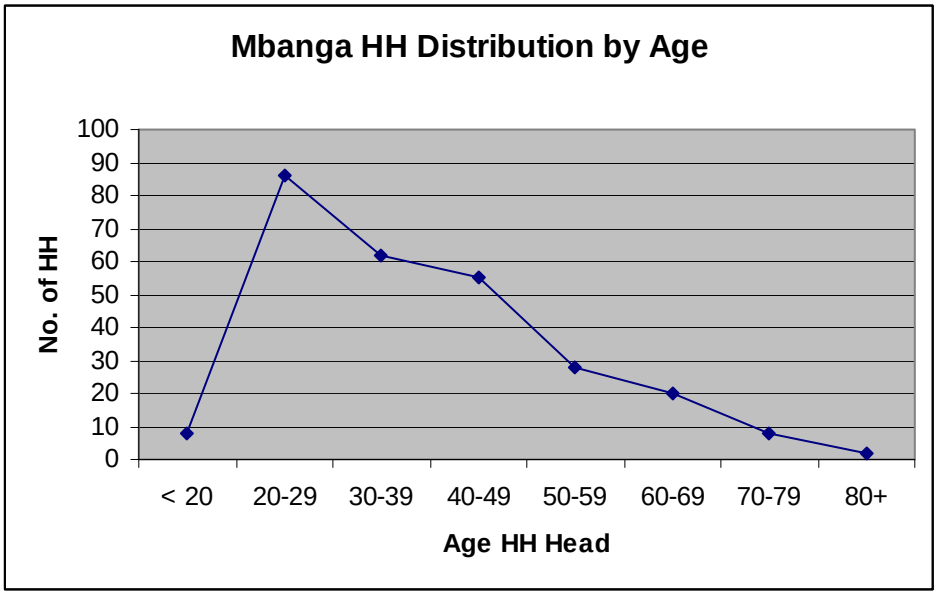
Mbanga HH Distribution by Size, Compared						
# HHM	Mbanga # HH	Bela # HH	Ngalaba # HH	Dildo # HH	Danmadja # HH	Mouarom # HH
1	34	9	26	24	7	3
2	26	11	24	38	10	6
3	23	19	37	39	10	7
4	43	14	30	38	13	11
5	28	16	34	36	10	17
6	29	26	22	27	20	9
7	20	15	24	21	7	8
8	17	10	9	22	7	6
9	13	4	12	6	6	3
10	8	6	12	10	4	1
11	8	4	5	7	2	1
12	0	4	7	1	2	0
13	3	2	4	2	0	2
14	5	0	3	2	0	1
15	2	0	0	1	0	0
16-19	9	4	1	0	2	0
20+	1	0	0	0	1	0

- Mbanga has a higher percent of 1- person HHs (34 HHs) than the other villages and a larger number of very large HH as well (20 HHs of 13 +):

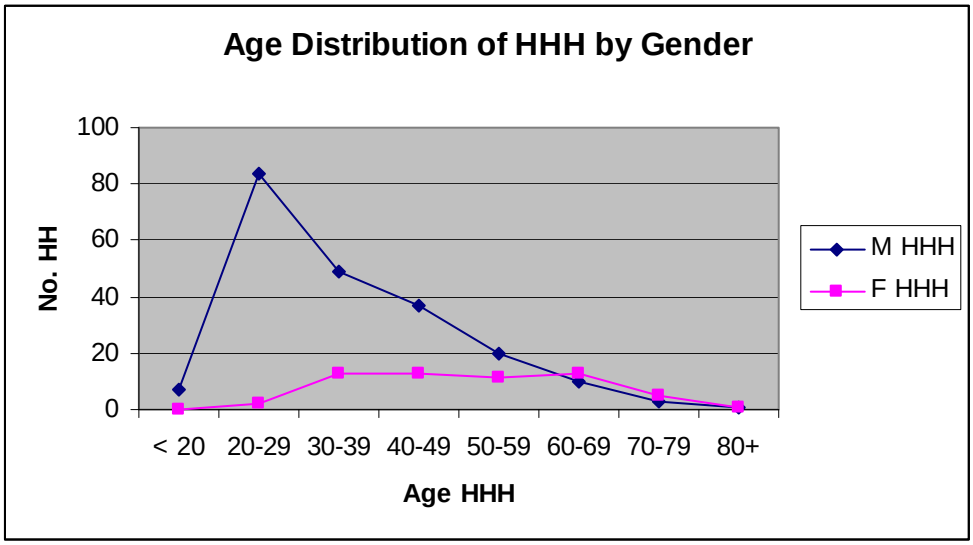


Age

- The average age of the population of Mbanga is 18.3.
- When the average age is compared to the age of HHH the weight of a very young population becomes obvious.
- Mbanga's overall age distribution of HH heads is:



- As is typical of most surveyed villages:
  - The bulk of HHH are in their 20s; as they age they are impacted by increased mortality.
  - The bulk of HHH in their 20s are men.
  - The number of female HHH rises as women mature and become independent of their husbands – through separation, divorce, and widowhood:



- The age distribution of HHH in the various villages shows very few HHH <20. Socially they are not judged mature enough to have their own HH, if they do it is usually because they have been orphaned in their late teens.
- The number of HHs drops after the age of 59 not only because of mortality but because increasingly the elderly reattach themselves to their mature children's homesteads. Nevertheless, most elderly HHHs cling insistently to their independence and maintain their own homesteads, even though they may get substantial economic support from their juniors. The figures in the table below reflect the number of HHHs who, even though aged, claimed themselves as independent and were not claimed as dependents by a junior relative:

Mbanga Distribution of HH by Age, Compared						
Total # HH	269	144	249	275	101	85
Age HHH	# Mbanga HHH	# Bela HHH	# Ngalaba HHH	#Dildo HHH	# Danmadja HHH	# Mouarom HHH
<20	7	2	0	1	0	2
20-29	86	48	70	93	30	26
30-39	63	41	70	51	31	20
40-49	55	22	48	60	16	21
50-59	28	21	35	36	15	10
60-69	20	10	13	19	6	5
70-79	8	0	9	8	2	1
80+	2	0	5	6	1	0

Vulnerability or Non-Viable Agricultural HHs

Age

- The age of the HHH plays a role in the HH's vulnerability; HHH at certain ages are more likely to have insufficient land for their HHM. But it must be remembered that the **HH land holding of 2/3 corde per HHM covers both land in cultivation and in fallow. A HH may have under 2/3 corde per HHM but put most of that land in cultivation so that it currently has plenty to eat, while the fallow that will be needed in a few years lies in the family land pool, held by an older relative.**
- Hence there are a large number of vulnerable HHHs in their 20s, usually males, because women at this age are newly married and dependent on their husbands, mortality, etc. not having yet had much impact:

Age HHH	# All HHH	# Vulnerable HHH	# Male Vulnerable HHH	# Female Vulnerable HHH
less than 20	7	0	0	0
21-30	86	2	2	0
31-40	63	6	3	3
41-50	55	1	0	1
51-60	28	1	0	1
61-70	20	0	0	0
71-80	8	0	0	0
81-90	2	0	0	0

- As is typical of other villages, the number of vulnerable female HHH increases with age.

