

## Appendix 1 – Survey questionnaire

### NATIONAL AGRICULTURAL RESEARCH ORGANISATION

#### Questionnaire on

### GROUND NUT ROSSETTE DISEASE AND ITS MANAGEMENT SAARI/NRI

Start time: ..... End time: ..... Code No. : .....

Name of enumerator: ..... Date: .....

#### A. HOUSEHOLD AND SOCIO-ECONOMIC CHARACTERISTICS

Name of Respondent:..... District: .....

Age of household head ..... Years County: .....

Sex of household head 1= Male, 2=Female Sub-county: .....

Parish: .....

Village: .....

1. (a) Formal education (highest Level attained)

- i) Illiterate \_\_\_\_\_ 0
- ii) Primary school
- iii) Secondary school - S4 / Junior school (J3)
- iv) High school - S6 / J5 / technical school / TTC
- v) More than S6 - University / higher TTC

1. (b) If female, where is the husband

- Not relevant \_\_\_\_\_ 0
- Dead \_\_\_\_\_ 1
- Divorced \_\_\_\_\_ 2
- Other \_\_\_\_\_ 3

1. (c) Marital status

- i) Single
- ii) Married
- iii) Other(specify)

2. (a) Size of production unit

- i) Total acreage ..... acres
- ii) Cultivated area ..... acres
- iii) Grazing area ..... acres
- iv) Area under fallow ..... acres

2 (b) Tenure of land (Give acreage)

- i) Communal ..... acres
- ii) Private ..... acres
- iii) Government / institutional ..... acres
- iv) Family / clan ..... acres

2. (c) Did you rent/hire in land? Yes \_\_\_\_1 No \_\_\_\_2 (if yes specify acres)

2 (d) Did you rent out land? Yes \_\_\_\_1 No \_\_\_\_2

2 (e) Did you give land for share cropping Yes \_\_\_\_1 No \_\_\_\_2

3. (a) How long have you been farming? ..... (years)

3. (b) Do you farm part-time or full time?

- (i) Part-time
- (ii) Full time

3. (c) If you are not a full time farmer, how much of your time do you devote to farming operations? (tick the appropriate)
- (i) less than a half
  - (ii) half
  - (iii) more than a half
4. (a) Is any member of your household involved in any off-farm activities? (i) yes (ii) no
4. (b) If yes, please specify the activity(ies)
- (i) formally employed
  - (ii) making baskets, winnowers,
  - (iii) trading / business
  - (iv) hiring out oxen/farm implements/labour
  - (v) others (specify)
  - (vi) Is anyone else in the household who does not live there involved in any off-farm activities? (Capture influence of remittances).
5. (a) Which types of livestock are kept in the household. (Give numbers)

Livestock Type	Number	Ownership
Cattle		
Goats		
Sheep		
Donkeys		
Chicken		
Pigs		
Turkeys		
Other (specify)		

\*(men=M; women=W, C=children)

5. (b) Give 5 of the major crops that are usually grown in the first season, who grows it and the purpose of production:

<u>Crop</u>	<u>Acreage</u>	<u>Gender*</u>	<u>Purpose of production**</u>
1 _____	_____	_____	_____
2 _____	_____	_____	_____
3 _____	_____	_____	_____
4 _____	_____	_____	_____
5 _____	_____	_____	_____

\*(men=M/women=W)

\*\* (1=Cash generation, 2=food - subsistence, 3=brewing, 4=other(specify), ...)

- 5 (c) Give 5 of the major crops that are usually grown in the second season, who grows it and the purpose of production:

<u>Crop</u>	<u>Acreage</u>	<u>Gender*</u>	<u>Purpose of production**</u>
1 _____	_____	_____	_____
2 _____	_____	_____	_____
3 _____	_____	_____	_____
4 -	_____	_____	_____
5 _____	_____	_____	_____

\*\* (1=Cash generation, 2=food - subsistence, 3=brewing, 4=other(specify), ...)

*Be careful to capture multiple objectives.*

5. (d) How much of the crops listed in question 5(b and c) did you sell last year?

<u>Crop</u>	<u>Ont. produced</u> (bags/tins/basins/kg)		<u>Amount sold</u> (bags/tins/basins/kg)		<u>Price*</u> (ushs/kg)	
	1 <sup>st</sup> season	2 <sup>nd</sup> season	1 <sup>st</sup> season	2 <sup>nd</sup> season	1 <sup>st</sup>	2 <sup>nd</sup>

<u>Crop</u>	<u>Qnt. produced</u> (bags/tins/basins/kg)		<u>Amount sold</u> (bags/tins/basins/kg)		<u>Price*</u> (ushs/kg)	

\*Prices to be converted properly

## B. LABOUR

6. (a) What family labour is available for production activities?

