C I L S S

COMITE PERMANENT INTER-ETATS DE LUTTE CONTRE LA SECHERESSE DANS LE SAHEL

PERMANENT INTERSTATE COMMITTEE FOR DROUGHT CONTROL IN THE SAHEL

SECRETARIAT EXECUTIF

PROJET COUTS DE PRODUCTION

PRODUCTION COST PROJECT

COUTS DE PRODUCTION DES PRODUITS VIVRIERS DANS LES ETATS MEMBRES DU CILSS CAMPAGNE 1984 - 1985

TOME 3

RAPPORTS NATIONAUX

GAMBIA

OUAGADOUGOU, JUIN 86

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A V E R T I S S E M E N T

W A R N I N G

La traduction française du présent document sera publiée ultérieurement (de même que la traduction anglaise du rapport régional de synthèse).

The french version of this document and the english version of the regional synthesis report will be published later on.

Planning, Programming and Monitoring
Unit For the Agricultural Sector. (PPMU)

1984/85 Production Cost, Income Assessment and Consumption Pattern Survey (CILSS)

REPORT ON THE 1984/85 PRODUCTION COST, INCOME ASSESSMENT AND CONSUMPTION PATTERN SURVEY (CILSS)

(First draft)

Agricultural Statistics and Farm
Economics Unit of the PPMU

JULY 1985

TABLE OF CONTENT

1. Summary of the main findings

The main goal of the present report is to feature the results of the production costs and consumption patterns analysis in a more readable manner than the complete listing of the calculation, (see paragraph 3)

In order to achieve this goal, the data were submitted to statistical analysis in order to provide a summary, and to reach conclusions applicable to an entire region.

The general conclusions drawn from these computations are listed hereunder.

The present survey shows differences in production costs as well as in consumption patterns between the four regions considered in the survey. If we take the agricultural development as our criteria, we find two gradiants of vectors (North-South and East-West) of relative development with their application points in MID South as the more developed region. The results of the survey show a higher use of inputs in that region and a better food consumption pattern. But, on the other hand, the results of the survey does not show any differences in the productivity of those inputs.

Regarding the Farming system or the farm typology study, the same axis of differences are met and must find their origin in the implementation of the Jahally and Pacharr small holder project. It becomes then obvious to recognize a certain radiation of that project on the region in its vicinity. (*)

(*)

Ref: Report on the Baseline Survey for Jahally and Pacharr smallholder Project 83/84

2. INTRODUCTION

Most developing countries have for long felt the great need for reliable statistics of the agricultural sector. This urgent need notwithstanding, financial and other resources have limited the scope, content and coverage of all exercises that were designed to generate the much needed statistical information. In many countries of this region, no censuses or surveys have ever been conducted. Most have relied on unreliable statistics derived as by-products of some administrative exercise. Thus the paucity of basic agricultural data.

Fully realizing the importance of reliable statistics in any planning venture, and as a first step in meeting these data requirements, the Interstate Committee for the Control of Drought in the Sahel (CILSS) decided to assist members states in organizing and conducting a "Costs of Production and Income Assessment Survey". In The Gambia this survey was launched in 1984 by the Planning, Programming and Monitoring Unit (PPMU) for the Agricultural sector and results are presented in this report.

The report is the joint responsibility of the Agricultural Statistics and Farm Economic Section of the PPMU for the Agricultural Sector.

Data compilation was done by Mr. Jaiteh and Mr. Harry Ndow under the guidance of Mr. T.Loutte FAO Associate Expert and Mr. V. Bahoum, Agricultural Statistician of PPMU. Field supervision was done by Messrs K. Camara, M. Jallow, Y. Jallow, B. Gai and V. Bahoum of PPMU.

The Survey, Methodology and Statistical Analysis

3.1 The Survey

The survey covered two administrative divisions- MacCarthy Island Division (MID) and Upper River Division (URD) each of these divisions were divided into two regions*. The questionnaires were developed jointly by CILSS consultants and the staff of PPMU based on criteria proposed by CILSS. In order to capture any differences in cultural practices among farmers in the two regions, a stratified sample was designed. Stratification was based on farm household cropping pattern and farm households that cultivated upland crops, farm households that cultivated swamp-land crops and thirdly those that cultivated land in both areas. A frame of all farm households in the selected enumeration areas was prepared and selection was done proportionate to the size of each of the three strata.