Size

- The average HH size of all Mbanga's vulnerable HHs is only 5.5 versus the large HH found among vulnerable families in most other villages. But, by circumstances the Project affected HH are larger, running 8-9 HHM, and the never touched HH smaller, running 4-6. The total number of HHM in the HH never surrendering land to the Project is 27 versus the Project affected HHs' 61:

Age HHH	AVG HH Size	AVG Vulnerable HH Size
less than 20	2.7	0
21-30	5.1	4.5
31-40	6.8	6.8
41-50	6.8	7.0
51-60	5.7	4.0
61-70	3.5	0
71-80	2.9	0
81-90	4	0

Land Holdings

- Looking at the number of individuals within HHs shows the percent of the entire population, not just of HHs, that finds itself at that particular economic level.
  - 6% of Mbanga's population lacks sufficient agricultural land, though there may be other HH sources of revenue.
  - Another 10% live on the margin of agricultural poverty.
  - The remaining 84% of the population find themselves in good circumstances:

Range of Land Holdings (cde/capita)	Number of HHs	Number of Individuals	% HH	% Individual
0	0	0	0	0
0.001 - 0.667	16	88	5.95%	5.80%
0.668 - 0.999	17	145	6.32%	9.56%
1.000 - 2.499	83	553	30.86%	36.45%
2.500 - ...	153	731	56.88%	48.19%
Total	269	1,517	100.00%	100.00%

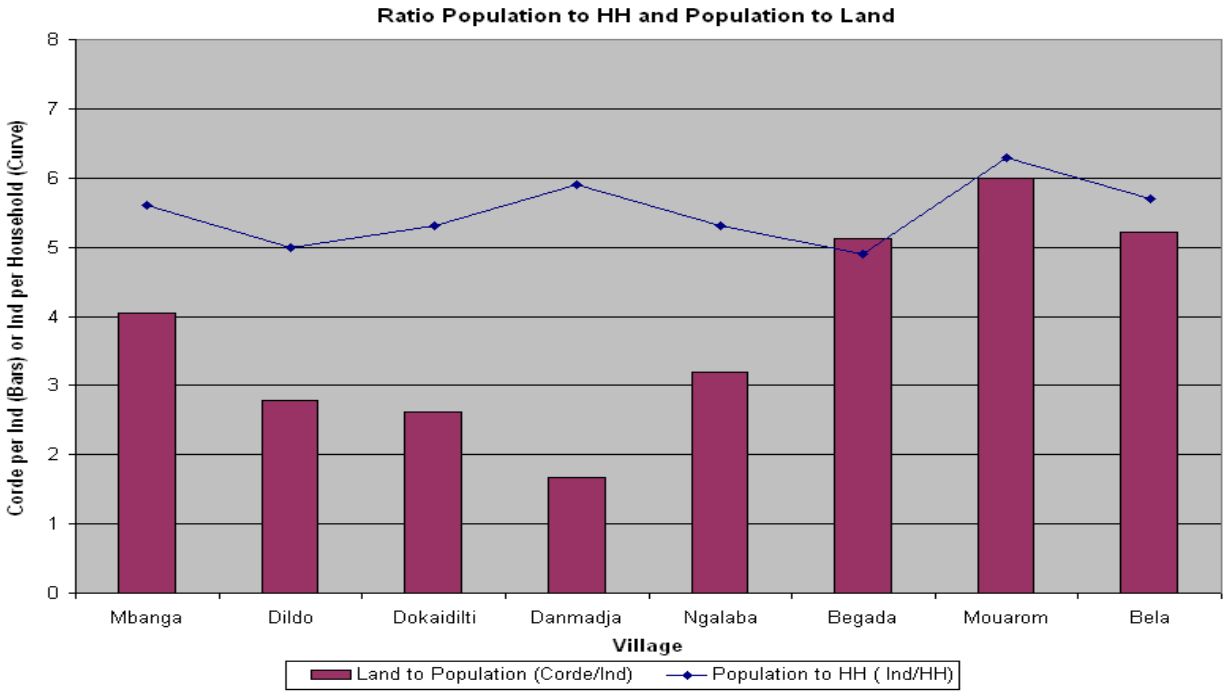
Description of Project Impact

Most of the land occupied by project well pads lies well east of the village area, close to and paralleling the Loule River. Just to the west of the well pads lie two large borrow pits. A few well pads are scattered elsewhere. Hence the location of oil facilities has little impact on the villagers' daily movements.

- **As a village, Mbanga is not in a vulnerable state**. There is still plenty of land and the average viability factor per capita is quite high:

Status of Average Mbanga HH			
Pre-project		With Project	
Av Land/HH	av fct/HH	Av Land/HH	av fct/HH
22.6 cordes	4.1 c./dep	21.3 corde	3.8 c./dep

- Mbanga's ratio of the number of HHs to village population is similar to other villages.
- The ratio of population to land area is somewhat more variable among the villages, with the fishing villages needing less land for viability than farming villages. But again the ratios are fairly consistent:



In the graph above Dildo, Dokaidilti and Danmadja, three fishing villages (these HHs require less agricultural land), are grouped; the remainder are farming villages.

The table below depicts the proportions of each village population falling into the different land holding categories. Mbanga supports the proposition emitted in the Begada SSP:

- Land pressure does not directly create more non-viable HH but instead increases the number of marginal HHs. Non-viability is caused by a conjunction of land pressure and other social factors such as age, personality, handicaps, gender and ability to access family land.
- Land holdings in Mbanga are skewed towards very large land holders versus a few people with very little land.
- Not one of the top 175 land holding HH out of the 269 in Mbanga was made non-viable by Project land acquisition.

Skewed Land Holdings in 6 Villages (Begada, Danmadja, Dildo, Dokaidilti, Mouarom, Ngalaba) & Mbanga				
Agricultural Sustainability	Vulnerable	Marginal	OK	Wealthy
Resettlement factor	0-0.67	0.68-0.99	1.00-2.49	2.5 +
% HH in 6 villages at factor	8%	9%	37%	45%
% HH Mbanga at factor	6%	6%	30%	57%

- **Considered as Households**, upon completion of the village survey in June 2009:
  - 16 HHs are below the agricultural viability level of 2/3 corde per HHM.
  - The total number of individuals in these HHs is 88.
  - 6 of these HH never affected by Project land take.
  - 10 compensated HHHs, (6 female headed, 4 male-headed), are non viable.
- Considering Non-Viable HH that have never surrendered land to the Project:
  - 3 female HHH never affected by the Project, age 32, 47 and 49. Their HH contain 3, 4, and 2 individuals respectively.
  - Of the 3 male HHHs, two are age 27 and one is 22. The 27-year olds' HH have 8 and 6 members while the 22-year old has 4.
  - The total number of individuals in the non-viable but never compensated HHs is 27.
- Considering project-affected non-viable HH:
  - The 6 women range from age 31 to 55, the size of their HHs from 4 to 8.
  - Of the 4 male HHs, 2 are in their mid-late 20s with HH of 3 and 6 members; 3 are in mid-30s and each HH numbers 9 HHM.
  - The total number of HHM in these Project-affected NV HH: 61.
- Considering the 17 marginal HHs in Mbanga:
  - 4 of the 17 marginal HH are non-compensated HH.
  - 4 are headed by females.
- The average age of marginal HHHs is 40 as it is among Non-Viable female HHHs; but the average age of Non-Viable male HHHs is 28. This difference may

reflect the fact that many men in their 20s have not yet acquired much of the family land holdings.

- Considering well-set HH:
    - 83 HH are fine in terms of land holdings/resettlement factor: 1-2.5 cordes/HHM.
    - 153 HH had ample land holdings of 2.5 or more cordes/HHM.

Declared versus Measured HHs

- Before the Project started, 44% of the individuals (not HH) were, according to the compensation database i.e. data of people's ***reported*** landholdings, already below the Project's metric for viable farming (2/3 corde of land per Household Member or c per HHM).
- According to the same database, Project land take increased the number of eligible individuals to 60%.
- From the village survey, only 6 HH out of the 10 project's affect HH were already vulnerable before the Project (= 3% of the 211 project's affected HH) and the Project made 4 HH vulnerable (=2% of the 211 project's affected HH) by acquiring their land.