Age group	Participating in farm activities all the time		Not directly participating in farm activities (part time)	
	Male	Female	Male	Female
18 & above				
12 - 17 years				
7 - 11 years				
6 and less				

6. (b) Do you use hired labour? (1) yes (2) no

(c) If yes, specify for which crops

6. (d) What kind of hired labour do you use per season (*on average or last season: Number of days as well*)?

i) First season

Type of hired labour	No. of males	No. of females
Casual		
Permanent		
Village labour exchange		

ii) Second season

Type of hired labour	No. of males	No. of females
Casual		
Permanent		
Village labour exchange		

6. (e) For which activities do you use hired labour? (tick for the different types of hired labour)

Activity	Casual labour	Permanent labour	Village labour exchange
Land preparation			
Planting			
Weeding			
Harvesting			
On-farm transport			
Post-harvest processing			

## C: Groundnut production

7 (a). Give constraints/problems affecting your g/nut production (tick which ever is appropriate and mention the coping strategy/mechanism)

Constraint	Tick as appropriate	Copping strategy
Diseases (specify)		
Field Pests (specify)		
Shortage of land		
Land Opening		

Shortage of labour		
Drought		
Lack of quality seed		
Storage pests		
Low output prices		
Low/reduced soil fertility		
Others (specify)		

7. (b) Give acreage under improved and unimproved g/nut varieties:

Groundnuts	Acreage
Improved varieties	
Local varieties	

7. (c) Which varieties of ground nuts do you grow? (Tick appropriate)

Variety	Year 1st planted	Initial source of seed	Current source of seed
Igola 1 (India)			
Ebaya (Rebel)			
Emoita			
Erudurudu (red seeded)			
Erudurudu (light tan seeded)			
Etesoti			
Serenut 1			
Serenut 2			
Other (specify)			

7. (d) Why do you prefer these varieties grown? (see codes below)

Variety	Reasons
Igola 1 (India)	
Ebaya (Rebel)	
Emoita	
Erudurudu (red seeded)	
Erudurudu (light tan seeded)	
Etesoti	
Serenut 1	
Serenut 2	
Other (specify)	

*Codes: 1= high yield; 2=disease resistance; 3=early maturity; 4=good taste; 5=good color; 6=drought resistance; 7=easy to pound, 8=good storeability; 9=weed suppression; 10=field pest resistance; 11=uniform maturity, 12=big seed; 13=ready market; 14=fetches higher prices*

7. (e) What don't you like about these varieties? (see codes below)

Variety	Weaknesses/shortcomings
Igola 1 (India)	

Ebaya (Rebel)	
Emoita	
Erudurudu (red seeded)	
Erudurudu (light tan seeded)	
Etesoti	
Serenut 1	
Serenut 2	
Other (specify)	

*Codes: 1= poor yield; 2=susceptible to g/nut rosette disease; 3=late maturity; 4=bitter; 6= inferior drought tolerance; 7=hard to pound, 8=easily affected by storage pests; 9=difficult to harvest(requires digging up); 10=inferior taste (paste); 11=non uniform maturity, 12=small seed; 13=restricted marketability;*

8. Desirable characteristics of a good groundnut variety (in order of preference)

List desired characteristics, in order of importance

9. Which varieties would demand more labour and please explain why

10. Which colour of groundnuts do you prefer and give reasons for your preference

- i. Red
- ii. Light tan
- iii. No preference
- iv. Other (specify)

11. Groundnut Production System

Activity	Month(s)	Who performs?		
		Men	Women	Children
Field selection				
Bush clearing				
Ploughing				
Planting				
Weeding				
Harvesting				
Transportation (field-home)				
Drying				
Shelling/pod opening				
Sorting				
Storage				
Marketing				

12. Perceptions of Groundnut Rosette Disease (use photos )

12.(a)Do you know of Rosette Disease? Yes / No.

12. (b) What name do you call this Disease?

12. (c) What do you think causes this Disease?

12. (d) In your view how is the disease transmitted ?

12. (e) How do you try to control the rosette disease?

12. (f) What is the loss in yield due to rosette Disease?