Four enumerators were recruited on a temporary basis and each was assigned three villages that make up an enumeration area. From each enumeration area, however, 15 farm households were selected as the final unit of enumeration. Two supervisors (one in each administrative division) were appointed to oversee the work of the enumerators, solve minor problems and refer to Banjul only such problems that were beyond their competence to solve in the field. Also, at least once a month a representative of PPMU made a tour of inspection of the enumerators' work.

See copy of the questionnaire in Annex 1

* The four regions obtained were numbered as follows:

1 - MID North
2 - URD North
3 - MID South
4 - URD South

Methodology of the statistical analysis

2.1 The data concerning the evaluation of the crop budget or Production costs were first compiled in a specific data sheet for which a copy is given in annex 2.
Those data were processed in Abuko in the Mixed Farming Project which made all their computer facilities available to us.
This essential support permitted the calculation of a crop budget for a total of 429 plots surveyed.
The basic listing of those computations (to be published separately) give a Production Costs model for various crops among the four regions (See an example given in annex 3)

The goal of the present work was to submit all those individual models to an intensive statistical process, in order to reduce the number of data and to arrange them in a more readable manner, and to make them meaningfully applicable to an entire region or division.
To do this, all the models were grouped by region and were tested according to each crop cost component.

The method used was the one way analysis of variance (ANOVA) in order to test the homogeneity (or the heterogeneity) of the four regions. The nul hypothese (Ho) was that regional equality exists between the means for each cost component.

Before we proceeded to calculation, the apparent abnormal data were tested and eliminated according to the result of a "T-test" (Not more than 3% of the data were then rejected)

As usual in those calculations, when the means for two or more regions were found to be statistically equal, they were aggregated and the new averages were computed accompanied by their confidence limits at 95% confidence level

3.2.2 The Food Consumption Survey

In order to make the analysis of those data possible, the answers to the questionnaires were codified and a computer programme designed. The output of that programme is mainly sorting, bar-graph and frequency calculation subroutines.

Regarding the possibility of the publication of the food comsumption pattern data, it will be simply not possible unless the reader owns a similar computer to the one used in our case(1)

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(1) Sinclair ZX Spectrum 48 K
A cassette including a copy of both the programme and the data can be made available from PPMU-Agricultural Statistics.

4. Discussion of the results

4.1 The production Costs Model

The Production Costs Models are presented as a sum of 5 different inputs necessary to produce 100 kgs of the crop considered.
The regional models are given in annexes 4 to 10.
The area necessary to produce 100 kgs of the crop considered is expressed in Ha, the labour in Man-day. The seeds, fertilizers and other costs are given in Dalasis.
The following table gives a condensed summary of those models. The seeds, fertilizers and other cost were added up and compared with the yield (soil productivity) and the labour productivity.

Table 1 Production costs for several crops in MID and URD compared with the soil and labour productivity.

	Production costs(in Dal)		Soil & labor productivity comparison MID-URD
	MID	URD	
Maize	16.54	9.93	equal
Groundnut	35.44	10.69	Lower in MID
Late millet	9.04	9.53	equal
Early millet	28.76	10.9	"
Sorghum	17.24	9.98	"
Swamp rice	14.18	4.5	Lower in MID
Irri. rice	23.88	11.21	equal

Except for sorghum, all the production costs are higher in MID without showing a better productivity of those inputs. The drought could be an explanation to this, but is still a more general situation in the western part of the Gambia. Once again, we have got some reasons to believe that the farmers in MID failed to declare entirely what they produce on their fields.

4.2 Farm Household Incomes

In the Gambia, as in other developing countries, the Gross-margin (Total value of production - variable costs) is practically equal to the Net Farm Incomes (Gross-margin - Fixed costs). In the following the Gross-margin is used as the best indicator of the Farm Household Incomes.

