

## **APPENDIX B**

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### Excerpts From Survey Of Pygmy Populations

#### III. CONCLUSIONS

The "project area" as discussed below is defined as a strip of land 10 km wide between Lolodorf and Kribi, centered on the road from Lolodorf to Kribi via Bipindi.

1. Determination of the numbers of pygmies present in the project area:

52 permanent settlements containing 1343 Bakola people.

2. Identification and plotting of the location of Pygmy villages and settlements in the project area:

Map 3 shows the approximate locations of Pygmy permanent settlements (villages) in the project area recorded during this survey. Locations have been recorded using GPS equipment.

3. Identification and plotting of the location of "Bantu" villages and settlements in the project area:

The non-Pygmy villages and their boundaries are plotted on map 3.

4. Identification and plotting of the location and usage of temporary Pygmy hunting encampments:

Temporary hunting camps of each Pygmy permanent settlement (village) were identified by questioning. Approximate locations are plotted on map 3.

5. Assess and describe the economic status of the Pygmy population of the project area:

Bakola Pygmies temporarily move to hunting camps for hunting and gathering; no Kola family is exclusively hunter-gatherer: all of them rely upon agriculture to some extent for their carbohydrate supply. Diet is good even if meat seems scarce during the present field survey.

6. Assess and describe the health status of the Pygmy population of the project area:

Health status and life expectancy among the Bakola are poor. They suffer from many transmissible diseases (mainly bacteria like salmonellas and treponemas, viruses like measles, hepatitis A, B, C, D and others, and many protozoal parasites: malaria, intestinal worms, etc.). Water supply is bad, and causes a lot of diarrhea, the first cause of mortality among young children. Diet is fairly good but such a burden of diseases impairs its effect.

## IV. Potential impacts of the project

### Short-term effects

During construction, the project has the potential to impact the pygmy population as follows:

1. 6 Bakola permanent settlements have been mapped as lying on or near the proposed 30-meter wide pipeline route *i.e.* some 110 persons, and 22 houses. The locations will have to be confirmed during pipeline survey work and the pipeline should be moved to avoid these permanent settlements. Residents of these permanent settlements will have to be consulted during the survey.
2. A further 5 permanent settlements are located less than 1000 m (600 to 800) from the pipeline route, with 5 others at less than 2000 m and 9 others at less than 3000 m from the pipeline route. Likewise, the locations of these permanent settlements will have to be confirmed during the pipeline survey work and the pipeline should be moved to avoid these permanent settlements. Residents will have to be consulted during the survey.
3. The comings and goings of workers, trucks and other construction equipment will have the effect of frightening and disturbing wildlife, thus decreasing the catches of hunting activities. This effect should be temporary during the 30 to 60 day construction period, but has to be monitored. Bush meat consumption and game abundance in the construction area will have to be investigated during the preliminary consultation period.
4. The presence of numerous construction workers for periods of weeks or months, will noticeably increase the local population, with the following potential effects:
  - 4.1 Hunting pressures may increase, first by the Bakola Pygmies attempting to meet any bushmeat demand generated by the construction workers, and second by some workers who will themselves trap for their own use during their stay in the region. (It should be kept in mind that wild meat is the major source of protein used by all populations in Southern Cameroon). The project should provide food to, at least, all of its non local workers. Hunting and fishing by non local workers should be prohibited.
  - 4.2 The workers will shop in the Bantu villages, and may compete with the Bakola for the supply of starchy food - unfavorably for the Bakola who cannot afford the same prices. Conversely, the workers will give some Bakola the opportunity to sell their products. The effect on prices will have to be closely monitored during the construction period. The effects can be limited by providing food to the workers.

- 4.3 Inside the rain forest, there are many health hazards, mainly with parasitic and infectious diseases. Workers who will come from other zones, like savanna, and who have no immunity against many of the encountered viruses, are specially at risk. Workers coming from drier areas can in turn bring some diseases, like bilharziasis, which is presently virtually absent in the region. Health status of all populations (Pygmies and Bantus) will have to be monitored during and after the construction period. A complete vaccination program, which would prevent measles, could be financed by Exxon for the project area and carried out by the Government of Cameroon.
- 4.4 The forest environment, as a rich biological reserve, is also favorable to the transmission of numerous infectious diseases. An outbreak of very dangerous epidemics, like Ebola, cannot be excluded, as such an outbreak happened a few months ago in Makokou, Northern Gabon, 350 km south of Lolodorf ; the source was a dead chimpanzee, an animal currently hunted in the Bipindi-Lolodorf, by Pygmies as well as Bantu people.
- 4.5 Conversely, while most of the human population of the area does not live deep in the forest, the grouping of villages along the road is more favorable to epidemic outbreaks, like measles, which is the third cause of child mortality in the area. Therefore, the medical monitoring which will be set up will have both to prevent the workers from getting diseases from the unhealthy forest environment, but also to protect the local population from infections brought from outside.
- 4.6 This last aspect concerns namely STD, as prostitution is expected to develop along the route of the working team. Female sex workers coming from Douala and even Yaoundé, or smaller cities, use to come around the plantations and industries around Kribi and Campo, twice a month, when salaries are paid to workers. The presence of a large and presumed wealthy project will attract a lot of prostitutes; their impact will also involve surrounding villagers. The prevention against AIDS and others STD designed by the health program has to be aware of that issue.

