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WFP/FAO Joint Rapid Food Security and Agriculture Assessment Report



**Dundo and Lovua, Lunda Norte
14 – 28 May, 2017**

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Disclaimer

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TABLE of CONTENTS

Summary of findings	4
Background	5
Methodological Considerations	6
Primary sources of data	6
Limitations of the assessment	7
Demographic profile of the refugee population	7
Food security profile of the refugee population in Kasai	8
Agricultural income	8
Participation in the market	9
Diversification of income sources	9
Main food sources in Kasai	10
Food security in the reception centers	10
Sources of access to food	10
Child nutrition	12
Putting the Refugees on the Map of Lovua	12
Forest based livelihoods	13
Key features of the local agricultural system	14
Timeframe for building agricultural based livelihoods	15
Site selection and implications for forest-based livelihoods	17
Potential for increasing production of food security crops by refugees	18
Conclusions and Recommendations	19

Summary of findings

A rapid qualitative emergency food security and agriculture mission was undertaken jointly by WFP and FAO, from May 14 to 28, in two refugee reception centers in Dundo – Kakanda and Mussungue. The mission also visited the prospective resettlement area in Lovua municipality. The primary objective of the joint mission was to (i) determine the profile of the refugee population requiring assistance; (ii) determine their food habits; (iii) assess the current food security situation; and (iv) assess the extent to which the site selected for permanent camp settlement can sustain agricultural based livelihood systems for the incoming refugee population. The data for this assessment was gathered primarily from focus groups and key informant interviews, complemented with a limited set of secondary data available at institutional level.

At the time of writing this mission report, there were 22,303 refugees pre-registered by UNHCR – a number which has been increasing at an average rate of 300 to 500 per day. The findings indicate a high level of current vulnerability to food insecurity due to the circumstances of war. The need for urgent food assistance is, therefore, not debatable. However, the same findings also suggest that, even in the absence of war, vulnerability to food insecurity in the areas of origin has been a recurrent phenomenon. Consequently, pre-existing vulnerabilities, coupled with little access to food assistance and limited opportunities to raise income, has resulted in higher levels of food insecurity. In order to maintain a minimum level of food consumption, most families eat only one meal per day, preferably mid to late afternoon so that they survive the long evenings in Dundo. The current food rations are supplemented by other sources of animal protein acquired through in-kind payment for casual labor in local farms and other odd jobs performed in town. It is also estimated that some 30% of the food ration is sold in the local market, which provides the income to buy other essential food items and diversify the diet.

Direct food assistance to all incoming refugees will be required for a period of 90 days until adequate camp settlements are established. Once settled, a comprehensive food security assessment will be required to better inform food security and agricultural based livelihoods enhancement program. A targeted intervention can be planned thereafter.

The implementation of the current plan to relocate the refugees to Lovua will result in the destruction of virgin forest land with serious implications to ecological balance and disruption of local livelihoods. Both the local communities and the incoming refugee population rely on the forest for hunting, honey, gathering of wild leaf vegetables, water (which is not in large supply), and firewood. Therefore, this report recommends the selection of a different site with a view of making the most effective use of the land resources and enhance the livelihoods of both foreign and host communities. The report also recommends to settle refugees in 3 to 4 camps, allowing a better integration with hosting communities and lowering the impact on environment. This has not been discussed with the governmental authority and further consultation is needed if we are to choose such a new site.

Background

1. A detailed analysis of the social, political, and economic factors that triggered the conflict in the Kasai region is certainly beyond the scope of this assessment report. However, the report provides a brief overview of political events and policy issues that shaped social and economic development in the region in conflict as a background for understanding the current status of vulnerability of the refugee population.
2. As of mid-April 2017, thousands of refugees from the Kasai region have made their way to the Angolan border following the eruption of, again, a brutal conflict opposing local groups designated as militia and Government forces. Between April and May 2017, the daily rate of influx of refugees was calculated at between 300 and 500. By the end of the mission on May 29, UNHCR had registered 22,303 people in Kakanda and Mussungue reception centers in Dundo. Some refugees, men in particular, landed in a military airport following evacuation by air from DRC. Much of this background is already in the public domain following extensive media coverage as well as UN daily updates on the refugee situation and the political and military developments in DRC.
3. As a background to this assessment report, we are also concerned about the non-war factors that might have had a direct impact on the lives of rural communities over the past years, rendering them vulnerable to food insecurity. This is to say that in addition to war, the current levels of vulnerability within the refugee population is a compound effect of failed social and economic system in the republic of Congo. On the political front, a key theme that emerges from discussions with the refugee population in the reception centers is that the conflict in Kasai is not an isolated event; it is linked by and large to the political crunch in DRC.
4. But there is a social and economic dimension to the conflict too. The entire Kasai region is characterized by the deterioration of basic infrastructure, including improved roads, no jobs and poor access to services such as water and electricity – all contributing to high rates of poverty and malnutrition. The primary driving cause of the conflict is understood to be associated with a long-lasting struggle for a more equitable distribution of Congo's wealth as the Kasai region is perceived to be left far behind other provinces.
5. The Kasai region, which was split from two into five provinces in 2015 in a policy known as "*decoupage*", is one of the DRC's poorest, and far from the reach of politicians in Kinshasa. The economic viability of splitting the provinces remain questionable, as it had implications to the lives of the poor. It is arguably that the provinces have diamonds and gold, but the industry has long collapsed, and it created an illegal platform for smuggling activities. Infrastructure and electricity supplies remain largely inadequate. Brasimba Brewery is the main private industry, but it could not stand viable with recent economic meltdown, leaving an unstable public sector as the main source of formal employment. Kasai, the birth place of the insurgency, ranks very poorly in its human development indicators, including high levels infant malnutrition, as well widespread illiteracy among women and girls¹.

¹ Rapport national sur le développement humain 2014 (RNDH 2014) Cohésion nationale pour l'émergence de la République démocratique du Congo

6. The current group of refugees seeking secure shelter in Dundo, Lunda Norte, have been passive victims of a highly complex political instability, with serious implications to their welfare. This is the population that require short- and long-term humanitarian assistance. The group of refugees in both camps is mixed. The first influx into the country comprises of highly vulnerable refugees, carrying no belongings, no food, and wounded in some instances. Subsequent influx comprised of groups showing various levels of vulnerability, with some carrying cash and livelihood assets. It is against the above background that the assessment mission was carried out in the two reception camps – Kakanda and Mussungue.

Methodological Considerations

Primary sources of data

7. The assessment was conducted with a view of a) develop the profile of the target group; b) determine food consumption habits; c) assess the current food consumption; and d) and assess potential livelihoods and coping strategies.