In order to grasp the overall situation, it is necessary to examine the three following indicators:

- The farm size according to the four regions covered by the survey (see page 3)
- The farm size according to farm typology a) pure upland agricultural production
  b) " lowland " "
  c) mixed upland and lowland activities
- The Gross-margin per Hectare (all crop production combined) according to farm typology.

4.2.1 The Farm size according to region (1)

An analysis of variance was conducted in order to detect any discrepancy in the different farms sizes. MID and URD South were found to be significantly different. (2) THe following table shows the averages and standard deviations

TABLE 2 - Farm size by region

REGION	AVERAGE SIZE (in Ha)	ST DEVIATION (in Ha)
MID North	1.848	1.26
URD "	2.158	1.38
MID South	1.248	0.83
URD "	3.11	1.835
TOTAL	2.25	Confidence Limit: 0.673

1/ Excluding land under fallow

2/ F ratio=4.834 Degree of freedom respectively 3,52

4.2.2 The Fam size according to the Farm typology

Unfortunately, we had only one farm corresponding to the second type(type b) thus no statistical conclusion can be derived.

For types a/ and c/, the above shows highly significant differencies (1) between the lowland and upland farm size:

- Upland farm size is : 2.78 Ha +/- 0.54 Ha
- Lowland " " : 1.56 +/- 0.5 Ha

This gives an explanation to the results obtained in paragraph 4.2.1 The conclusion to be drawn out is that the sample result based on a farm typology is more representative of the different characteristics of the region or division. This facilitaties and improves the extrapolation on a larger area.

1] Fratio = 10.27; degree of Freedom respectively 1 & 54.

4.2.3 The Gross-Margin/Ha per Dabada in (type a) and (type b).

The Gross-Margin comes to 737 Dal. for upland farm, and 917 Dal. for lowland farm. The anova analysis fails to show any discrepancy in those two figures.
To see whether there was any correlation between the farm-size and the G-M/Ha, the following calculations were made:
Linear regression in upland farm: G-M/Ha = - 57.02 Ha + 896 Dalasis.
correlation coefficient: - 0.237

Linear regression in lowland farm:G-M/Ha= - 48.9 Ha +994 Dalasis
Correlation coefficient: - 0.01

Due to the very low correlation coefficient, we can assume that there is little correlation between G-M/Ha and the Farm size, or at least that we cannot show that correlation in the present survey.

4.2.4 The Gross-margin per Adult Equivalent

The assessment of the farm incomes would not be complete without mentioning a word on the quotient : Gross-Margin /Adult Equivalent.
For the two farming system (a & c/) the quotients are respectively 197.7 Dal and 215.1 Dal.
The analysis of variance cannot show any significant difference between the above two means.
Thus, the general mean and its confidence limits come to: 207.2 +/- 41.2 Dal/Ad.Equ.

4.3 Consumption pattern

Although it is possible to take a lot of information out of those data, it was decided to process only the information relative to the cereal consumption pattern.
It is important to underline the scope and the limit of the data collected; as a matter of fact, the data has a purely QUALITATIVE aspect and can only show the relative changes in food consumption.
Nevertheless, a tentative attempt to evaluate the groundnut consumption in the Gambia i presented in paragraph 4,3,2.