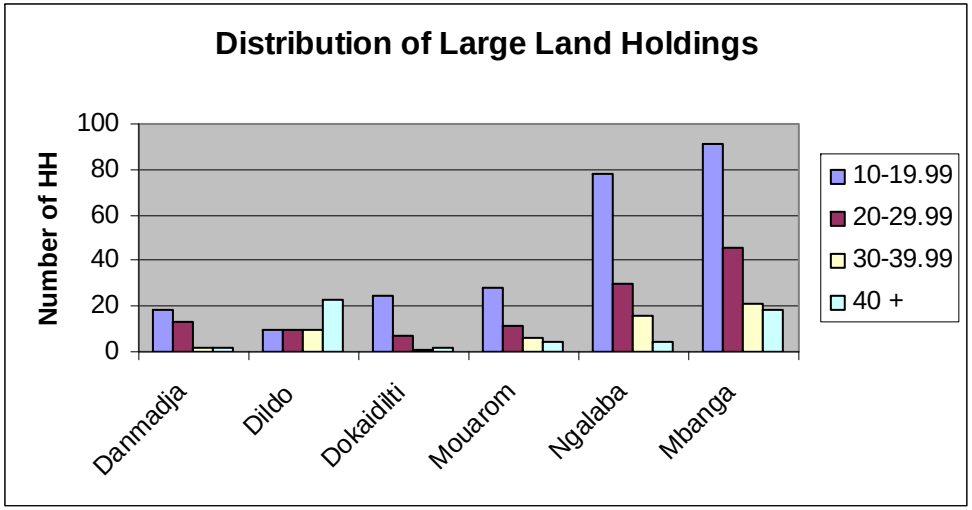
In the following table the 1995 HH data is “declared” rather than topographical measurements of the number of cordes per HH:

Difference in land distribution by HH between OFDA average 1995 and Mbanga and other OFDA Villages in 2008

Land Distribution among HH (green = mode)										
	OFDA	Dildo	Dokaidilti	Ngalaba	Begada	Danamadja	Mouarom	Bela	Mbanga	
cordes	1995 HH	2008 HH	2007 HH	2008 HH	2009 HH	2008 HH	2008 HH	2009 HH	%	# HH
0	see < 1	1.80%	0.00%	1%	1%	0.00%	1.20%	0%	0%	0
< 1	4.70%	1.10%	1.20%	0%	1%	1.00%	1.20%	0.70%	0.40%	1
< 2	10.50%	9.10%	2.40%	4%	3%	5.90%	1.20%	2.10%	4.10%	11
< 3	12.10%	8.00%	9.40%	4%	3%	9.90%	1.20%	5.60%	3.00%	8
< 4	16.00%	8.40%	8.20%	5%	3%	8.90%	4.70%	5.60%	8.20%	22
< 5	14.80%	8.70%	4.70%	7%	2%	11.90%	4.70%	2.10%	4.80%	13
< 6	9.30%	7.30%	8.20%	9%	3%	7.90%	2.40%	4.90%	3.30%	9
< 7	8.00%	6.90%	4.70%	6%	4%	5.00%	4.70%	0.70%	4.10%	11
< 8	5.10%	4.40%	8.20%	4%	3%	9.90%	5.90%	3.50%	3.00%	8
< 9	6.80%	3.30%	11.60%	4%	4%	2.00%	4.70%	6.30%	3.70%	10
< 10	2.30%	5.50%	5.90%	5%	5%	4.00%	7.10%	3.50%	4.50%	12
> 10	8.20%	36.00%	35.30%	41%	69%	33.70%	61.20%	65.30%	61.10%	164

- The modal land holding in Mbanga is 10 or more cordes, versus the 3-4 cordes found in other surveyed villages.
- 61% of the top landholding households have more than 10 c of land. To break this down in a different way:
  - 0.4% of Mbanga’s HH have less than 1 corde.
  - 39% of HH are between 1-9.99 cordes:
    - Of the 39% only 59% have fewer than 5 cordes (20% of the total number of HH).
  - 31.5% have between 10-19.99 cordes.

- In other words, the majority of Mbanga's farmers are land-rich farmers:
  - Most of the HHs in Mbanga have between 10-20 cordes.
  - Among large landholders 10-20 cordes is the most common in all the villages, except Dildo. Dildo is a fishing village; fishing provides alternate income and is an activity that takes people away from doing field labor. But in Dildo there are a number of holders of very large tracts of long term fallow that show up in the table below:



- Although the village of Mbanga has a whole has enough land for an average HH to leave fallow fields for 18 years, the unequal distribution of holdings leaves a few households with so little land that their fields cannot sufficiently recuperate fertility hence the HH will become progressively poorer as their yields decline:

Land Data	Dokaidilti	Dildo	Ngalaba	Danamadja	Begada	Mouarom	Bela	Mbanga
Cultivated Field or owned fallow by outsiders (% of available land)	121 Ha (21 %)	141 Ha (9 %)	141 Ha (8 %)	17 Ha (4 %)	272 (9%)	531 (45%)	389 (20%)	577 (20%)
Field cultivated by resident (% of available land)	302 Ha (52 %)	668 Ha (40 %)	1043 Ha (59 %)	241 Ha (63 %)	1190 (40%)	291 (25%)	755 (39%)	1122 (40%)
Fallow owned by resident (% of available land)	149 Ha (26 %)	792 Ha (48 %)	553 Ha (31 %)	124 Ha (32 %)	1497 (50%)	342 (29%)	838 (42%)	1078 (38%)
% of Cultivated Field or owned fallow by women	15 %	17 %	29 %	22 %	30 %	14 %	12 %	22 %

Household Data	Dokaidilti	Dildo	Ngalaba	Danamadja	Begada	Mouarom	Bela	Mbanga
Number of Households	85 HH	275 HH	249 HH	101 HH	259 HH	85 HH	144 HH	269 HH
Average HH Size	6.3 HHM	4.9 HHM	5.3 HHM	5.7 HHM	5.0 HHM	5.3 HHM	5.9 HHM	5.6 HHM
Average Land per HH	11.3 cordes	11.2 cordes	12.6 cordes	10.3 cordes	20.7 cordes	19.6 cordes	22.8 cordes	16.6 cordes
Average Resettlement Factor	1.80 cordes/HHM	2.29 cordes/HHM	2.39 cordes/HHM	1.8 cordes/HHM	4.17 cordes/HHM	3.69 cordes/HHM	3.88 cordes/HHM	2.95 cordes/HHM

People that are dependants of the household but reside outside the village are counted in this population (3 in Dokaidilti and 3 in Dildo)

Number of Years Fallow Possible Given Current Land and Population									
Village	**Measure**	Bela	Mouarom	Dildo	Ngalaba	Begada	Danmadja	Dokaidilti	**Mbanga**
Arable Land INSIDE	ha	1 950	1 175	1 656	1 768	2 963	385	583	2817
Arable Land OUTSIDE	ha	73	217	101	69	60	122	39	70
Total Arable Land	ha	2 023	1 392	1 757	1 837	3 023	507	622	2 220
Arable Land INSIDE	m2	19 500 000	11 750 000	16 560 000	17 680 000	29 770 000	3 850 000	5 830 000	28 170 000
Arable Land OUTSIDE	m2	730 000	2 170 000	1 060 000	690 000	760 000	1 220 000	400 000	790 000
Total Arable Land	m2	20 230 000	13 920 000	17 570 000	18 370 000	30 230 000	4 800 000	6 220 000	22 201 000
Population	Per capita	846	447	1 346	1 324	1 285	570	534	1 501
Length Cultivation	years	4	4	4	4	4	4	4	4
Necessary Area Per Person	m2	3 362	3 362	3 362	3 362	3 362	3 362	3 362	3 362
Years Fallow Village Only		23.4	27.2	10.6	11.8	23.4	3.4	8.9	**13**
Years Fallow Village + Outside		24.4	33	11.5	12.5	23.9	6	9.8	**20.3**
Formula : Allan & Brush									
LengthFallow =((ArableLand*LengthCultivation/Population) - NecessaryAreaPerPerson*LengthCultivation)/NecessaryAreaPerPerson									