8. The data was collected primarily through key informants and focus group interviews. That was the best approach given the available time and conditions in the camps at the time of the mission. After briefings and preparation sessions with UNHCR, WFP, FAO and MINARS representatives in Kakanda, the assessment team conducted field visits to obtain first-hand information from refugees in the two reception camps, and potential hosting communities in Lovua.

9. We conducted eight focus group discussions with people from different segments of the population grouped into male farmers; female farmers; female traders; a group designated as “intellectuals” comprising individuals holding college and university degrees as well as civil servants. For reasons beyond our comprehension, all educated professionals were found in Mussungue Reception Center. Farmers and traders made up the bulk of the interviewees, most of them found in Kakanda. Due to the low level of education of farmers and traders, the assessment team made excessive use of interactive tools such as proportional piling and pairwise ranking. Despite the low level of instruction, both male and female farmers demonstrated a very solid understanding of percentage distributions. And this was a determinant factor in the discussions of food insecurity and understanding their coping strategies.

10. The team held semi-structured interviews with key informants familiar with the social and political context of the conflict in the Kasai Region; the chronology of events leading to displacement and subsequent movement to the neighboring Angolan border; people familiar with the performance of key economic and social indicators prior to the eruption of the conflict in the region; and people who could explain the conflict from the perspective of the refugee population. A second group of key informants consisted of officials in provincial government offices such as agriculture, trade and commerce, and the Lovua municipal administrator.

11. Complimentary secondary data was provided by UNHCR, MSF, the Institute of Agricultural Development at provincial level, and the provincial Department of trade and commerce.

Limitations of the assessment

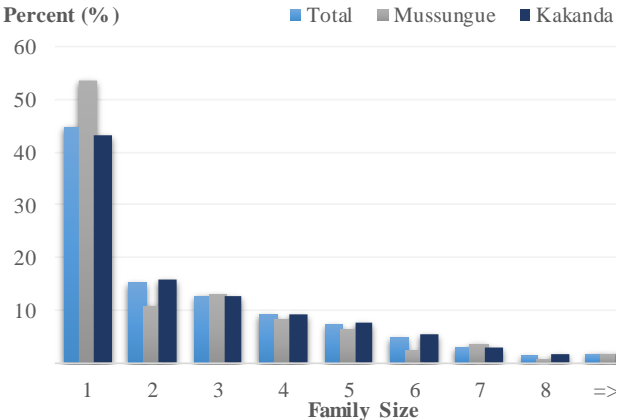
12. Assessing the food security in the current reception-camp situation is a rather daunting task. In both camps, Kakanda and Mussungue, the refugees are still settling in and there is not a settlement pattern yet. The daily rate of arrival of new refugees varies from about 300-500, resulting in rapid changes in demographics. Therefore, some of the findings from this assessment may be valid for a short time only. This is likely to happen with subsequent assessments, until people are resettled in permanent camps.

13. With respect to gathering security-related information, the timing of the assessment was perhaps not ideal. A camp organizational structure has been sketched, but at the time of the assessment there had been no physical implementation of the plan yet. Official permission to assemble the tents were long to come by, offsetting UN efforts to provide minimum physical protection to all refugees. A substantial number of families were found standing on bear-ground with their belongings. Therefore, it was not possible to conceptualize a structured assessment in this kind of set up. In addition, planning and implementation of the assessment were further hampered by the simultaneous and perhaps conflicting set of activities implemented by UN Agencies, NGOs and Government institutions in the same space and at the same time.

Demographic profile of the refugee population

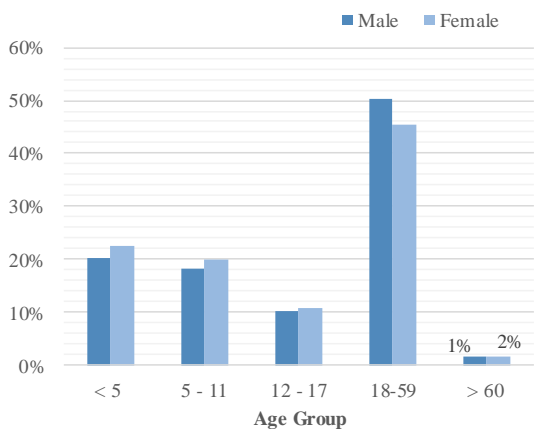
14. The demographic data presented here refers to the period from April 20th to May 22nd as per UNHCR’s registration records. A more detailed, and probably definitive, profile will be developed at the end of the biometric registration process currently underway. In the meantime, this assessment attempts to provide snapshot of the composition of the population in need of assistance. The three main variables in the dataset are family size, age and gender, which are displayed in Figures 1 and 2 below.

Fig.1. Percentage distribution of the population by family size



Source of data: UNHCR Dundo

Fig. 2. Distribution of the population by gender and age-group



15. At the end of the field mission, UNHCR had registered 18,836 people in both reception centers, divided in 7,113 families. The average family size is calculated at 2.65 which is influenced by a large proportion of “one man” family size. However, “one man” family is not a common phenomenon in the Kasai region where fertility rates have been historically high at 7.7, above the national average for the whole DRC. Therefore, the trend in Figure 1 can only be explained by the effects of displacement due to war. When we isolated the family size-1 from the distribution, the mean increased to size 4.3 with a less skewed distribution. The latter result indicates that with progress in the biometric registration, and as families reunite, there will be a different distribution of family size, more aligned with the actual profile of the target population. Future food distribution plans will have to be designed around the newly established pattern of family size of the population.

16. Adults aged 18 to 59 make up the bulk of the population in the centers, with men represented in slightly higher proportions than women. A common feature of war displaced populations is the largest presence of children. There is a child under the age of five in every five families, and the same applies to children at age group of 5 to 11. Together, children under the age of 12 make up about 40% of the population. Young adolescents aged 12 to 17 and the elderly from the age of 60 make up the remaining 12% of the population.

Food security profile of the refugee population in Kasai

Agricultural income

17. Agricultural production is an important livelihood for most households in the Kasai region. About 90% of the households depend on agriculture as their primary livelihood, with most farmers producing at subsistence level. It is estimated that close to 40% of the farming population currently in the reception centers cultivated between 1.5 to 2.0 ha of land. Constraints to agricultural production and marketing are similar across the borders. In the Kasais, some of the most pressing issues that farmers face related to production include a lack of quality seeds, fertilizer, pesticide, tools, agricultural finance, and water for irrigation. There is no shortage of land in the Kasai region, but a significant shortage of labor, thus few farmers can plant effectively more than one hectare. A similarly weak agricultural institutional framework is found in the southern part of the border (Lunda) where the population will be settled.

18. Despite the subsistence levels of production, farmers in the reception camps expressed with pride that they supply a significant portion of the locally produced foods consumed in the capital Kinshasa. However, lack of public investment in the entire Kasai region has been devastating for agriculture. Lack of proper farming equipment, improved seeds, and fertilizers to compensate for the relatively poor soils is resulting in declining yields of cereals and pulses. An increasingly high number of farmers are turning to such crops as cassava and sweet potatoes as they tolerate poor soil fertility better.