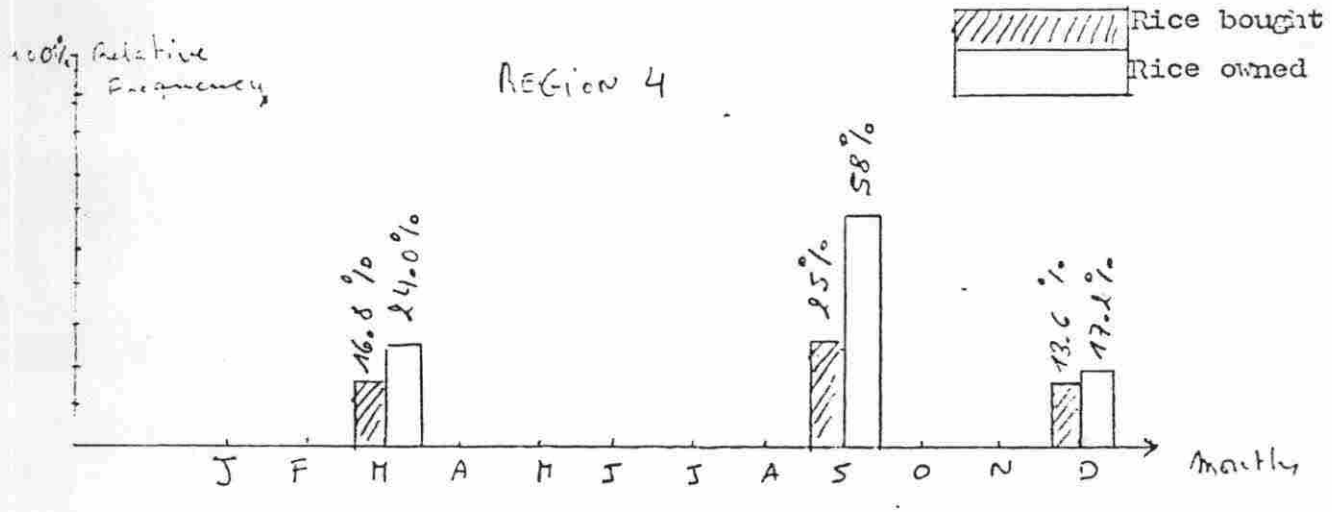
4.3.1 THE GEREAL CONSUMPTION PATTERN IN MID AND URD

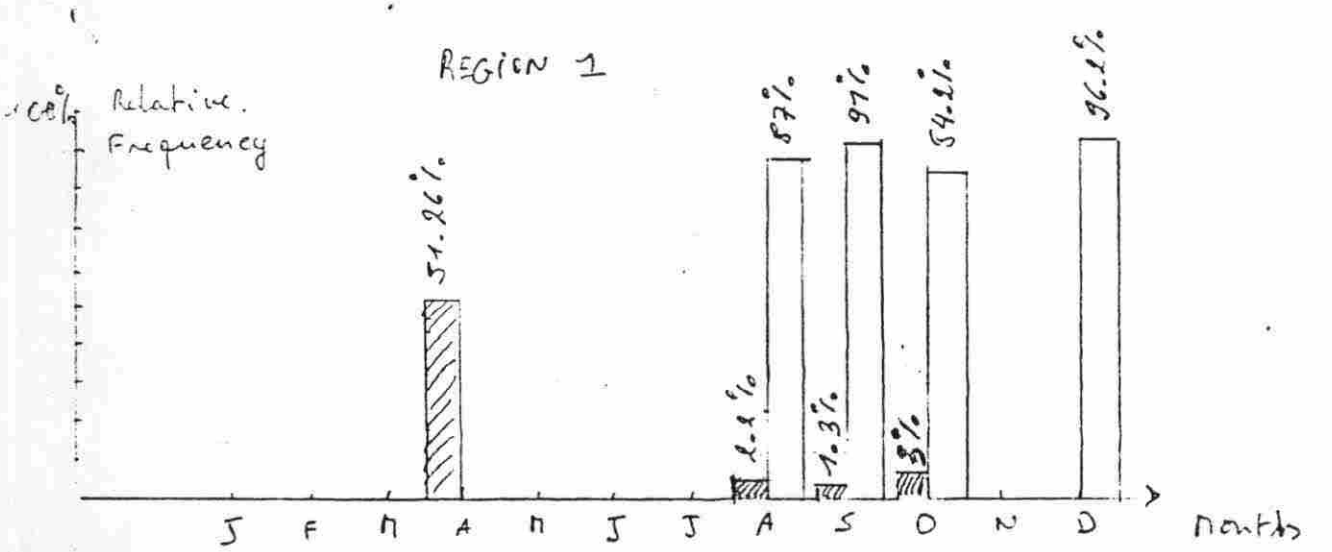
Due to certain confusion, the data on food consumption were not gathered properly in region 2, and only two months information is available.
The other regions cover 7 months and can be considered as representative.
Table 3 shows the cereal consumption pattern by region.
Once again, MID differsfrom URD for at least two reasons:
- The pattern is not the same; Millet is more important than rice in URD and vice-versa in MID.
- The farmers buy more of the basic food commodities in MID because rice production (under irrigation) became a cash crop in MID South. Thus the farmers are very busy in their rice fieldsand leaves to other people the responsibility to grow upland crops.

