



<FOOD & BIO-ENERGY>

THE MOTOR OF SUSTAINABLE RURAL DEVELOPMENT IN THE CANTON DAWLOTU TUTU

-- a hybrid version of the Jatropha System for the development at the base of our community and economy --

SUMMARY

of the adopted Scenario for the agricultural production of feedstock for local agro-industries and for organized, collective wholesale

realistic but prudent production objectives

based on local observations and experiments during the last 18 months

and on professional literature – mostly published by the Dutch FACT Foundation

Lomé / Avégamé, 30 juin 2011

Document 11-696/A

SUMMARY OF THE TOTALS

presented in the Tables of the adopted production scenario, called <Scénario Adopté> (document 11-694/A)

(The yellow indicates the duration of the proposed <PROJECT> phase of Tomoka: the years 2012-2015 -- Pink indicates the moment that *all* harvests of *all* producer groups have reached their maximum, stable levels for the years to come afterwards)

Update : 30 June 2011

PRODUCTION TOTALS OF THE DEVELOPMENT AT THE BASE OF OUR LOCAL ECONOMY												
Nr	TABLE -- DETAILS	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
PRODUCTION TARGETS OF INTERVENTION PROGRAM 1 : AGRICULTURE												
1	START & EXTENSIONS OF THE LAND TAKEN INTO CULTIVATION											
A	Unused deforested land taken into cultivation – ha	5	5	70	250	600	1.050	1.050	1.050	1.050	1.050	1.050
B	New land planted with Jatropha : 60% - ha	3	3	42	150	360	630	630	630	630	630	630
C	New land planted with food crops: 40% - ha	2	2	28	100	240	420	420	420	420	420	420
2-A	INSERTIONS OF SMALL HOLDERS – Jatropha & food crops – 5 ha per family -- 180 families (mostly: regularization of undocumented settlers coming from the North)											
A	Unused deforested land taken into cultivation – ha			50	200	500	900	900	900	900	900	900
B	New land planted with Jatropha : 60% - ha			30	120	300	540	540	540	540	540	540
C	New land planted with food crops: 40% - ha			20	80	200	360	360	360	360	360	360
2-B	EXTENSIONS OF THE AREA PLANTED BY GUKAM'S MODEL PLANTATION – Jatropha & food crops											
A	Unused deforested land taken into cultivation – ha	5	5	20	50	100	150	150	150	150	150	150
B	New land planted with Jatropha : 60% - ha	3	3	12	30	60	90	90	90	90	90	90
C	New land planted with food crops: 40% - ha	2	2	8	20	40	60	60	60	60	60	60
D	Manœuvre : nombre de travailleurs à 100%	3	4	6	10	16	20	20	20	20	20	20
3	JATROPHA CROPS BY SMALL HOLDERS – 180 families – mostly migrants (from the North)											
A	Kilos par an			5.070	30.390	114.650	337.290	772.740	1.496.850	2.413.800	3.184.500	3.572.100
B	Revenue at F CFA70/kg (average price level 2009)			354.900	2.127.300	8.025.500	23.610.300	54.091.800	104.779.500	168.966.000	222.915.000	250.047.000
C	Number of families active in this programme			10	40	100	180	180	180	180	180	180
D	Average income from Jatropha per family / year			35.490	53.182	80.255	131.168	300.510	582.108	938.700	1.238.417	1.389.150
4	JATROPHA CROPS BY GUKAM – on its Pilot Plantation and its Model Plantation											
A	Kilos per year		380	2.659	10.487	32.493	81.630	172.575	306.930	438.450	546.900	595.350
B	Revenue at F CFA 70/kg (price level 2009)		26.600	186.130	734.090	2.274.510	5.714.100	12.080.250	21.485.100	30.691.500	38.283.000	41.674.500
5-A	MAIZE CROPS BY SMALL HOLDERS DURING ONE SEASON – 180 families – mostly migrants – 2ha/family											
A	Kilos – produced with bio-fertilizer from the 4th production year onwards (of each cohort of participants)			22.000	88.000	220.000	411.000	456.000	546.000	666.000	666.000	666.000
B	Revenue at F CFA 180/kg (average price 2009) -2ha/family			3.960.000	15.840.000	39.600.000	73.980.000	82.080.000	98.280.000	119.880.000	119.880.000	119.880.000
C	Average income from maize perfamily: 2ha/season			396.000	396.000	396.000	411.000	456.000	546.000	666.000	666.000	666.000
6-A	RED BEANS BY SMALLHOLDERS DURING ONE SEASON – 180 families – mostly migrants- 2ha/family											
A	Kilos – with bio-fertilizer from the 4th year onwards			48.000	192.000	480.000	872.000	896.000	944.000	1.008.000	1.008.000	1.008.000
B	Revenue at F CFA 360/kg (average price 2009) -2ha/family			17.280.000	69.120.000	172.800.000	313.920.000	322.560.000	339.840.000	362.880.000	362.880.000	362.880.000
C	Number of families active in this programme			10	40	100	180	180	180	180	180	180
D	Average income per family from beans/2ha/season			1.728.000	1.728.000	1.728.000	1.744.000	1.792.000	1.888.000	2.016.000	2.016.000	2.016.000