19. It was reported that farmers do turn into other sources of income during the growing season, but improvements in food security of the households remains a function of the

farmers' ability to increase agricultural productivity and farm income. Concerns have also been raised over storage capacity as a limiting factor to achieving food security. With the exception of cassava, which is stored on the ground for extended periods of time, all other crops are stored for four to five months only. The cereals harvest of June-July hardly bridges the following seasons harvest, resulting in suboptimal consumption in the period October-December – see Figure 6 for more information.

Participation in the market

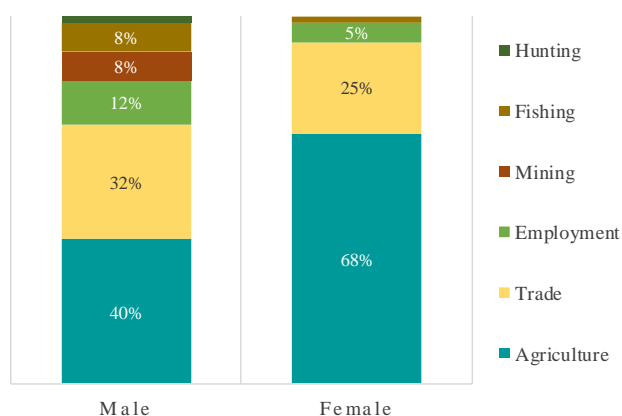
20. Focus group discussions with women in both Kakanda and Mussungue centers indicate that women are tremendously active in agriculture, carrying well over 60% of the responsibility to put food on the table and generate additional income. Market participation by women is very significant too. All women who reported to be subsistence farmers were also traders of their own produce. We estimated that less than 15% of the women relied entirely on trade for survival. Women in this category traded notably industrial items across provinces within the DRC and off the border with Angola. Lack of road networks restrict trade with other provinces, and most trade occurs in two market sheds. Movement of trucks for domestic goods has been limited, and farm produce reach the domestic markets largely by bicycles and locally adapted means of transport. Moving goods along the rivers was reported a commonly viable alternative.

Diversification of income sources

21. The sources of cash income vary by gender. As it was mentioned above women play a determinant role in agricultural production from where they also derive a substantial portion of their income. Agricultural income is also relevant for man but they have more competing alternatives such as fishing, mining, hunting, formal employment in the public sector, and trade. With respect to mining as a source of income, it was reported that only men are actively involved in this kind of activity. Women were found complementing their income mainly from petty trade. Only a small proportion of women reported to live entirely from trader, i.e. they have trade as a primary source of income while agriculture is maintained at minimal level.

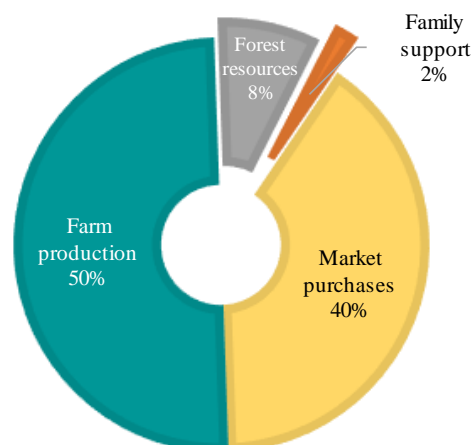
22. Men reported to have a more diversified source of income, with higher reliance on cash, hunting, fishing, and shelter construction/repairs. In the group interviews, diamond smuggling was reported as an important non-agricultural income source that facilitate food as well non-food purchases. Despite the declining trend in diamond activity following the implementation of restrictive access measure by governments in both sides of the border, men consider that it worthwhile trying. The discussions with refugees revealed that the better off households are those where women invest almost all of their time and resources in agricultural production, while the husband complements the household income through trade and mining activities. This category of households was found in both reception centers.

Fig.3. Main sources of cash income



Source of data: estimated from group interviews

Fig.4. Main sources of food for the household



Source of data: estimated from group interviews

Main food sources in Kasai

23. Despite the prevalence of farming as the main source of livelihood, own production provides about half of the household food needs, and a significant proportion (40%) is sourced from the market. The remainder comes from forest resources and family support, particularly in poor agricultural years. It is estimated that an average farmer spends slightly more than 40% of their total food expenditures on cereals they do not produce such as wheat and rice (the latter produced in very small quantities). Figure 3 and 4 provide estimates of the main sources of food and income derived from group interview.

24. Fish tends to be a more widely available protein source than meat and poultry. Fishermen in the Kasais depend on the large rivers and some lakes to fish. Inhabitants of Kasai are slightly more dependent on fishing, with 8% of households identifying it as one of their three primary livelihoods. However, artisanal fisherman lack access to materials, markets, knowledge of improved fishing techniques, and credit. Infrastructure, particularly transport constraints, currently limit access to lucrative markets; however, small-scale fish farming and household fish ponds have had significant impact on household nutrition and incomes in similarly challenged environments. Opportunities to increase the availability of and access to fish, and to increase its profitability should be explored once settle in Lovua.

Food security in the reception centers

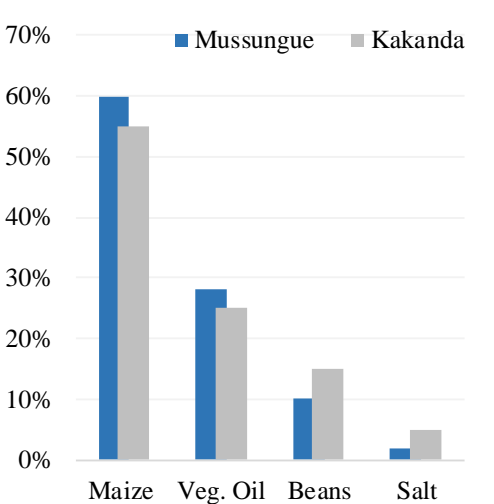
Sources of access to food

25. Food assistance, through direct distribution of a family ration, is the main source of food to refugees in the reception centers. All refugees expressed a deep sense of gratitude for receiving a survival food ration, consisting of maize meal (30kg), pulses (3.6 kg), Vegetable oil (1.5 L), and Salt (0.38kg), distributed every 15 days to a standard family of five. Most of the food consumption related questions were discussed in focus group

interviews with women, who reported that the food meets barely eight days of consumption at a frequency of one meal per day. However, the efforts that they have been making to supplement their food rations defies the notion that they are passively dependent on food assistance.