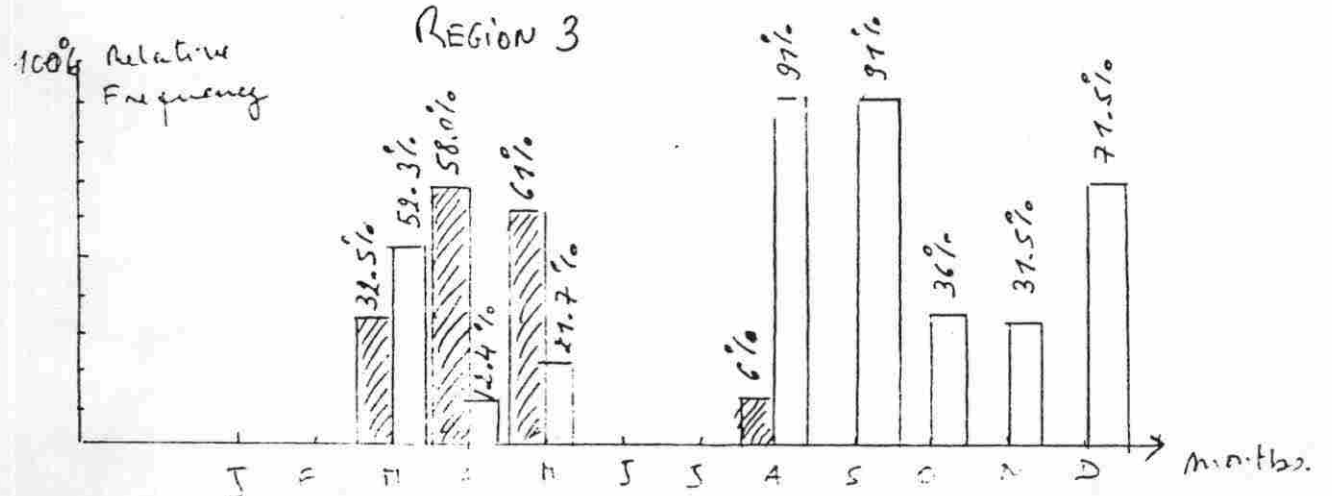
Table 3: Cereal consumption pattern by region

	Relative Cereal Consumption in the four Regions (in %)			
Cereals	MID North	MID South	URD North	URD South
Rice bought	7.7	35.8	1.1	17
Rice owned	81.6	40.5	24.5	27.0
Millet bought	1.5	0.07	-	-
Millet owned	1.9	2.9	53.4	51.0
Sorg. bought	-	0.6	-	-
Sorg. owned	0.1	3.5	3.0	2.5
Maize bought	-	-	-	-
Maize owned	5.5	3.4	20.3	-
Rice + coose	2.9	13.4	-	2.5

The following histogrammes shows the relative changes between rice bought and rice owned through the year.







4.3.2 An Evaluation of the Groundnut Consumption in the Gambia

Groundnut in kernel (not in shell) appeared in 57% of the meals. In that amount, 87.5% are consumed in the afternoon and 83% in the evening. It is assumed that the dishes are cooked once in the morning and divided in to 2 pots. We have to consider that Groundnut in kernel intervenes in 57/2 = 28.5% of the meal

According to a small sample survey the consumption per meal and per adult equivalent is:56.38 gr +/- 8.61 gr.

The quotient Adult equivalent/population in the four Regions that were enumerated is 0.6237. Based on the 1983 census the population of MID & URD is as follows:

	Population	AE Ratio
MID	130,041	81,111
URD	112,916	70,429
Total		151,540

151,540 Represent 21,77% of the total population of the GAmbia

The daily consumption in MID-URD comes to:

(8.54 +/- 1.3) tons/day.

Annual consumption for MID - URD comes to:

(3,074 +/- 478) tons/year

83% of the dishes will give

(2,674 +/- 388) tons/year.

in terms of quantity (28.5%)

The total consumption of groundnut in grain for the Gambia comes to

(3,455 +/- 505) tons.