Project Impact on Mbanga

Compensation

Compensation affected the village as follows:

- 61% of Mbanga's productive inhabitants (older than 20 years old = 327 individuals) were compensated.
- 78% of Mbanga's households were compensated.
- 85% of male HHH received compensation, in contrast to 57% of female-headed HH:

Age	Nbr Individual	Nbr Men	Nbr Women	Nbr Compensated Individual	Nbr Compensated Men	Nbr Compensated Women
0-9	576	301	275	5	2	3
10-19	394	201	193	57	37	20
20-29	216	101	115	122	78	44
30-39	136	50	86	103	47	56
40-49	90	37	53	53	31	22
50-59	44	17	27	26	13	13
60-69	26	7	19	14	3	11
70-79	13	3	10	6	2	4
80-89	4	1	3	3	1	2
N/A	2	1	1			
Total	1,501	719	782	389	214	175

- The large number of compensated women compared to the number of female HHH shows that many women cultivate on their own account, even when married.
- Under-age (0-9) but compensated individuals shows the practice that has developed of subdividing a field at compensation identification, attributing a portion to a child, and then collecting the set minimum compensation, which is worth more than the area if it had been included in the adult's field.
- 10-19 year olds have their own fields on land granted by their relatives, but the number of their fields is low; as time passes and they move into their 20s they

will add more and more fields, according to their own capacity and the availability of family land.

Surrendering land to the Project is not the only cause of Non-Viability, as the following table shows. Some of the people compensated for land were already Non-Viable before the Project began. Whether or not the Project made any compensated HH Non-Viable, if a household is compensated and is found to be under 2/3 corde per HHM, the compensated person is eligible for a resettlement option:

# Mbanga HH at Vulnerability Factor					
HH viability factor	Total # current HH	Male HHH 188		Female HHH 71	
		before	now	before	now
zero	0	0	0	0	0
<2/3	16	4	7	8	9
<1	17	6	12	5	5
<2.5	82	52	65	15	17
2.5 +	154	119	119	119	32

As noted above in discussing Declared versus Measured Data, the latter is far more accurate in identifying vulnerable HHs:

All Compensated HHs in Mbanga						
Resettlement Factor	Nbr HH	Nbr Individuals	% All HH	% of Population	Nbr Resettlement Option	Nbr HHM in Reset Op HH
0.000 - 0.667	10	61	4.74%	2.94%	0	0
0.668 - 0.999	13	120	6.16%	9.25%	4	44
1.000 - 2.499	64	486	30.33%	37.47%	18	184
2.500 - ...	124	630	58.77%	48.57%	27	187
Total	211	1,297	100.00%	100.00%	49	415

- In Mbanga none of the Non-Viable HHs was so identified on the basis of their declarative data.
- The 10 HH uncovered by the Village Land survey have all been offered a resettlement option.
- The 10 HH have all declared their choice and will attend business and literacy classes and then be trained in 2010:
  - 2 chose 3rd party compensation for land.
  - 8 chose Improved Agriculture with a dry season option of animal husbandry.

- The following table shows how many sacks of sorghum were theoretically lost (if all the area surrendered had been in sorghum cultivation) from the area surrendered and the CFA value that any income-earning resettlement option should make:

Gender of Vulnerable HHH	Cordes Lost	% original holding compensated	# Household Members	Resettlement Factor	Replacement value in CFA	Replacement value of sorghum: # sacks
Female	0.013	1	7	0.254	737	0.1
Female	0.091	4	4	0.489	5 161	1.0
Female	0.247	6	6	0.594	14 008	2.7
Female	0.271	11	4	0.562	15 369	3.0
Female	0.593	12	8	0.559	33 630	6.5
Male	0.762	46	3	0.298	43 214	8.4
Female	1.19	27	6	0.649	67 486	13.1
Male	1.951	37	6	0.561	110 643	21.5
Male	3	45	9	0.403	170 133	33.0
Male	7.061	72	9	0.308	400 436	77.7

- As a rule of thumb 1 person requires 1.8 sacks/year.
- The largest area of land surrendered by any HH was 7 cordes.
- The largest looser of land holdings, the production value of which is 77 sacks – if the entire 7 cordes was under production – requires a minimum of 16 sacks per annum to feed his family (9 HHM x 1.8 sacks).

Change in social status

Social Impact 1998 through 2008 Mbanga		
Social Situation	#	%
All HH	269	100%
All Compensated HH	211	78%
Compensated HH Situation remains the same	186	69%
Landholding Situation Changed	25	9%
No land	0	0%
Non-Viable with some land	4	1%
HH dropped to Marginal	6	2%
Wealthy HH reduced to OK	15	6%

- Whereas 16 HH in Mbanga are Non-Viable only 4 of them have been made non-viable by Project land acquisition (excepting some other unidentified social factor).

- 6 of the currently Marginal HH, 17 in number, may have been reduced to marginal by Project land acquisition (always excepting some other unidentified social factor).
- Out of the 82 OK HHs in Mbanga today,15 used to be wealthy land holders
- The total social impact of the Project on changes in HH situation is 25 HH/211 HH, or 9%.

Project Impact on Mbanga 1 and Mbanga 2

Mbanga 2 was originally a quartier of Mbanga 1 which grew as an excrescence rather than splitting and moving to a new area. There is therefore some admixture of HHs of each quartier, but most of Mbanga 1 is located to the north and 2 to the south.

The 2 villages are similar in almost all respects except that Mbanga 2 has significantly smaller population and fewer HH. Even in terms of Project impact about the same % of people have been compensated:

- 77% in Mbanga 1.
- 80% in Mbanga 2.

The principle difference between the two villages is in the amount of land available
This difference existed even before the Project:

- Mbanga 1 had 19.4 cordes per HH before the Project.
- Mbanga 2 had only 16.9.
- Per capita Mbanga 1 had 3.4 cordes per capita.
- Mbanga 2 had 3.1.

Although Mbanga 1 and 2 have equal numbers of wealthy HHs (57 and 56%), there is a difference in the number of less well situated HH:

- 38% of Mbanga 1 HH are OK whereas only 28% of Mbanga 2 HH are in the same landholding situation.
- Similar % of HH are Non-Viable: 6% in Mbanga 1, 7% in Mbanga 2.
- The difference is squeezed into the number of Marginal HH:
    - Mbanga 1 32%.
    - Mbanga 2 28%.

All Mbanga Population =	Mbanga 1	Mbanga 2
Population quartier	920	581
% pop quartier/total pop	61%	39%
Pop density people/corde	0.33	0.36
Pop density cordes/person	3	2.8
# HH in quartier	162	107
# Male HHH	126	80
# Female HHH	36	27
% M HHH/HH in quartier	78%	75%
% F HHH/HH in quartier	22%	25%
# HH Compensated	125	86
% HH in quartier comped	77%	80%
# Trained	31	19
Av.corde/HH in quartier before	19.4	16.9
Av.corde/HH in quartier now	17.4	15.4
Av corde/capita in quartier before	3.4	3.1
Av corde/capita in quartier now	3	2.8
Av # HHM	5.7	5.5
Av Age HHH	40	37
Number Zero land	0	0
Number Non Viable	9	7
Number Marginal	7	10
Number OK	52	30
Number Wealthy <10 cde	85	56
Number Wealthy <20 cde	5	3
Number Wealthy <30 cde	3	1
Number Wealthy <40 cde	0	0
Number Wealthy >40 cde	0	0
% HH in quartier Zero land	0%	0%
% HH in quartier Non Viable	6%	7%
% HH in quartier Marginal	4%	9%
% HH in quartier OK	32%	28%
% HH in quartier Wealthy <10 cde	52%	52%
% HH in quartier Wealthy <20 cde	3%	3%
% HH in quartier Wealthy <30 cde	2%	1%
% HH in quartier Wealthy <40 cde	0%	0%
% HH in quartier Wealthy >40	0%	0%

cde		

The difference in the number of Marginal HH may substantiate the fact that HHs move towards available land as land pressure increase on the HH, but there may be a certain inertia before picking up and moving house.