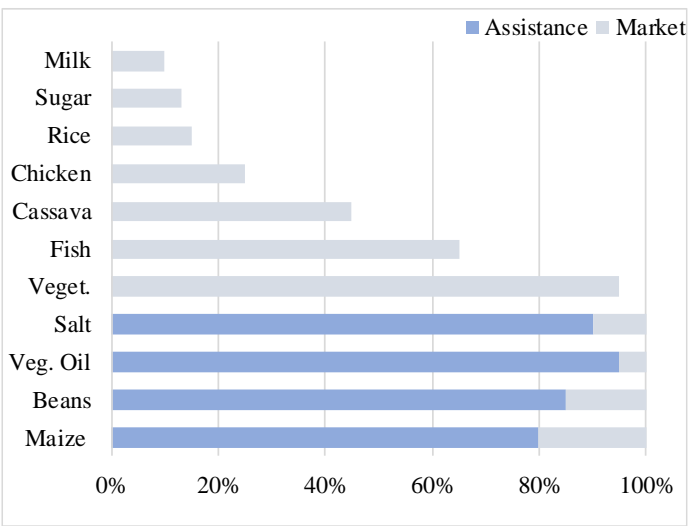
26. A local in-kind and cash economy is beginning to develop in the area, a process ignited by the presence of refugees who channel some 30% of their ration to the local food retail market. In Mussungue, one week after the arrival of the refugees, local residents from the surrounding communities moved swiftly to set up wooden stalls near the center. It was the beginning of a market place. These local vendors were very confident that the presence of refugees would spark an economic activity in the area. Two months later, we found that some refugees had taken control of a section of the market. In addition to food, they sell clothes and small hardware items.

Fig.5. Proportion of households who sell part of the food allotment in the market



Source of data: estimated from group interviews

Fig.6. Main sources of the food items consumed by the refugees



27. Food aid reach the market two days after the distribution. Maize meal flour is the most traded commodity of all four in the food allotment. We estimated that nearly two thirds of the beneficiary sell part of a maize in the market, and close to a third sell vegetable oil often in cups carrying a few grams. Beans and salt, which are supplied in small quantities, are found less available in the market. The cash the refugees obtain from these food sales, together with any other income they may have from wage employment outside the camp, enable them to purchase other food and non-food items. Fresh leaf vegetables, dried fish, cassava, and chicken make up the bulk of food items that complement the diet in the centers.

28. Maize meal flour is the main commodity in the allotment pack handed over by UNHCR, and it reaches all families in the distribution list. However, we estimated that some 20% of the maize consumption is met from market purchases. Beans is consumed in a few days following the distribution and market purchases are necessary to meet the consumption needs from one distribution to another. Many reported going without beans

for most of the month. A similar behavior was observed with respect to vegetable oil and salt. All other foods that complement the diet are purchased from the market but it is not within the reach of every family.

Child nutrition

29. The assessment did not make any considerations about the nutritional status of children refugees. At the time of mission, MSF had conducted a nutritional screening but the data was already outdated due to the continuous inflow of children. More recent screenings by UNICEF reported in the last week of May, covering 1,991 children found 2.6% of children screened with severe acute malnutrition (SAM) and 5.5% per cent with moderate acute malnutrition (MAM). UNICEF is providing Ready-to-Use Therapeutic Food (RUTF) for SAM treatment. Whilst the quantity and quality of the diet has undoubtedly declined for many refugees since they left Kasai, it is not possible to gauge what their nutritional status was before their arrival, and therefore impossible to discern between nutritional deficiencies due to poor quality diets whilst in the home country or at the reception center.

30. Discussions with key informants lead to conclusions that by mid-May, child nutrition had already improved if compared to a month earlier. However, the health and nutritional status of children in DRC has historically been poor, and despite public health efforts in recent years, child health and nutrition in DRC remains suboptimal². The Kasai region have the second- and fourth-highest under-5 mortality rates among the country's provinces. The poor nutritional status of children under 5 is an important contributor to these high mortality rates. The above background suggests that once the population is settled in Lovua, the nutritional interventions should consider focusing on prevention of chronic malnutrition and strengthening nutritional and health practices to improve infant and young child feeding.

Putting the Refugees on the Map of Lovua

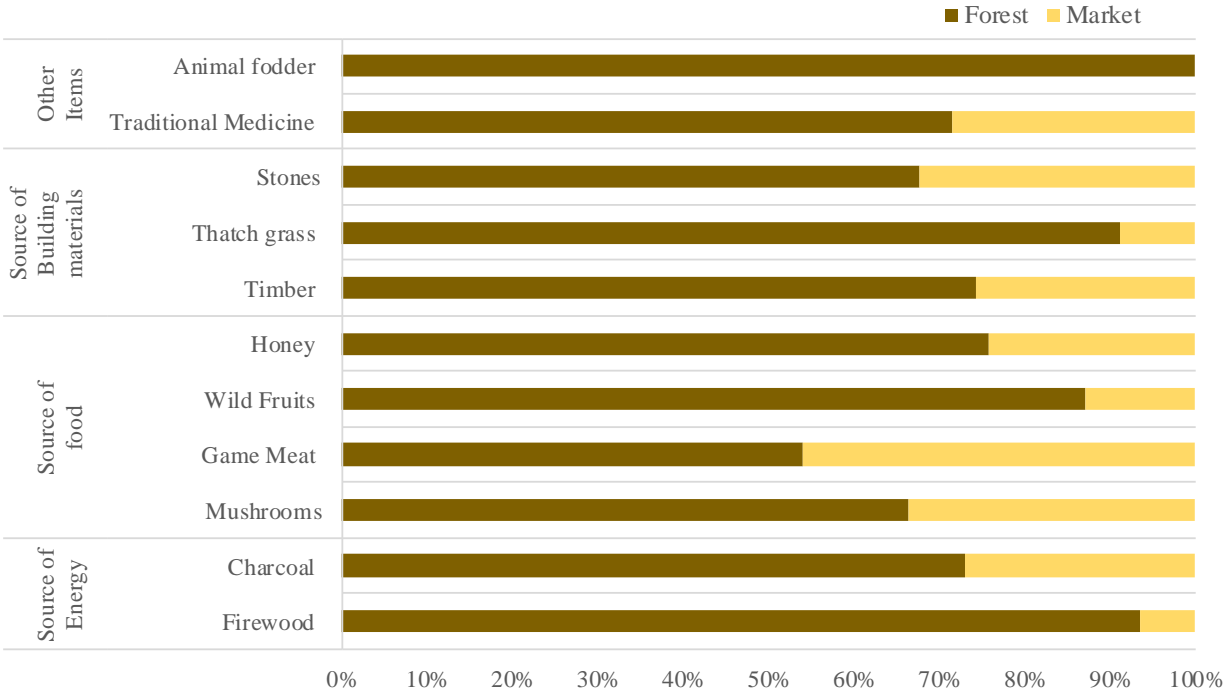
31. Clearing up land in Lovua to make room for human settlement sustained by agricultural activity will be faced with challenges; challenges from deforestation, hunting, mining, and finding the most suitable spots for cultivation. But there is also a conceptual challenge for program planners in both Government and UN institutions. The challenge of finding the "place" of forestry in meeting the needs of the host communities; and the place of forestry in the livelihoods of the guest communities. As it was already mentioned above, the forest provides important livelihood resources for both the host and the refugee population. The following paragraphs discuss results from the group interviews with the refugees where they described the relative importance of forest resources.