If we assume a population growth rate of 3.469% per year.
The total consumption for 1985 will be (3700 +/- 540.86) tons/year.

if we assume a conversion factors of .69 - GPMB past. Average to transform groundnut kernels to groundnut in shell the consumption will be:

(5362 +/- 783) tons/year

Remark: The survey observed only the groundnut which was consumed in the meals and does not take into account the groundnut consumed between meals as snacks.

5. Some Conclusions

5.1 The production costs model shows with evidence the existance of axis for the agricultural development in the western part of The Gambia.
The efforts put since several years in MID south are clearly expressed by the results of the present survey;

- Higher use of fertilizers,
- Better seeds or/and better seed rate,
- Higher use of agricultural implements,
- Higher use of hired labour,
- A better food consumption pattern going in parallel with a development of the agricultural produces marketing.

Unfortunately, the survey does not show a better productivity of the above inputs.

5.2 As is to be expected, labour is (as other factors) scarce in the Gambian agriculture. This is well reflected by the study on the farm sizes, since it is also known that lowland cropping is more labour consuming than upland cropping, it is not surprising then, that the total area under cultivation is smaller in MID than in URD.
More surprising is the fact that the Gross-margin per hectare is not significantly different from one farming system to the other one.

5.3 The consumption pattern study shows also a better development in MID. Nevertheless, some efforts should be put into that matter. As a matter of fact, the study conducted up to now with the already data collected covers only the cereal consumption. Data concerning proteins, lipids, fibres (vegetables) and flavourings are also available but need further analysis.
On the other hand, the data gathered by the survey have purely a QUALITATIVE content and a survey on the quantitative aspect of consumption should be undertaken.

5.4 The last concluding remark is on the methodology for data collection that was adopted for the present survey.
The basic principle was to select our enumeration area containing all the different farming systems (or typology).
This new approach was proposed by the supporting agency (CILSS) and prove to be a more reliable method since the variability due to the different cropping systems is expressed in each enumeration area (see paragraph 3). The extrapolat becomes then largely more reliable even when the confidence limit on the different means are slightly higher.

Annex 1

Village:.....

Dabada Number:.....

Plot Number:.....

Crop Type.....

Operation	Date Started	Date finished	Total days worked	Labour use					Machine use		
				within Dabada		Curside Dabada		Remmeration	Type of machine	Power soura	
				No of Adults	No of Children & old	No of Adults	No of Children & old				
Land Clearing											
Land Prep.											
Planting (including pre-plant fertilization											
1st Weeding											
2nd Weeding											
Fertilization(Top Dress)											
Guarding											
Harvesting											
Transport											
Other											

Enumerator:.....
Supervisor:.....

Village:.....
Dgbaru No:.....
Plot No:.....

Name of Dr. .....

Schedule 2: Plot Characteristics

1 Description of Plot

1.1 Area (Hectares)..... ..
1.2 Year first cultivated .....
1.3 Soil Type.....
1.4 Distance from village.....

2. Tenure

2.1 Present owner.....
2.2 From whom inherited.....
2.3 From whom bought:.....
2.4 By whom given.....
2.5 Relationship with former owner.....

Year	Successive owners of plots	Operator if different from owner	Relationship of operator with owner	If rented How much?
1984				
1983				
1982				
1981				
1980				

1984/85 [illegible] SURVEY

[illegible]:

Village:....................

[illegible]:............

Date	Plot No	Crop	Input used	Amount	Price/Unit	Total value	Source: Owned	Source: Purchased	Source: Borrowed

put

Plot No.	Product	Name of local units	Number of local units	Number of units sold	Number of units given as gifts	Payment of loan	[illegible]

Annex 2

LLAGE:

GADA #:

# of DABADA:

# of SINKIRO:

FAMILY STAUCTURE

0-7	8-10	11-14	15-60	60+	
					MALE
					FEM.

ADULT EQUIV.