PRODUCTION TOTALS OF THE DEVELOPMENT AT THE BASE OF OUR LOCAL ECONOMY												
Nr	TABLE-- DÉTAILS	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
PRODUCTION TARGETS OF INTERVENTION PROGRAM 1 : AGRICULTURE												
7-A MAIZE CROPS BY GUKAM DURING ONE SEASON – on the total surface which has been reserved for food production												
A	Kilos – produced with bio-fertilizer from the 4th ^e year of each field			6.600	19.800	41.800	68.300	77.600	92.600	107.600	107.600	107.600
B	Revenue at F CFA 180/kg (average price 2009)			1.188.000	3.564.000	7.524.000	12.294.000	13.968.000	16.668.000	19.368.000	19.368.000	19.368.000
8-A RED BEANS BY GUKAM DURING ONE SEASON – on the total surface which has been reserved for food production												
A	En kilos – avec engrais biologique à partir 4 ^e année d'une surface			14.400	43.200	91.200	141.600	146.400	154.400	162.400	162.400	162.400
B	Revenus à F CFA 360/kg (prix moyen 2009)			5.184.000	15.552.000	32.832.000	50.976.000	52.704.000	55.584.000	58.464.000	58.464.000	58.464.000
9-A LAND RENT PAID BY THE SMALLHOLDERS TO THE COMMUNITY FUND MANAGED BY TOMOKA – for 900 hectares from 2015 onwards												
A	Total per year – stabilisation in 2020 – F CFA			65.000	390.000	1.300.000	3.120.000	5.525.000	7.995.000	10.400.000	11.350.000	12.870.000
B	Average-rent-per-hectare – en F CFA			1.300	1.950	2.600	3.467	6.139	8.883	15.854	12.611	14.300
10 JATROPHA CROPS BY 300 FAMILIES PARTICIPATING IN THE CAMPAIGN <LET'S PLANT OUR HEDGES> -- 240.000 mètres												
A	Kilos			0	1.200	8.400	43.276	130.752	272.328	448.704	571.200	600.000
B	Revenue at CFA 70/kg (price level 2009)			0	84.000	588.000	2.992.640	9.152.640	19.062.960	31.409.280	39.984.000	42.000.000
C	Number of families active -with 800 metres/family			30	90	180	300	300	300	300	300	300
D	Average income per family from Jatropha /year			0	933	3.266	9.975	30.509	63.543	104.698	133.280	140.000
11 TOTAL OF JATROPHA CROPS PRODUCED BY FOUR PROGRAMMES – the total production (feedstock) for the extraction of oil												
A	Kilos		380	7.729	*34.481	155.543	462.196	1.076.067	2.076.108	3.300.954	4.302.600	4.767.450
B	Revenue / Value at price level 2009 : FCFA 70/kg		26.600	541.030	2.413.670	10.888.010	32.353.720	75.324.690	145.327.560	231.066.780	301.182.000	333.721.500
PRODUCTION TARGETS FOR THE START OF INTERVENTION PROGRAM 3 : LOCAL AGRO-INDUSTRY <i>Start of the production of bio-energy (pure vegetal oil of Jatropha =PVO) & press residues for the fabrication of briquettes and for bio-fertilizer)</i>												
12 JATROPHA CROPS WHICH WILL BE PRESSED, VOLUMES OF OIL (PVO) & EXTRACTION TIME PER PRODUCER AND TYPE OF OIL PRESS												
A	Total crops by 4 programmes/producers – kg	0	380	7.729	*42.077	155.543	462.196	1.076.067	2.076.108	3.300.954	4.302.600	4.767.450
B	Jatropha Oil (PVO) -- litres	0	135	2.736	18.447	55.060	163.619	380.927	643.943	1.168.537	1.523.120	1.687.677
C-1	Press time : extraction by Sayari Press -- hours	0	4	81	429	1.637	4.865	11.327	21.854	34.746	45.291	50.184
C-2	Number Sayari Presses – 1.900 operational hrs/yr	0	1	1	1	1	3	6	12	19	24	27
C-3	Manpower needed by the Sayari Presses - pp	0	4	4	4	4	12	24	48	76	96	108
	<i>Alternative 1 - by High Capacity Presses (HCP):</i>											
D-1	Press time : extraction by HCP – operational hours	0	0,3	7	38,6	141,1	420,2	978	1.888	3.001	3.911	4.433
D-2	Number of High Capacity Presses needed	0	1	1	1	1	1	1	1	2	2	3
	<i>Alternative2 - by Manual Presses</i>											
E-1	Press time : extraction by Bielenberg Press - hours	0	45	909	4.057	impossible						
13 OVERVIEW OF JATROPHA –CROPS-TO-PRESS, HULLS & AGRO-INDUSTRIAL RESIDUES (seedcake = press cake & sediments)												
A	Crops by 4 programmes/producers – kilos	0	380	7.729	*42.077	155.543	462.196	1.076.067	2.076.108	3.300.954	4.302.600	4.767.450
B	Press cake 74,4% of seed weight -- kg	0	283	5.750	31.305	115.725	408.956	815.359	1.559.389	2.470.670	3.215.900	3.546.983
C	Fine Sediments 0,8% of seed weight – kilos	0	3	62	437	1.227	3.701	8.768	16.768	26.567	34.580	38.140
D	Hulls : 42,86% of seed weight – kilos	0	217	3.313	18.447	67.629	199.704	469.707	898.326	1.423.296	1.852.600	2.043.329
* This crop is 42.077 kilos if all experimental crops of the Pilot Plantation are included as well. -- The Scenario which has been summarized here is only presenting very modest (prudent) estimates .The impact of small differences are the one at stake are negligible.												