² Agency for International Development's (USAID) Office of Food for Peace (FFP) Country Specific Information: Democratic Republic of Congo (DRC) Multi-Year Development Food Assistance Projects

Forest based livelihoods

32. Diverse forest products are collected by households for home consumption and for and also for the market. Some households extract these resources directly from the forest while other have to purchase from the market – depending on the product and type of household. In Figure 7 below we grouped the forest resources in four categories – energy, food, building materials, and other items which include animal feed and traditional medicines. Most households reportedly obtained their firewood from the forest. Charcoal is also produced in the forest, but about one third of the households have to purchase the product from the market. These include household without an able-body male capable of performing the harsh tasks of burning coal. The forest is also an important source of such wild foods as mushrooms, game meat, wild fruits and leaf vegetables and honey. Game meat fresh from the forest is not accessible to all households as it requires hunting expertise, but a significant number of families reported accessing meat from the market. In that respect, the forest becomes an important source of income too.

Fig.7. Main forms of access to forest resources reported by the refugee population



33. In a social context where health facilities are dysfunctional, the practice of traditional medicine takes a center stage in community life. It is estimated that two thirds of the population reach out to the forest in search of some kind of medicine. This is used for both direct intake and some is sold in the markets. Very few households from the communities on either the side of the border keep livestock. The small herds that exist in the villages, goats, in particular, graze entirely from open grass and shrubs in the forest.

34. Despite the limitations of the data collection tools employed in this rapid assessment, we attempted to estimate the proportional contribution of forest resources to household income. As it can be seen from Figure 5 above, some forest resources reach the market, hence the contribution to household income. We estimated that forest income contributes between 10% and 15% of total income for households who depend mostly in

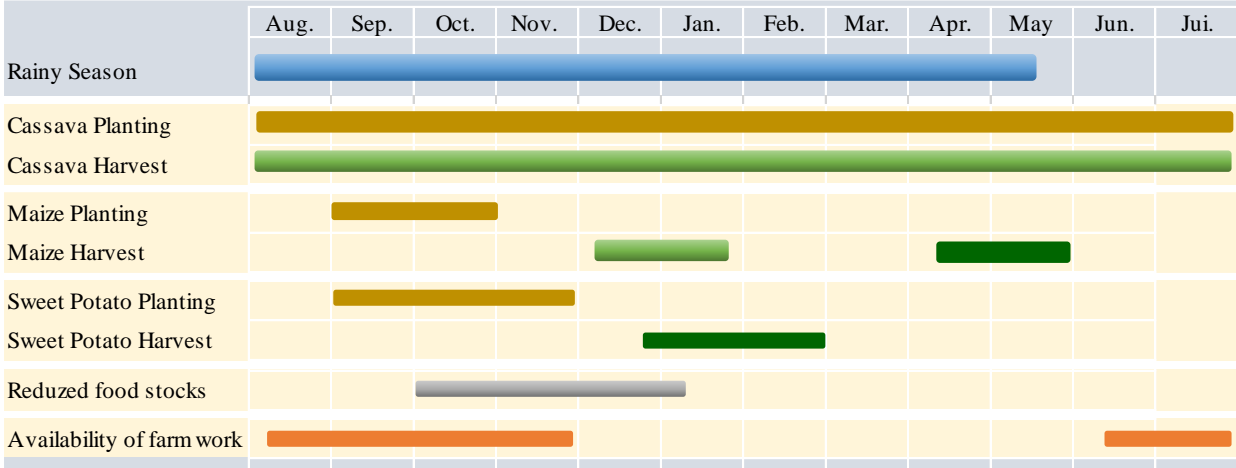
agriculture. Those who earn a substantial share of income trading manufactured goods are in fact net buyers of forest resources. The highest contribution to household forest income is charcoal, making about one third of all forest resource contributions. Game meat fetches high prices in the local market but it is not in constant supply as charcoal.

Key features of the local agricultural system³

35. The refugees are going to be settled in lowland areas covered mainly with savannah grasslands, containing broad leaf deciduous forests and bush scrubs. There is evergreen forest along which are the source of forest resources for the local communities. Agricultural production conditions are very favorable. Rainfall is reliable, averaging 1,200 to 1,600 mm per year. The soils are moderately fertile in the southern reaches and more fertile in the northern parts. Rain-fed small holder agriculture is the mainstay of the local economy.

36. Cassava is the predominant crop, grown year-round by all households. It is supplemented by maize, groundnuts, sweet potatoes, beans, and some vegetables, like tomatoes, onions, peppers, eggplant, and bananas on small scale in some pockets of the zone. Land preparation is the most demanding activity on local farms and both men and women from very poor and poor wealth groups are hired to carry out this work for better off and middle households. A summary of the region’s cropping calendar is provided in Figure 8.

Fig. 8. Timeline of key agricultural events



37. Agricultural activity in this area benefits from a long rainy season which begins in August and ends in May. The dry season, often reserved for vegetable crops, sets in at the end of May and runs through August. Crops are planted in a mixed system of intercropping and pure cropping, depending on the type of crops and stage of development. Maize,

³ A detailed description of the farming system can be found in “National Overview and Summary of the Results of the Household Economy Analysis Baseline – Angola” Report Prepared by: Tanya Boudreau April 2016. The Food Economy Group