ANIMAL OWN

OXEN	HORSES

PLOT # of PLOTS | CROP NAME: | AREA: Ha | PRODUCTION: KG

LABOR INPUT	JAN(1)	FEB(2)	MAR(3)	APR(4)	MAY(5)	JUN(6)	JUL(7)	AUG(8)	SEP(9)	OCT(10)	NOV(11)	DEC(12)	HIRED LABOUR COST	
													No of L.E.	TOTAL COST
LAND CLEARING														
LAND PREPARATION														
PLANTING														
1st WEEDING														
2d WEEDING														
FERTILIZATION														
GUARDING														
HARVESTING														
TRANSPORT														
OTHER														

SEEDS	QUANTITY of UNIT												
	PRICE/UNIT												
FERTILIZER	QUANTITY of UNIT												
	PRICE/UNIT												

ENERGY	TYPE	QUANTITY of UNIT											
		COST											

SOURCES

OWNED	PURCHASED	BORROWED

ANNEX 3

CILSS Survey:Production costs & Income assessment

Dabada number: 32 Village code 22
No of plots 4 .Brokendown as follows....

Crop Code	Plot No	Area (Ha)	Product (KGS)	TVP (Dal)	VAR.COST (Dal)	G-M (Dal)
4	1	0.270	750.00	675.0	78.5	596.5
1	2	0.280	255.00	165.8	40.2	125.5
2	3	0.140	108.57	67.3	64.2	3.1
5	4	0.200	900.00	657.0	40.7	616.3
		0.890		1565.1	223.7	1341.41

Number of adult equivalent: 6.25
Total area cultivated: .89 Ha
Area under cultivation/Adult equi: .14
Total mandays worked: 508 or, 81.2 M-d/Adult equiv.
Total Gross margin/Md..... 2.6
Total Gross margin/Adult.Equiv.... 214.6
Total Gross margin/Ha..... 1507.1

PRODUCTION COSTS MODEL FOR 100KGS OF MAIZE(.28 Ha,or: 31.4 % of land manage

Ha	M-d	Seeds	Fert	other	Var.C	TVP	G-M	G-M/Md	G-M/Ha
0.110	46.7	1.4	14.4	0.0	15.8	65.0	49.2	1.05	447.3

PRODUCTION COSTS MODEL FOR 100KGS OF GR.NUT(.14 Ha,or: 15.7 % of land manag

Ha	M-d	Seeds	Fert	other	Var.C	TVP	G-M	G-M/Md	G-M/Ha
0.129	130.8	8.6	50.6	0.0	59.1	62.0	2.9	0.03	22.48

PRODUCTION COSTS MODEL FOR 100KGS OF L.MIL(.27 Ha,or: 30.3 % of land manage

Ha	M-d	Seeds	Fert	other	Var.C	TVP	G-M	G-M/Md	G-M/Ha
0.036	16.1	0.7	9.8	0.0	10.5	90.0	79.5	4.9	2208

PRODUCTION COSTS MODEL FOR 100KGS OF SORG.(2 Ha,or: 224.7 % of land managed

Ha	M-d	Seeds	Fert	other	Var.C	TVP	G-M	G-M/Md	G-M/Ha
0.222	14.0	0.5	4.1	0.0	4.5	73.0	68.5	4.9	3113

Annex 4

Production costs model for 100 kgs of Maize

REGION	HA	M-D	SEEDS	FERTILIZERS	OTHERS
1	0.118 +/- 0.013	40.97 +/- 6.52	7.08 +/- 2.04	9.46 +/- 4.6	0
2	"	"	2.75 +/- 2.15	7.18 +/- 5.97	0
3	"	"	7.08 +/- 2.04	9.46 +/- 4.6	0
4	"	"	2.75 +/- 2.15	0.0	0
GENERAL	0.118 +/- 0.013	49.97 +/- 6.52	5.40 +/- 1.48	7.18 +/- 3.29	0