Resettlement Program Impact on Mbanga

The information in this section has been developed from surveys and monitoring results of On and Off-Farm training plus the Social/Land Survey. For HH for which no On- or Off-Farm survey information is available, the Social/Land Survey provide the only, though detailed, basis for judging impact. The Resettlement Programs purpose is to remediate the social situation of HHs that are Non-Viable and whose situation has been worsened by the Project.

Resettlement Options

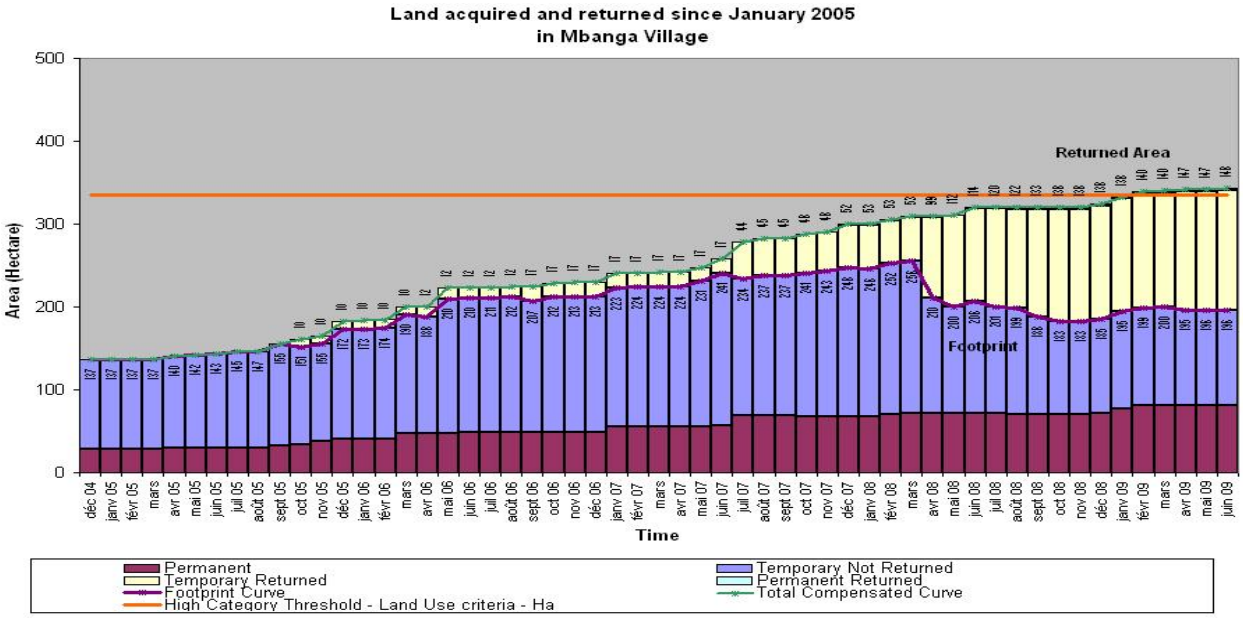
- Up through the completion of the village survey 50 people had been trained, twice as many in Improved Agriculture as in Off Farm.
- 6 Off Farm graduates and 23 Improved Agriculture graduates who graduated between 2002 and 2005 had established a track record that demonstrated they had done well enough to restore their standard of living, or almost.
- 29/31 graduates from this period had succeeded in using their choice of resettlement option positively when surveyed in 2007.
- The graduates who had done well received reinforcement training and equipment during the 2009 dry season; early monitoring of those reinforced shows a substantial increase in their livelihood after the reinforcement.
- 22 On Farm graduates who had shown dedication in applying their training received reinforcement training in 2009:
    - 14 in animal husbandry.
    - 2 in transformation of local products.
    - 3 in agroforestry.
    - 3 in vegetable gardening.
    - A 23rd received farm equipment needed for her to implement her previous training.
- 6 On Farm graduates who were plying their trade were reinforced in 2009:
    - 2 in carpentry.
    - 2 in tailoring.
    - 1 in masonry.
    - 1 in welding.

- According to the Village Land Survey which noted clearly each HH's land holdings, none of the 16 non-viable HH had, unfortunately, been offered a resettlement option.

- In 2009 they entered into public consultation and counseling on the choice of an option:
    - 8/10 chose Improved Agriculture with a dry season specialization in animal husbandry.
    - 2/10 chose land through 3rd party compensation (not through resettlement in another village).

Land Return

- With projected return of land taken for temporary use by the project, only 1 At Risk HH will move to a marginal status, above 2/3 corde.
- Other non-viable HH will need some other solution than straight return of their portions of land used to end their land shortage – training or access to land through Third Party compensation:



Physical Resettlement

No one in Mbanga has chosen to be resettled in another village.

Supplemental Community Compensation

Mbanga, like the other impacted villages in the OFDA, is being included in a Supplemental Community Compensation program. According to the principles of compensation, Individual compensation for land covered the lost crop plus the cost of putting another field in cultivation for a replacement crop in the next year. Community compensation was given for permanent land take or for temporary land taken for more than one year. In highly affected villages the time for return of temporary land has been protracted and there has been more stress on community land resources. LUMAP is providing Supplemental Compensation for the "temporary" land that was not returned within 1 year.

Mbanga started the Participatory Rural Appraisal (PRA) process with the Non Governmental Organization (NGO) BELACD-Doba in 2Q 2008. Mbanga 1 has chosen a classroom and Mbanga 2 a community granary, which will be built as the construction schedule and rainy season will allow.

Mbanga's Current Needs and Resources

- The amount of land needed by those compensated families at risk to become economically viable is 6.5 ha.
- The amount of land needed by the other non-viable families untouched by the project to be economically viable is 2.6 ha.
- The total land shortage for needy HH in Mbanga is 9.1 ha.
- Mbanga's arable land = 2817 ha; since the inhabitants have moved from elsewhere they also have 70 ha of farmland in other villages.
- 61% of HH are holding more than 10 cordes of land apiece and 57% have more than 2.5 cordes per HHM.
- Like Dokaidilti, Mouarom and Bela a big % of Mbanga's land in cultivation or in fallow is farmed by people from outside Mbanga – 20% of Mbanga's land.
- At present Mbanga has enough land within its boundaries to leave a field in fallow for 20 years; if the land Mbanga's inhabitants still farm outside their village is included, fallow could last up to 13 years.
- 3-4 years is the current norm for fallow to recover in the OFDA.
- Mbanga village has enough arable land to provide all its inhabitants more than 2/3 c per HHM.
- Mbanga village has enough land to maintain the desired rotation of 4 years of cultivation, 3 years of fallow.

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). As a whole the village of Mbanga is one of the best placed villages in the OFDA for available land.

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

- 6 project-affected HH are non-viable; they will be offered resettlement options in 2009, participate in Basic Business, Literacy, and Arithmetic Training in 2010 and then implement their option – either Improved Agriculture training or resettlement on distant farm land (of which there is plenty) or in another village.
- If these options do not succeed during the 2 year's of monitoring, then the HH will be offered land through 3rd party compensation.
- 1 unaffected HH is non-viable -- she can participate in BBS and, if the other non-viable HH choose Improved Agriculture Training, she can also benefit from the training.