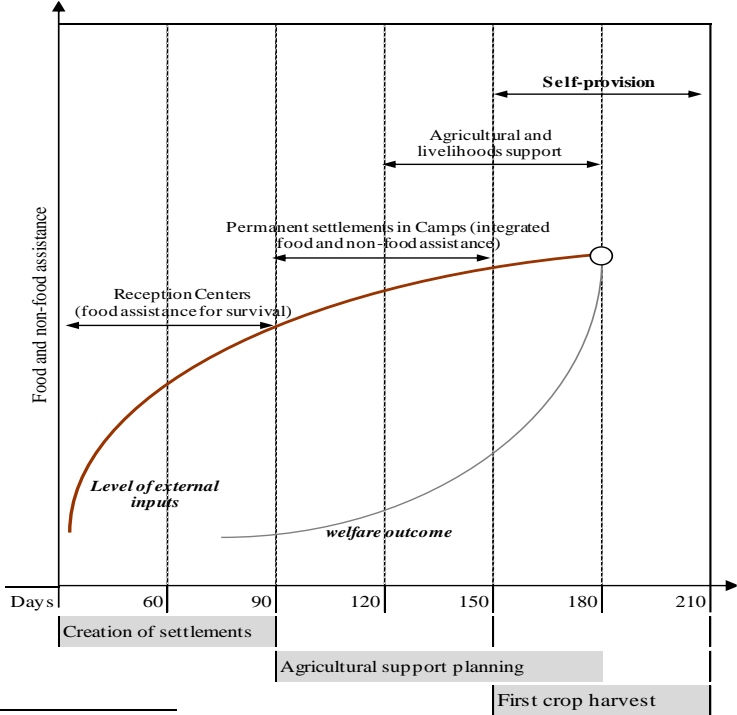
intercropped with groundnuts and beans is most widely practiced. Cassava is clearly the dominant crop providing both the roots as well as a supply of fresh leaves throughout the year. However, over the last 20 years or so, maize has become an important crop in the economics of the household due to an increase in market demand. Just like the Kasai region, land is widely available in Lovua, so when the fertility of a plot declines, households move on to new, untouched land.

Timeframe for building agricultural based livelihoods

38. The socioeconomic profile of the refugee population depicts that they will integrate into the local rural economy without major difficulties. It should be noted that these groups of people have not moved far away from their agroecological, cultural, and social environments. Therefore, it is expected that they will build agricultural based livelihoods and adapt to the current economic circumstances so much as the local communities are doing.

39. The refugee population that has reached the two Reception Centers to date is clearly not a group of people that breeds complete dependency on humanitarian aid. Despite the current vulnerability, this group will respond well to minimal measures of self-reliance if they are introduced within the proper timing. The diagram below helps to develop an objective timeline program planning. Although some form of food assistance may be an ascribed right of the refugee population, the level of resilience pictured in the focus group interviews deconstructs the view that they are simply helpless casualties of events beyond their control. They are ready to participate in the local rural economy and meet part of their welfare needs.

Fig.9 Conceptual timeframe for building agricultural based livelihoods⁴



⁴ Developed by the author in 2006 for land use development planning for the integration of refugees in Bengo province. (First adopted from John R. Rogge, 1994)

40. The development of conceptual timeframe above draws on the analysis of the quantitative data of the influx of refugees, the pace at which the conditions for permanent camp settlements are being created, and on the historical background of the integration of refugees and internally displaced persons in the northern part of Angola. Unlike the Central and Southern Angola, peoples of the Northern Region (extending beyond the official borders) have always demonstrated a strong capacity for achieving self-sufficiency with a minimum help, even in the face of adverse circumstances. It is against this historical background that we anticipate a quick integration of the refugee population into the local rural economy.

41. However, no matter how resilient the people may be, there is always a time lag between heavy efforts by the UN Agencies to put in place the necessary infrastructures for resettlement (including land clearance, path ways, and water points) until the resources begin to produce a positive welfare outcome. As suggested in the framework Figure 9, a 90-day spell is in fact a conservative estimate to have the site ready for adequate human settlement. And food assistance is required during this period. This timeline does not take into account the fact that country's general elections are right at the door step – an event that often ward off government institutions from honoring commitments on time.

42. The first 90 days from arrival are considered survival days for which food assistance is provided with little, if any, targeting criteria. This includes the lengthy stay in the reception centers and transitions to permanent settlement camps. Agricultural support planning may not begin until there is some level of settlement with a clearly defined “housing” pattern and physical demarcation of lots. The framework illustrates that the period of assistance to integrate or settle rural communities whose livelihoods are dependent on land resources, should be planned according to the cropping calendar of the main staples. Given that this is a short-term planning exercise, we used a maize cropping cycle at the expense of cassava which has a much longer growing period. On that note, it may take more than 150 days until the already settled refugee population experienced some crop harvest. Depending on the availability of water for irrigation, the harvest of horticultural crops may set in within the first four months from settlement.

43. Agricultural based livelihoods support programs should be implemented with a view to enabling the refugee population to augment their food income; access to adequate and appropriate food and nonfood items in a manner that ensures their survival, prevents erosion of assets, and upholds their dignity as “refugees”. This will be achieved by motivating the target population to engage in the production of food and cash crops. In a context where resources for humanitarian assistance are limited, it is in the best interest of the intervention to help the target population achieve a certain level self-provision.

44. In order to achieve a level of self-provision with the first six from of settlement, the program must make provisions for adequate access to land in the early stages of settlement. In addition, the physical implementation of the settlement plan must be conducted in a manner that causes the least possible disruption of the rural asset base. The latter suggests that the selection of the site for settlement is critical.

Site selection and implications for forest-based livelihoods

45. The new resettlement area is 17 km from Lova and about 100 km of Dundo. It is a virgin forest land, which needs to be thoroughly cleared. Apart from the time and financial resources required to turn the area into a safe human habitat, there are a few other factors that make the proposed site unviable. Primary concerns lay on potential environmental devastation with obvious implications for the local and incoming communities whose livelihoods depend largely on land and forest resources. Increased deforestation is likely to dry up the springs in both ends of the site, resulting in a reduction of water flowing in the streams. Preliminary observations indicate that the current level of surface water seems already insufficient to sustain human and production needs for an increased number of consumers.

46. It is understood that the selection of the current site was influenced by the availability of office/workshop infrastructures on the roadside, which were built by a road construction and rehabilitation company and handed over to the local ministration. These facilities will eventually be used to set up the camp's administration and to run other logistic operations. While it sounds like a valid economic rationale for selecting the current site, the long-term costs of reclaiming degraded forest land will be unmeasurable. On that note, this mission identified an alternative site for settlement not far away from Lovua. It is open grassland with a low shrub vegetation, which poses less environmental threats. The proximity to the river makes this area more appealing for implementing agricultural projects, in addition to easier access to markets. The communities will have access to the forest within a few walking kilometers.

Box 1. Land allocation per farm family

The refugees are currently in Reception-Centres in Kakanda and Musungue with prospects for relocating to Naginga, some 17 Km from the Lovua municipal administration office. The refugees should be entitled to plots of land large enough to sustain subsistence crop production for an average family of five.

Considering plots of 2,500 m² for each family, and a projected number of families in the order of 8,000 until the end of the year, an area of about of 2,000 hectares of land will be required to set up an agricultural settlement. The primary concern from an agricultural and ecological point of view is that the 2,000 ha in Naginga fall in forest land, unsuitable for extensive agricultural activity.

The mission comprising FAO and WFP team members visited the area on May 16, 2017. We interviewed Naginga village leaders and took a transact walk into the forest. We raised the following concerns:

- Land clearance with heavy machinery such as a bulldozer will result in devastating consequences to soil fertility;
- Domestic and economic activity of 8,000 families (+/-50,000 people) for a prolonged period of time will lead to irreversible loss of natural life and eventual destruction of the ecosystem.