### ***Long term effects***

1. Any Bakola permanent settlements that might move because of the project (point 1) will compete with other villages for their new agricultural territories. The project shall avoid moving them.

2. At present in the area, animal resources are not renewed sufficiently fast to cope with the nutritional needs of the larger population centers that are the town of Kribi and the great agro-industrial complexes of the region (Hévécam for rubber, Socapalm for palmoil). Our studies show that although the diet of the populations that live in the forest environment is on the whole satisfactory, it are those societies that are changing (Pygmies towards sedentarization) who manifest insufficiencies on a nutritional level. Should it be permanent employment, the influx of workers (point 3 and 4) could unbalance on the long term the wild species survival, and specially some which are officially protected.
3. The effect of any temporary modifications in the trade and exchange system between Bakola and villagers (point 5) is not known. Some Bakola permanent settlements could settle closer to the road side, looking for more trading opportunities, while others may move closer to their hunting territories, thus increasing their independence from the Bantu villages. It is not possible to predict this beforehand.
4. It is important to monitor in the remaining Pygmy settlements (about 50 to 80 between Eseka, Edea, Campo and Ma'an, map 2) in the region if any population movements take place in relation to the project. These Pygmy populations can be used in a comparison to the Pygmies in the pipeline area. An extra consultation is needed for this. This could help to evaluate the impact of the pipeline on living conditions of the Pygmies.

## V. Recommendations

1. Consideration should be given to locating project facilities to avoid direct impacts on Pygmy settlements. Where project facilities are located in the vicinity of Pygmy settlements, those facilities should ideally be at least 2000 m distant from the settlements in order to minimize secondary impacts. Direct impacts of the project will be negligible when the distance is at least 2,000 m, impacts will be limited to the construction period if the distance is between 500 and 2,000 m and it must be avoided to come closer than 500 m to a Pygmy permanent settlement. In case of Pygmies that live in Bantu villages or next to the main road, and thus in a disturbed environment, the limit of 500 m can be less.
2. Fair and appropriate compensation for impacts on any affected permanent settlements is required. Though not studied in this report, impacts on Bantu villagers is expected to be at least as important as on Pygmies. Compensation should involve community projects: schools, health posts, church, football field.

3. The project should ban hunting and fishing by non local workers. The supply of produce from local markets to workers should be organized (mainly beef and chicken meat), to limit the demand for game.
4. There is no easy way of monitoring meat consumption and hunting. Monitoring of meat consumption before and after the project, can only be done through *direct observation* in a sample of permanent settlements *within* and *outside* the project area, before and after the construction. Questionnaires are unreliable to measure meat consumption in Pygmies. This will involve the presence of a scholar or PhD student for 6 months/2 years in the area.
5. Regular nutritional anthropometry (monitoring of growth and nutritional status, before and after the project period), *within* and *outside* the area can pinpoint food provision problems when they become serious. However, this method might be more cost effective than the monitoring of hunting and meat consumption.
6. The introduction of new techniques of resource management (improved game protection, improved seeds and plants for damaged crops, agroforestry) would help the existing rural populations to better exploit forest resources. Compensation could include the distribution of improved planting material for damaged crops.
7. Consultation will be necessary before the commencement of project construction in order to fully assess the impact of the pipeline on the Pygmy community as a whole, as the present report is based upon the rapid appraisal of only the area adjacent to the Kribi-Lolodorf road. The location of fields and gardens has not been assessed in this study, but their locations in respect of the pipeline will have to be known before the project starts, in order to fully inform the local population. We suggest to make a first visit of the Bantu villages and Pygmy settlements before the centerline survey starts, so that the whole population can be fully informed of the development of the work. A second visit should be done as soon as the route of the pipeline will be materialized on the ground, in order to be sure that it is acceptable by the population without any important change.
8. Specific techniques for consultation should be developed to explain to both the Bakola and the villagers the consequences of the project on their way of life.
9. Excavations for the pipeline can be expected to lead to the discovery of many Pygmy sociocultural and archaeological sites. Protocols to be followed when such sites are intersected should be developed.