- i. Low (Less than 20%)
- ii. Moderate (20-40%)
- iii. High (over 50%)
- iv. Total loss

12. (g). Do you know any variety(s), which is not affected by the rosette disease? Yes / No  
Specify the variety(s)

12. (h) In your view what is the trend of occurrence of this disease over the years

- i. Increasing
- ii. Same
- iii. Decreasing

13. Perceptions of Groundnut Leaf miner (use photos brought out by F.Kimmins)

13.(a)Do you know of groundnut leaf miner? Yes / No.

13. (b) What name do you call the symptoms ?

13. (c) What do you think causes these symptoms?

13. (d) How do you try to control the symptoms?

13. (f) What is the loss in yield due to the symptoms?

- v. Low (Less than 20%)
- vi. Moderate (20-40%)
- vii. High (over 50%)
- viii. Total loss

13. (g). Do you know any variety(s), which is not affected? Yes / No  
Specify the variety(s)

13. (h) In your view has the damage over the years

- iv. Increased
- v. Same
- vi. Decreased

14. . Do you plant your g/nuts in lines/rows? Yes / No (Specify spacing used)

15. . Do you grow g/nuts in pure stands

- i. Pure stands/sole crop
- ii. Mixed/intercropped

16. (a) How many times do you weed your groundnuts
- Once
  - Twice
  - Thrice
16. (b) At what stage do you weed the groundnuts (specify)

17. What purchased inputs do you use in production of g/nuts

Input	Purchased, Borrowed or Hired	Approximate Cost

How easy is it for you to obtain the relevant inputs for production? (Use code below).

Type of input	Input availability			
Seeds				
Hoes				
Fertilizers				
Herbicides				
Insecticides				
Fungicides				
Others (specify)				

*Code: 1=very easy; 2=easy; 3=not easy; 4=other (specify)*

18. Use, Marketing and Decision Making

What are the uses of groundnuts	
What proportion do you sell?	
What proportion do you eat?	
What proportion do you retain for seed?	
If sold, where do you sell?	
If sold, when do you sell?	
If sold, shelled or unshelled?	
If sold, do you sell all at once?	
Do you store any of these groundnuts? If so where?	

18. (b) Who makes the following decisions?

Decision	Who makes?
How much to plant	
How much seed to retain	
How much to eat	
How much to sell	
When to sell	
Where to sell	

**D. INSTITUTIONS**

19. (a) Is any member of the household a member of any group/association? yes / no  
If yes, specify what kind of group: (name the group)

Extension contact group	farmer association	Other (specify)

19. (b) What are the major functions of the group/association?  
19. (c) When did you/they become a member of the group/association? (give year) .....  
19. (d) Why did you/they become a member of the group (any benefits)?  
19. (e) Does the group/association address agricultural issues? Yes ..... No .....  
19. (f) If yes, enumerate the agricultural issues addressed

20. (a) What are your major sources of information about agricultural activities (tick )

- i. Government extension staff
- ii. NGO (specify)
- iii. Radio
- iv. Neighbour / friend
- v. School
- vi. Parents
- vii. Training workshop
- viii. On farm research/demonstration
- ix. Exchange visit/field tours
- x. Visiting researchers
- xi. Newspaper/newsletter/pamphlet
- xii. Others (specify)

21. (a) Do you have a radio in your household? Yes /No

21. (b) If yes do you listen to agricultural education programs? Yes ..... No ..... (Name the program)

21. (c) If Yes, is the coverage of the program satisfactory ? Yes \_\_\_\_1 No \_\_\_\_2

22. (a) Did extension agent visit you last year? Yes \_\_\_\_1 No \_\_\_\_2

22. (b) If Yes, what time of the year or during which operation?

Plowing _____1	No. of visit _____
Planting _____2	No. of visit _____
Weeding _____3	No. of visit _____
Harvesting _____4	No. of visit _____

23. Have you ever attended a field day or demonstration trial? Yes \_\_\_\_1 No \_\_\_\_2

24. Have you ever attended a farmer's training course? Yes \_\_\_\_1 No \_\_\_\_2

25. Please give any comment / suggestion relating to agriculture and the groundnut production in particular.



## Appendix 2 – Determinants of total and cultivated areas

### A: Determinants of total planted area (dependent variable)

#### Descriptive Statistics

	Mean	Std. Deviation	N
Total Area	8.5435	8.8202	207
AGE	42.0435	15.1630	207
Education (1-5)	2.3285	.9234	207