The following table describes each option and its relevance to the At Risk Households in Mbanga as per the CRCP, LMM procedures and Management of Change to the LMM currently in place:

Site Specific Actions for Mbanga

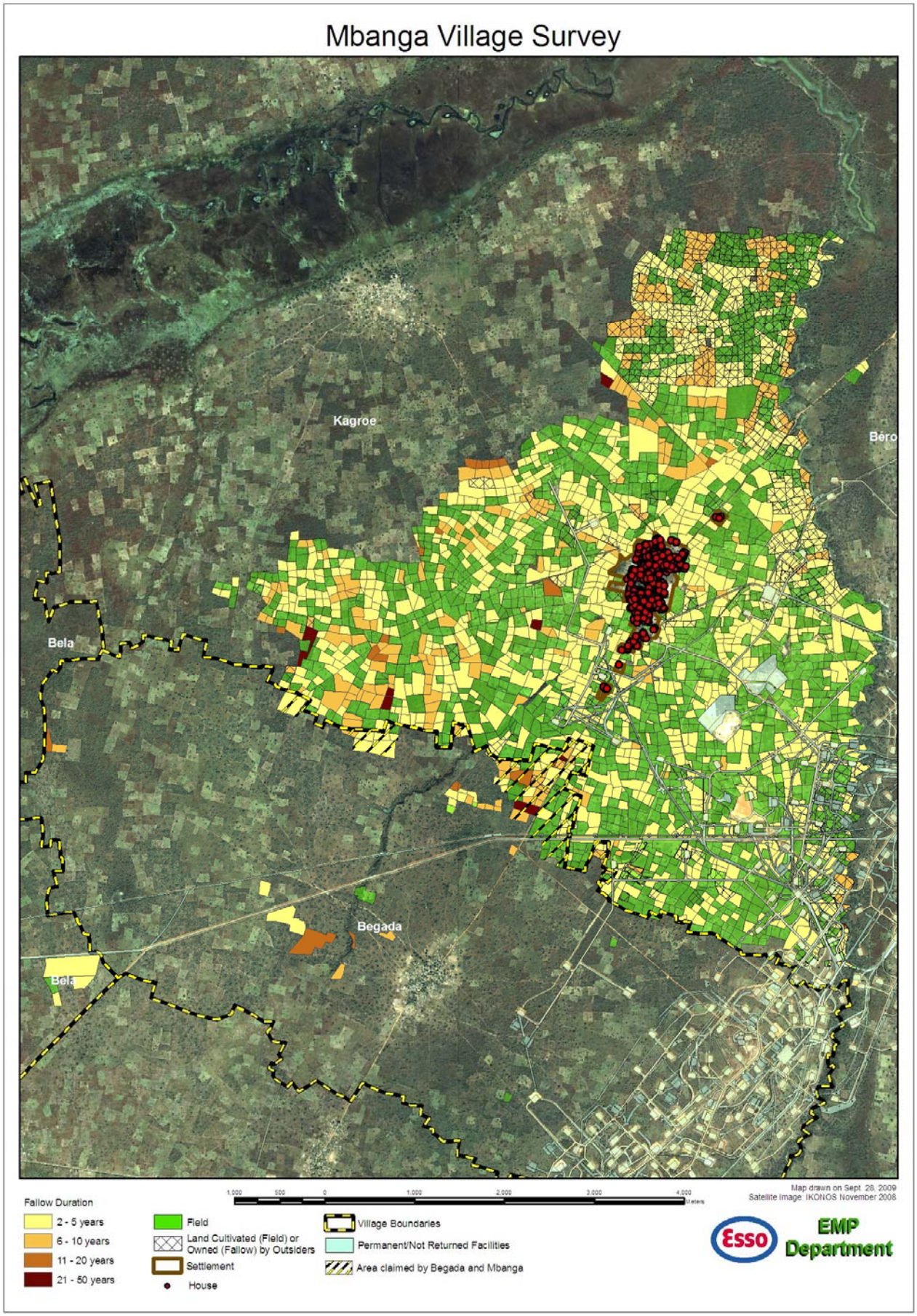
CRCP/LMM Resettlement Option	Description	Desirable Option (Yes/No)	Comments
Land Reclamation & Return	Reclaim land and return to community & former users; free land targeted to vulnerable HH	Yes	Mbanga has 202.1 ha of Borrow Pit land
Physical Relocation Individuals	Physically move at risk household to new location outside of current village	No	Not necessary; sufficient land available; average fallow of 20 years is possible
Third Party Compensation	Land User with surplus land may donate to at risk household and receive normal land compensation payment	Yes	If chosen as resettlement option or if other options fail
Off Farm Training	Provide training to earn income in non-agricultural work	No	The OFDA market demand for artisans is saturated
	Reinforce training to increase income earned to viable level	No	6 graduates have received advanced training and are doing well
Improved Agriculture	Provide training to generate more production of subsistence crops and produce cash crops	Yes	Good option in Mbanga which has ample rainfed land
	Reinforce training to generate more production of subsistence/ cash crops	No	22 graduates have received advanced training and are doing well
Rainy Season Resettlement	Provide field clearing, rainy season hut, well, bicycle, and hand cart for use in distant farm field	Yes	Good option as Mbanga has ample rainfed land
Physical Relocation of Village	Physically relocate entire village to new location in cooperation and in concert with government	No	Not necessary; sufficient land available
Supplemental Community Compensation	Phase 1: Rapid Participatory Assessment of Needs & Resources	Yes	Chose 1 school classroom and community granary
	Phase 2: Oversee implementation; Create	Yes	Reinforce Parent-Teacher Association and

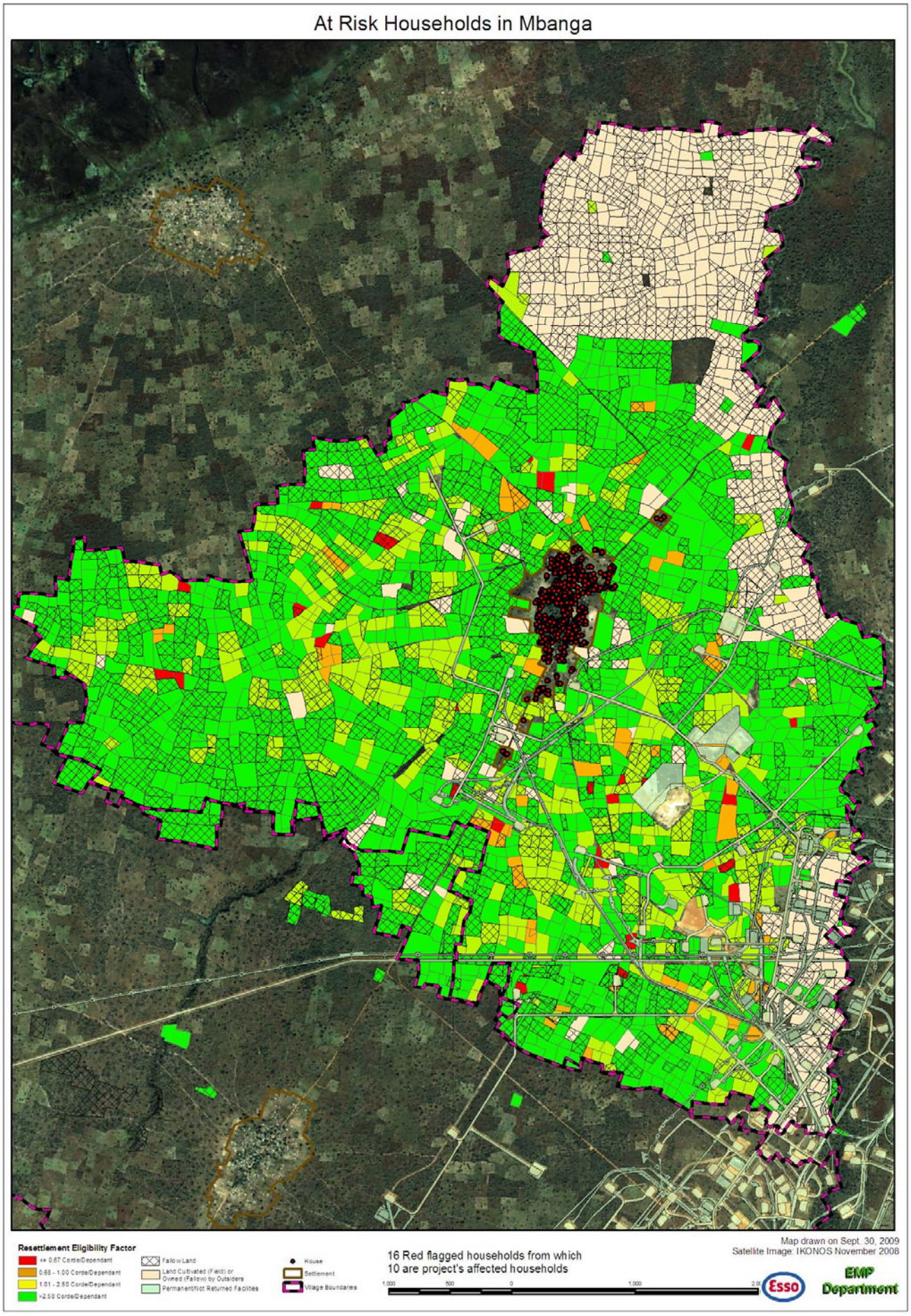
	management committee		Granary Management Committee