There is a common understanding among team members of the economic and environmental implications of setting up a camp in Naginga – it is indisputably not recommended. Proposals for new sites are set forth at the end of the document. They are all located close to a source of water. In addition, we recommend settling the refugees in 3-4 camps instead of one mega settlement. Smaller camps will enable better health and environmental management.

Potential for increasing production of food security crops by refugees

47. The integration of the refugee population into the local agricultural economy, should be done through projects that include an assistance package for the nearby communities too. During the mission, discussions were held with leaders from one the communities who outlined the key factors hampering agricultural production in the area. Agricultural interventions in the area will attempted to address some of the constraints while promoting projects for the refugee population. It is highly likely that these two courses of action will complement each other, and enhance to overall output in the area. The following paragraphs provide a brief description of crops which are the backbone of the local farming system and also common to the refugee population. The best approach is to tackle the farming system a whole and have the refugee population (who have already demonstrated to be skillful farmers) integrated in local production schemes.

48. ***Cassava crop production:*** cassava is one of the core crop in the rural areas of Lunda Norte, both through its suitability throughout the province and because it is deeply rooted in the local cultural and eating habits. During the interviews farmers indicated the willingness to work with local varieties, with preference for short-cycle. one advantage of cassava is that it also produces cassava leaves, which are the major vegetable in the entire northern area and an important source of proteins. A good cassava crop in the settlement area would yield close to 10 t of fresh roots/ha, which would complement food availability of every four family with 1.6 t of cassava flour. However, depending on the availability of land, small groups of female farmers can be encouraged to grow cassava specifically for leaf harvest with a view of improving the local diet.

49. ***Maize crop production:*** together with cassava, maize has become an important staple in the northern region. In addition, the is widely grown in the entire Kasai region too. In the northern region, with abundant rainfall, maize has many food security advantages over cassavas. Its short growing cycle (90 days) will enable the refugee population to bridge consumption gap more effectively. A good crop in this region may yield as much as 1.5 t/ha providing 1.3 t of maize flour per every four-refugee family. In addition, maize flour contains more protein and fat and is thus nutritionally better than cassava.

50. ***Production of groundnuts:*** it is a popular source of food throughout the region, extending beyond the northern borders to Kasai. It is an important food security crop in the sense that it can be consumed as rich roasted snack, crushed and used for the groundnut oil, and it is also an indispensable condiment in the preparation of various forms of curry. Rainfall together with long stretches of sandy soils in Lovou provide suitable conditions to grow the crop. Yields in the region vary from about 400 kg/ha to 800kg/ha depending on the level of inputs. Groundnuts are an important source of nutrition and it is a a crop with high economic value which can fetch a high price on local markets.

51. ***Production of sweet potatoes:*** part of the traditional diet, sweet potato production takes 120-150 days, depending on selected short varieties. Reproduction is made with tales, making production easy and cheap. It is cultivated in rainy and dry time, as irrigation needs are very slow. Plant leaves are traditionally eaten, representing a mineral salts source production.

52. ***Enhance production of horticulture and fruit crops:*** in addition to the aforementioned crops, it was also possible to identify a number of other vegetable and fruit crops with high potential to be adapted by the target group. The marketing of these crops follows a high seasonal demand and small-scale farmers in this region benefit from higher comparative advantage. Crops such as amaranthus, cabbage, tomatoes, and red peppers produced in the dry season within an irrigated system have the potential to bridge the current supply gap as they are all supplied from other provinces.

53. ***Raising of poultry and eggs production and pilot production of worm for animal consumption,*** as eggs represent a highly nutritive product and poultry is easy income generation activity, normally managed by women. The worm pilot production will substitute the feeding ration, that is normally made by maize and millet (taken off from family food basket)

54. ***Raising of fish.*** As the settlement area is close to a river, fishing and fish raising activities may also be considered. The tilapia reproductive cycle takes 5-6 months, representing a food and income generation activity, in line with local traditions. Tilapia has two or more productive cycles, depending on selected raising techniques.

55. ***Pilot production of worms*** for human consumption may also be considered, as some varieties of worms are traditionally eaten and procured by ethnic groups of the area. Worm could represent a quick and cheap source of proteins, produced with harvest's residues in a very limited area.

Conclusions and Recommendations

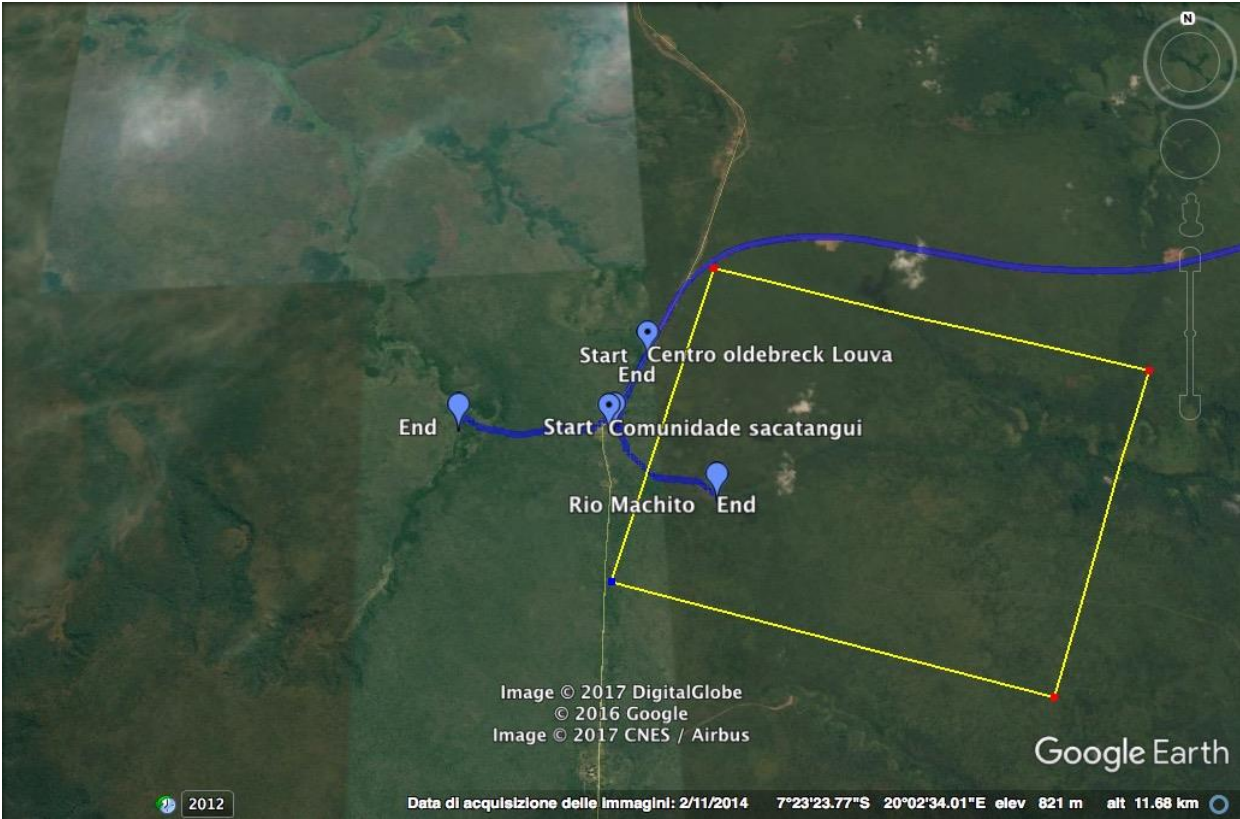
56. The deterioration of both political and economic situation in the entire Kasai region will lead to a continued influx of asset-poor and already food insecure population into the Angolan borders. Therefore, current and future food insecurity scenarios suggest scaling-up the more traditional forms of food assistance (dry rations) for a minimum period of three months. A comprehensive food security assessment will be required when the refugee population is settled in proper camps, and a settlement pattern is established in the area. The assessment will inform food security and agricultural based livelihoods enhancement program planning, and enable WFP and FAO to fine-tune response options for the various sub-groups of the refugee population.

