1 Methodology used to calculate the value of Temporary Crops

In order to evaluate the amount of compensation to be provided to PAPs as a result of land take due to the project. The following methodology was utilised for Temporary crops.

1.1 Temporary Crops

Temporary crops include Leguminous cereal and garden crops such as Maize, Soya, Cassava, potato, and sweet potato which are typically sown and harvested during the same agricultural year, sometimes more than once. These constituted the main primary crops[1] produced in the project area.

Assumptions:

As leguminous, cereal and garden crops are typically both sown and harvested during the same agricultural year, sometimes more than once and due to the density of planting regimes. These crops are extremely difficult to count on a plant-by-plant basis, making compensation by plant extremely difficult.

Due to these two factors the following assumptions have been made:

- Given that the reallocation time, upon the publication of an expropriation decree (*Article 3 Law No. 85/009 of 4/07/1985*) is 6 months, and the different number of farming seasons for the different crops that occur in the year. It is practically impossible to time the reallocation with the commencement of one season for all the different crops. As such, the value of the compensation will be calculated assuming a one-year impact on the household crop production.
- Due to the density of planting regimes, average crop densities per hectare and their production potential have been established by the Department of Agriculture in Cameroon and by Voice of the Farmer Publications on yields for crops. This information has been utilised to establish the compensation value for these types of crops per hectare taken for the project.

Methodology:

The value of temporary crop production per household was calculated using the following methodology:

[1] Primary crops are those, which come directly from the land and without having undergone any real processing, apart from cleaning. They maintain all the biological qualities they had when they were still on the plants.
(FAO: http://www.fao.org/es/ess/rmcrops.asp)

1. The area of land utilised for each crop produced (AC) per household was surveyed and recorded – this was undertaken by the compensation commission during the first census

2. The average yield per hectare (Y) for each crop was established through liaison with the Department of Agriculture and publications from the voice of the Farmer[2]

3. The potential production of a particular crop for a particular household was established by multiplying the area utilised for that crop (AC) by the average yeild of the same crop per hectare (Y).

$$\text{Crop Production per household (CP)}_{(Z)} = AC_{(Z)} \times Y_{(Z)}$$

4. The price of the crop per Kg/g/ton/cup/bag/unit was established through liaison with the Department of Agriculture, review of publications from the Voice of the Farmer Magazine and through consultation with marketeers in Kribi. The price of the crop per Kg/g/ton/cup/bag/unit was then multiplied by the total production expected from that particular crop by that household (CP) to get the value of the crop for that household (VP).

$$\textbf{Value of Crop (VP)}_{(Z)} = \textbf{CP}_{(Z)} \textbf{ x } \textbf{P}_{(Z)}$$

5. Depending on the number of seasons (S) that might occur for each type of crop in one year. The number of seasons per year were multiplied by the value of the production to give Total Value of Production for theCrop(TVP):

$$\textbf{TVP}_{(Z)} = \textbf{VP}_{(Z)} \textbf{ x } \textbf{S}_{(Z)}$$

6. Through liason with the Department of Agriculture and the Voice of the Farmer, the quantity (QS) and cost of seeds (CS) required per hectare for each crop was defined. Therefore per hectare lost to the project the follwoing calculation was used and the result added onto the Total Value of Production based on the assumption that PAPs will require new seed to plant in ressettled areas.

$$\text{Planting Cost (PC)}_{(Z)} = (QS_{(Z)} \times CS_{(Z)}) \times \text{No of hectares}(Ha_{(Z)} \times \text{Seaons in one year } (S)_{(Z)}$$

7. Therefore the Grand Total Value of Compensation per hectare (GTVC) is equivalent to the Total value of lost Production for 1 year per hectare plus the Planting Cost for one year per hectare.

$$\textbf{GTVC} = \textbf{TVP} + \textbf{PC}_{)}$$

[2] *La Voix du Paysan – Recueil de Fisches Techniques Pour L'Entrepreneuer Rural Tome 2 Edition 2001*

8. Given that one household might have different crops (in the same or different plots), the grand total value of the crop production per household is a simple addition of all the GTVC's for each crop.:

$$\mathbf{GTVP_{(Z)} + GTVP_{(I)} + GTVP_{(J)} + ... = GTVP_{(Z+I+J+...)}}$$

1.2 Methodology used to calculate the value of Permanent Crops

Permanent Crops

Permanent crops are sown or planted once and will not be replanted after each annual harvest. The main permanent crops in the project area were fruit trees and medicinal plants. Main fruit trees include citrus trees (orange/lemon), mango, and guava trees. The majority of medicinal trees were not identified in terms of their common name.