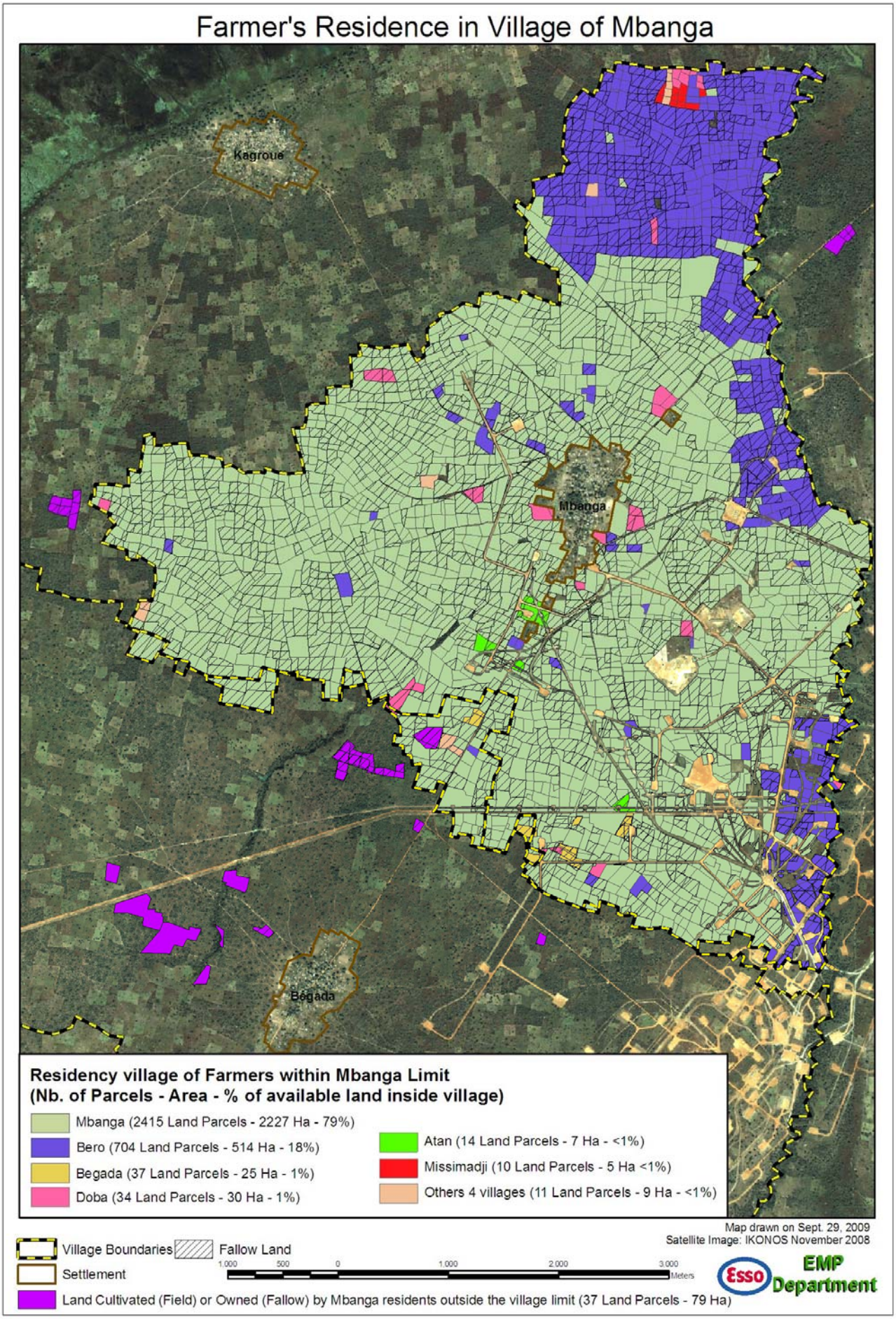
Site Specific Plan Implementation Timeline

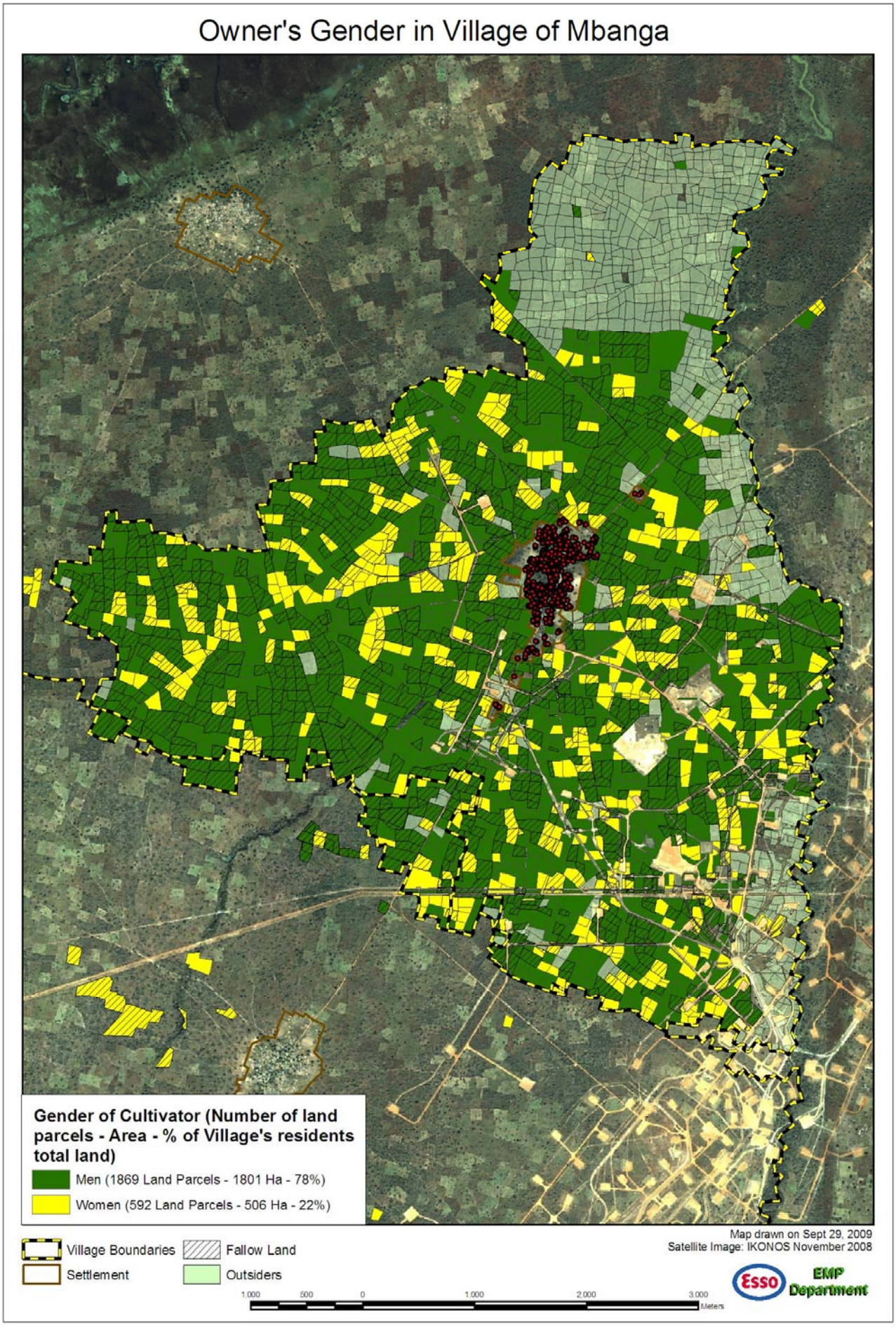
Grey = Completed; Blue = Underway; White = To implement