Annex 5

Production costs.model for 100 kgs of Groundnut

REGION	HA	M-D	SEEDS	FERTILIZERS	OTHERS
1	0.187 +/- 0.033	30.59 +/- 6.85	19.11 +/- 2.95	8.37 +/- 2.09	7.96 +/- 4.04
2	0.086 +/- 0.027	30.59 +/- 6.85	6.6 +/- 2.01	3.55 +/- 1.41	0.54 +/- 5.7
3	0.187 +/- 0.033	30.59 +/- 6.85	19.11 +/- 2.95	8.37 +/- 2.09	7.96 +/- 4.08
4	0.086 +/- 0.027	54.95 +/- 8.85	6.6 +/- 2.01	3.55 +/- 1.41	0
GENERAL	0.126 +/- 0.021	41.66 +/- 5.97	10.57 +/- 1.64	5.06 +/- 1.15	5.45 +/- 3.31

Annex 6

Production costs model for 100 kgs of Late Millet

REGION	HA	M-D	SEED	FERTILIZERS	OTHER
1		NO LATE MILLET FIELDS			
2	0.124 +/- 0.017	47.85 +/- 9.98	1.5 +/- 0.17	7.87 +/- 2.45	0.16 +/- 0.03
3	0.124 +/- 0.017	47.85 +/- 9.98	2.92 +/- 0.76	5.96 +/- 4.70	0.16 +/- 0.03
4	0.124 +/- 0.017	47.85 +/- 9.98	1.5 +/- 0.27	3.38 +/- 2.25	0.16 +/- 0.03
GENERAL	0.124 +/- 0.017	47.85 +/- 9.98	1.66 +/- 0.25	5.5 +/- 1.56	0.16 +/- 0.03

Annex 7

Production costs model for 100 kgs of Early Millet

REGION	HA	M-D	SEEDS	FERTILIZERS	OTHERS
1	0.16 +/- 0.028	51.4 +/- 21.9	3.67 +/- 1.71	12.14 +/- 7.13	12.95 +/- 20.1
2 1]	0.159	30	1.5	9.4	0
3	0.16 +/- 0.028	51.4 +/- 21.9	3.67 +/- 1.71	0.75 +/- 0.95	12.95 +/- 20.1
4		NO EARLY MILLET FIELDS.			
GENERAL	0.16 +/- 0.028	51.4 +/- 21.9	3.67 +/- 1.71	-	12.95 +/- 20.1

1] Only one plot in MID - South

Annex 8

Production costs model for 100 kgs of Sorghum

	HA	M-D	SEEDS	FERTILIZERS	OTHERS
1 1]	0.063	10.3	1.1	0	0
2	0.138 +/- 0.03	25.14 +/- 26.7	1.95 +/- 1.15	8.033 +/- 3.75	0
3	0.138 +/- 0.03	25.14 +/- 26.7	1.95 +/- 1.15	8.033 +/- 3.75	7.26
4	0.138 +/- 0.03	109.09 +/- 33.55	2.85 +/- 1.18	8.033 +/- 3.75	0
GENERAL	0.138 +/- 0.03	-	2.29 +/- 0.75	8.033 +/- 3.75	-

1] Only one field in MID - North

Annex 9

Production costs for 100 kgs of Swamp Rice .

REGION	HA	M-D	SEEDS	FERTILIZERS	OTHERS
1	0.0567 +/- 0.014	43.33 +/- 9.28	4.0 +/- 1.1	0	10.18 +/- 2.35
2 1]	0.044	57.00	4.4	0	8.3
3 1]	0.145	22.9	5.0	0	-
4	0.0567 +/- 0.014	43.33 +/- 9.28	4.0 +/- 1.1	0	0
GENERAL	-	-	-	-	-

1] Only one field.

Annex 10

Production cost for 100 kgs of Irrigated Rice.

REGION	HA	M-D	SEEDS	FERTILIZERS	OTHERS
1	0.033 +/- 0.005	45.2 +/- 19.8	5.12 +/- 2.40	12.50 +/- 6.3	6.26 +/- 3.4
2	0.033 +/- 0.005	45.2 +/- 19.8	5.12 +/- 2.40	5.57 +/- 1.9	0.52 +/- 1.05
3	0.033 +/- 0.005	45.2 +/- 19.8	5.12 +/- 2.40	12.50 +/- 6.3	6.26 +/- 3.4
4 1]	-	-	-	-	-
GENERAL	0.033 +/- 0.005	45.2 +/- 19.8	5.12 +/- 2.40	-	5.52 +/- 3.13

1] No rice field in URD South.