Assumptions:

Due to the lack of information regarding the actual age of the existing trees, and given the fact that mature trees are considered slightly more valuable by Decree No 2003/418 of the 25th February 2003, the same logic was applied in the calculations. As such, young trees were considered as being in their first year of production (as these produce considerably less in the first year of production then when they are in full production[3]), whilst adult trees were considered to be in their second year of production.

Methodology:

With regards to the calculations used to obtain the current value of permanent crops, information was obtained from the compensation commission census, department of agriculture in South Province and local markets.

The compensation commission census provided the following information per household:

- Type of tree (Local name)
- Maturity of tree (Adult or young)
- Condition of tree (Wild, local, improved)
- Quantity of tree (number of individual trees)

The department of agriculture in the South Province provided the following general information for both the South and Littoral Province and for each type of tree:

- Number of growth years until it reaches production
- Number of production years

[3] According to the department of Agriculture in the South Province

- Cost of a small plant (including the cost of labour, fertilisers, water, to reach the size of a small plant)
- Annual Yield per tree
- Average market price per Kg/g/ton/cup/bag/unit

In order to determine the value of the permanent crops, the following methodology was used:

1. Given that permanent crops take longer to achieve the production stage, these "waiting years" must be taken into account as lost production, assuming that if the tree was not destroyed, it would be producing for those years. The **waiting years for tree A = $W_{(A)}$**

2. Given the difference in tree maturity (young or adult), one or two years must be added to the waiting years as such:

    - **Young Tree A: Young years (yy)= $W_{(A)}$+ 1**
    - **Adult Tree A: Adult years (ay) = $W_{(A)}$+ 2**

3. Once the overall number of years have been obtained, the total yield (TY) for tree A must be calculated:

$$\textbf{Total Yield } (TY_{(A)}) = \textbf{Average Yield}_{(A)} \times yy_{(A)} \textbf{ or } ay_{(A)}$$

Note that even though the first year of production has a lower yield, it was assumed for the calculation that it had the same yield as the remaining years. As such, the only difference between a young and an adult tree is an additional production year.

4. The production cost ($PC_{(A)}$) of tree A is obtained by multiplying the $TY_{(A)}$ with the average market price ($P_{(A)}$)

$$PC_{(A)} = TY_{(A)} \times P_{(A)}$$

5. In addition, to the PC, the household should also receive a similar quantity of plant trees (QP) in saplings to get the Grand Total Production Cost (GTPC)

$$GTPC_{(A)} = PC_{(A)} + QP_{(A)}$$

6. Given that one household might have different trees (in the same or different plots), the grand total production cost (GTPC) per household is:

$$GTPC_{(A)} + GTPC_{(B)} + GTPC_{(C)} + \ldots = GTPC_{(A+B+C+\ldots)}$$

1.3 Further Assumptions for both Temporary and Permanent Crops:

Due to the fact that some temporary and permanent crops are indigenous trees and crops, there is very limited information regarding average production yields, market prices, years of production, etc. As such, for the crops that information is lacking, the consultants :

1. put the crop into their respective category, e.g. cereals, legumes, tubercules, medicinal plants, fruit trees, etc..
2. Obtained the average percent increase or decrease per category, when compared to the 2003 decree prices per crop
3. Applied the same average increase/decrease to the average 2003 decree prices for the crop

2 Compensation Methodology for Buildings

Building compensation values were determined in line with Decree No2006/3023/PM of December 29,2006 (Fixing the modes of Administrative Evaluation of The buildings in Fiscal Matters) or through negotiated agreements between the CEC and PAPs.