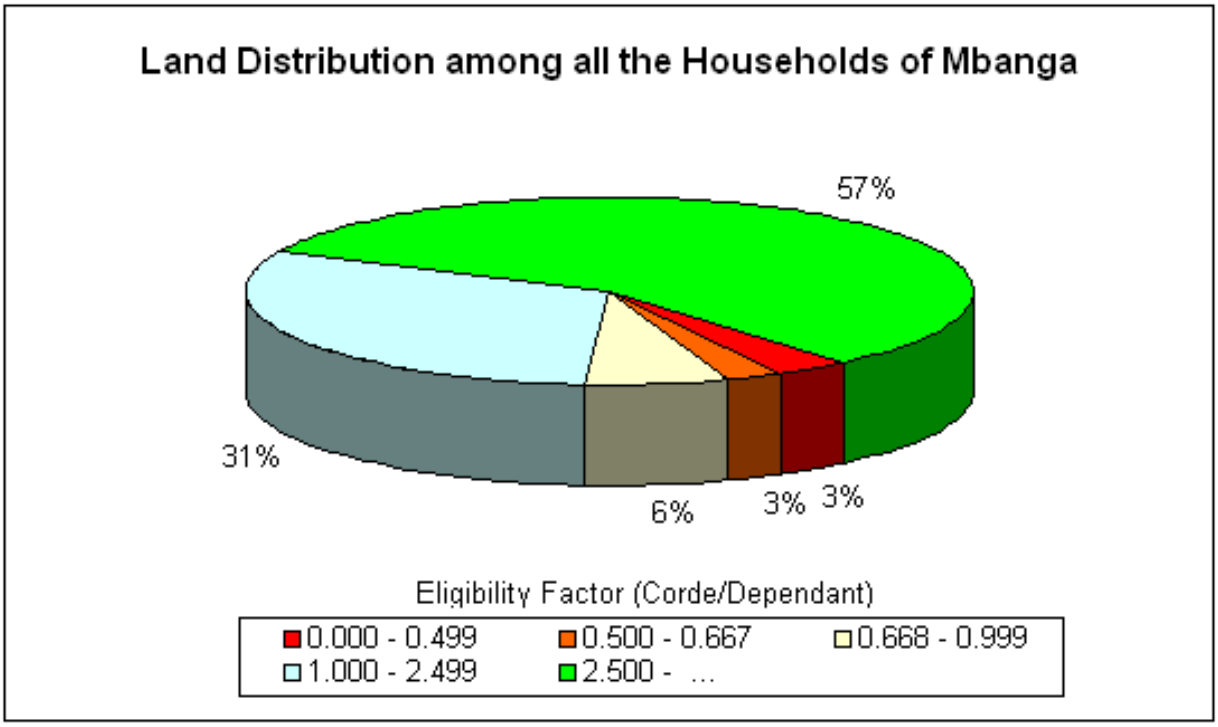
Action (grey indicates completed, blue underway)	Timeline
Land and social surveys completed	Jan 2009
Performance evaluations of Improved Agriculture and Off Farm graduates	July 2008
Bela choice of Supplemental Community Compensation	2Q 2009
Construction Mbanga Supplemental Community Compensation	4Q 2009 or 1-2Q 2010
EEPCI uses 3rd party compensation to transfer land to At-Risk individuals choosing this options	4Q 2009
EEPCI offers Reinforcement Training and equipment	1-2Q 2009
EEPCI offers Barefoot Business School and Improved Agriculture Training	1 – 3Q 2010


Mbanga Village Survey
Kagroe
Béro
Bela
Begada
Bela
1,000 500 0 1,000 2,000 3,000 4,000
Meters
Map drawn on Sept. 28, 2009
Satellite Image: IKONOS November 2008
Fallow Duration
2 - 5 years
6 - 10 years
11 - 20 years
21 - 50 years
Field
Land Cultivated (Field) or Owned (Fallow) by Outsiders
Settlement
House
Village Boundaries
Permanent/Not Returned Facilities
Area claimed by Begada and Mbanga
Esso
EMP Department


At Risk Households in Mbanga
Resettlement Eligibility Factor
<= 0.67 Corde/Dependant
0.68 - 1.00 Corde/Dependant
1.01 - 2.50 Corde/Dependant
>2.50 Corde/Dependant
Fallow Land
Land Cultivated (Field) or Owned (Fallow) by Outsiders
Permanent/Not Returned Facilities
House
Settlement
Village Boundaries
16 Red flagged households from which
10 are project's affected households
1,000
500
0
1,000
Map drawn on Sept. 30, 2009
Satellite Image: IKONOS November 2008
Esso
EMP
Department


Farmer's Residence in Village of Mbanga
Kagroue
Mbanga
Bégada
Residency village of Farmers within Mbanga Limit
(Nb. of Parcels - Area - % of available land inside village)
Mbanga (2415 Land Parcels - 2227 Ha - 79%)
Bero (704 Land Parcels - 514 Ha - 18%)
Begada (37 Land Parcels - 25 Ha - 1%)
Doba (34 Land Parcels - 30 Ha - 1%)
Atan (14 Land Parcels - 7 Ha - <1%)
Missimadji (10 Land Parcels - 5 Ha <1%)
Others 4 villages (11 Land Parcels - 9 Ha - <1%)
Map drawn on Sept. 29, 2009
Satellite Image: IKONOS November 2008
Village Boundaries
Fallow Land
Settlement
1,000 500 0 1,000 2,000 3,000 Meters
Land Cultivated (Field) or Owned (Fallow) by Mbanga residents outside the village limit (37 Land Parcels - 79 Ha)
Esso
EMP Department


Owner's Gender in Village of Mbanga
Gender of Cultivator (Number of land parcels - Area - % of Village's residents total land)
Men (1869 Land Parcels - 1801 Ha - 78%)
Women (592 Land Parcels - 506 Ha - 22%)
Village Boundaries
Settlement
Fallow Land
Outsiders
1,000 500 0 1,000 2,000 3,000
Meters
Map drawn on Sept 29, 2009
Satellite Image: IKONOS November 2008
Esso
EMP Department



	Total HH		Compensated HH			
	Nbr HH	Nbr. Individual Within HH	Nbr. Of Comp. HH	Nbr. Individual Within Comp HH	% HH	% Individual Within Comp HH
0.000 - 0.499	9	51	5	32	2.4%	2.5%
0.500 - 0.667	7	37	5	29	2.4%	2.5%
0.668 - 0.999	17	145	13	120	6.1%	9.2%
1.000 - 2.499	83	553	64	486	30.3%	37.5%
2.500 - ...	153	731	124	630	58.8%	48.8%
Total	269	1517	211	1297	100%	100%