57. The forthcoming food security assessments should include the communities hosting refugees at the moment. It is known that the vast majority of the refugees reside with communities outside the reception camps. The mission did not visit such hosting communities, so we could not assert whether the off-camp refugees have developed means of meeting their food needs. However, the fact that the off-camp report to the centers to claim their food ration, may suggest that they remain in a status of food insecurity. But staying off-camp poses a further challenge for food and nonfood assistance planning. At the end of these assessment mission, no one could tell whether all refugees will accept relocation to the new settlement site. The level of uncertainty is higher among those who are settling in host communities, many without registration cards. When the issue of relocation was raised in discussions with those in the centers, it provoked mixed reactions, with some expressing resistance to move.

58. Cassava meal flour should be introduced in the food ration basket if WFP opts for a cash based intervention. Angola is self-sufficient in cassava, with potential to increase beyond its current level of production – underestimated at about 4.5 million tons per year. The market in Dundo is well supplied with cassava meal four, the bulk of it coming from neighboring provinces like Malanje which has a larger pool of market oriented farmers.

59. This assessment reveals the important role of forest resources in the livelihoods of the target population. The contribution of forest resources to household income is hard to quantify. This is particularly critical for households that rely mostly on agricultural production and are not engaged in trade of manufactured goods. With the increasing population in Lovua and surrounding areas, the demand on forest resources are likely to rise and this will exert pressure on local communities to manger their sources more sustainably. Clearly that chopping off trees and destruction of a natural habitat should be a measure of last resort only.

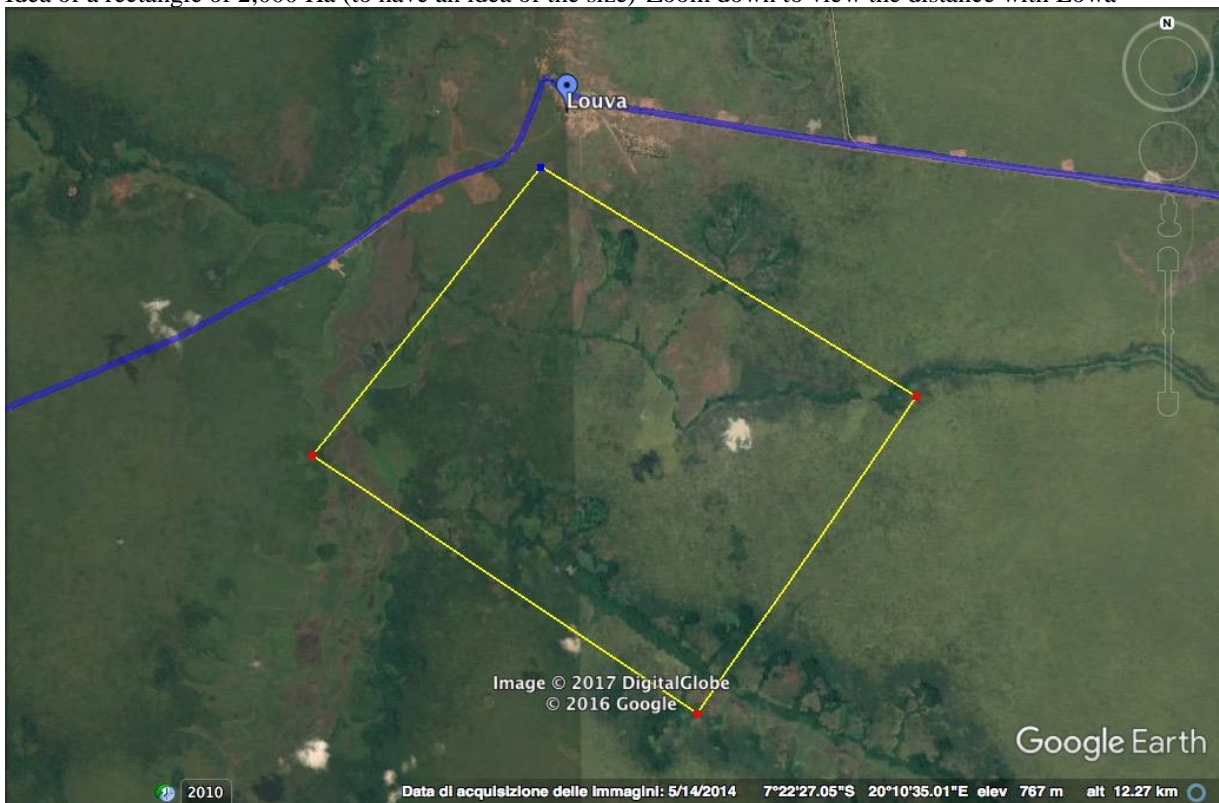
60. Distribute refugees in 3-4 camp sites along the Dundo-Luvua road and in grassland areas is recommended, making agricultural interventions manageable, cheapest and quicker, with less environmental impact of fertility, biodiversity and water pollution and, at the same time, promoting a better integration between ethnic groups and between refugees and hosting communities. Below are map sketches of possible areas of smaller camp sites with GPS references.



Idea of a rectangle of 2,000 Ha (to have an idea of the Size)



Idea of a rectangle of 2,000 Ha (to have an idea of the size)-Zoom down to view the distance with Louva



Possible idea proposed by the Area team with 2,000 Ha (to have an idea of the size)