Principles of Decree No 2006/3023

The main principle of Decree No 2006/3023 is that the determination of value of buildings is undertaken by taking into account the land, construction, and rental markets, of the infrastructures as well as the urban services level, which the building benefits from due to its geographical zone.

The Decree defines ten geographical Zones listed below:

- Zone 1: Douala and Yaoundé very smart districts;
- Zone 2: Douala and Yaoundé smart districts;
- Zone 3: Douala and Yaoundé other city centre districts;
- Zone 4: Other districts on the close periphery of Douala and Yaoundé;
- Zone 5: Other districts on the distant periphery of Douala and Yaoundé;
- Zone 6: City centre districts of the provincial big cities;
- Zone 7: Districts on the periphery of the provincial big cities;
- Zone 8: City centre districts of the small and medium provincial cities;
- Zone 9: Districts on the periphery of the provincial medium and small cities;
- Zone 10: Inhabitant rural zones.

The buildings found in the RoW are located in Zones 9 and 10 and are subject to the provisions of Section 4 of Decree 2006/3023.

Under Article 8 (Decree 2006/3023) For the determination of the administrative monetary values of imposition of the constructed buildings, the criteria and parameters evaluation are as follows:

- Type of construction;
- Construction values per type;
- Balancing coefficients of the constructions value per construction type;

A - Types of construction

The buildings are classified in five (5) types as follows, according to their architecture, of the quality of the material used and of the level of the completion observed:

Type 1: High Standing - Constructed building on level, villa or apartment built of high standards with definitive completion materials.

Type 2: Standing - Constructed building on level, villa or apartment in built of comfortable definitive completion materials.

Type 3: Standard - Villa or apartment built of definitive standard completion materials.

Type 4: Semi Hard - Constructions built of semi-hard middle completion materials.

Type 5: Temporary - Construction built of temporary completion materials.

B. Values for each type of Construction

The average price of the square meter built for each constructional type has been determined through the observation of market values as follows:

- type 1 more than 145 000 F/m2
- type 2 from 90 001 to 145 000 F/m2
- type 3 from 45 001 to 90 000 F/m2
- type 4 from 20 001 to 45 000 F/m2
- type 5 from 7000 to 20 000 F/m2

The gross administrative monetary value of the constructions is calculated by applying to the built surface, the price of the square meter according to the constructional type.

The majority of Buildings within the RoW are defined as type 3, 4 or 5 and where no agreed value has been determined between the CEC and PAPs, these values have been utilised.

C – The pondering coefficients of the construction value

Under Section C of the Decree the gross administrative monetary value calculated as mentioned above, can be reduced by the following coefficients, to obtain the administrative monetary value of imposition for the constructed buildings:

A) The depreciation coefficient for absence of connection to the water adduction networks = 0,10
B) The depreciation coefficient for absence of connection to the electric network = 0,05
C) The depreciation coefficient for absence of the telephone network = 0, 02
D) The depreciation coefficient for accessibility = Good: 0, Average: 0, 1 and Bad: 0, 2
E) The depreciation coefficient for state of appearance = Good: 0,Average: 0, 3 and Bad: 0, 5

In summary the calculation for Buildings Compensation is as follows

Area of Building (width x length) m^2 X Type of Construction (Type 1 –5) X (1-(Coefficient A+B+C+D+E)) = Total Compensation Value

3 Budget Estimate for the External Monitoring and Evaluation

Activity	Unit	Unit Price (USD)	Quantity	Total (USD)	Total (CFCA)
Evaluator's Fees	Day	1,000.00	120	120,000.00	58,466,520.00
Travel	Trip	1,900.00	6	11,400.00	5,554,319.40
Per diems	Day	200.00	60	12,000.00	5,846,652.00
Miscellaneous (Communications/printing/photocopying)	Trip	1,000.00	6	6,000.00	2,923,326.00
Grand Total				**149,400.00**	**72,790,817.40**