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.281 <sup>a</sup>	.079	.070	8.5074

a. Predictors: (Constant), Education (1-5), AGE

#### ANOVA<sup>b</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1261.421	2	630.710	8.714	.000 <sup>a</sup>
	Residual	14764.688	204	72.376		
	Total	16026.109	206			

a. Predictors: (Constant), Education (1-5), AGE

b. Dependent Variable: Total Area

#### Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	% Confidence Interval for	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	-1.173	2.419		-.485	.628	-5.943	3.597
	AGE	.112	.039	.193	2.859	.005	.035	.190
	Education (1-	2.144	.645	.224	3.322	.001	.872	3.417

a. Dependent Variable: Total Area

All confidence intervals calculated at 95% level.

Age = age of household head

Education = general level of education (where 1=illiterate and 5=college level or equivalent, with all stages in between)

## B: Determinants of total cultivated area

### Descriptive Statistics

	Mean	Std. Deviation	N
Cultivated Area	4.7947	3.6287	207
AGE	42.0435	15.1630	207
Education (1-5)	2.3285	.9234	207

### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.249 <sup>a</sup>	.062	.053	3.5318

a. Predictors: (Constant), Education (1-5), AGE

### ANOVA<sup>b</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	167.879	2	83.939	6.729	.001 <sup>a</sup>
	Residual	2544.645	204	12.474		
	Total	2712.524	206			

a. Predictors: (Constant), Education (1-5), AGE

b. Dependent Variable: Cultivated Area

### Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	% Confidence Interval for	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1.230	1.004		1.225	.222	-.750	3.211
	AGE	.867E-02	.016	.203	2.983	.003	.017	.081
	Education (1-	.652	.268	.166	2.433	.016	.124	1.180

a. Dependent Variable: Cultivated Area

All confidence intervals calculated at 95% level.

Age = age of household head

Education = general level of education (where 1=illiterate and 5=college level or equivalent, with all stages in between)

### Appendix 3 – Determinants of participation in non-farm activities

**Model Summary**

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	253.145	.042	.059

**Classification Table<sup>a</sup>**

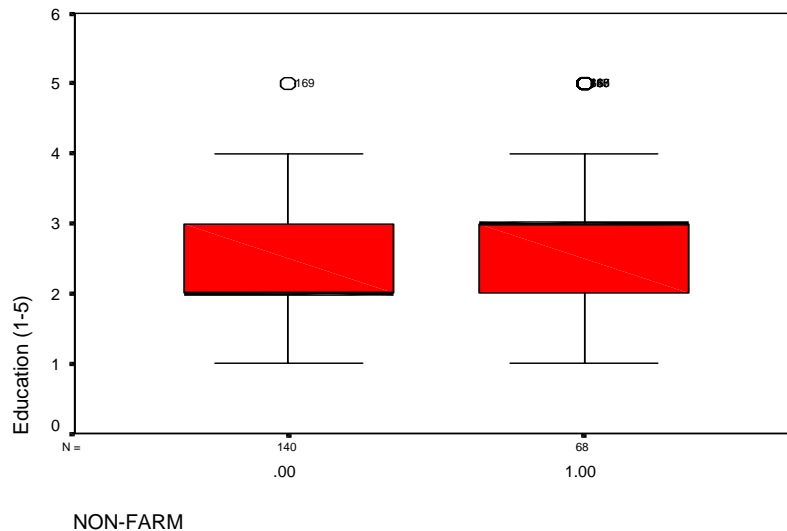
Observed			Predicted		
			NON-FARM		Percentage Correct
	.00	1.00			
Step 1	NON-FARM	.00	137	2	98.6
		1.00	58	10	14.7
Overall Percentage					71.0

a. The cut value is .500

**Variables in the Equation**

	B	S.E.	Wald	df	Sig.	Exp(B)
Step 1	AGE	.010	.975	1	.323	1.010
	EDUCATIO	.476	8.110	1	.004	1.609
	Constant	-2.275	12.210	1	.000	.103

a. Variable(s) entered on step 1: AGE, EDUCATIO.



All analyses relate to presence (1) or non presence (0) of non-farm income in the household.

**Appendix 4 – Determinants of participation in formal employment and trading/small business activity**

**A: Involvement in Formal Employment**

**Model Summary**

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	168.872	.103	.170

**Classification Table<sup>a</sup>**

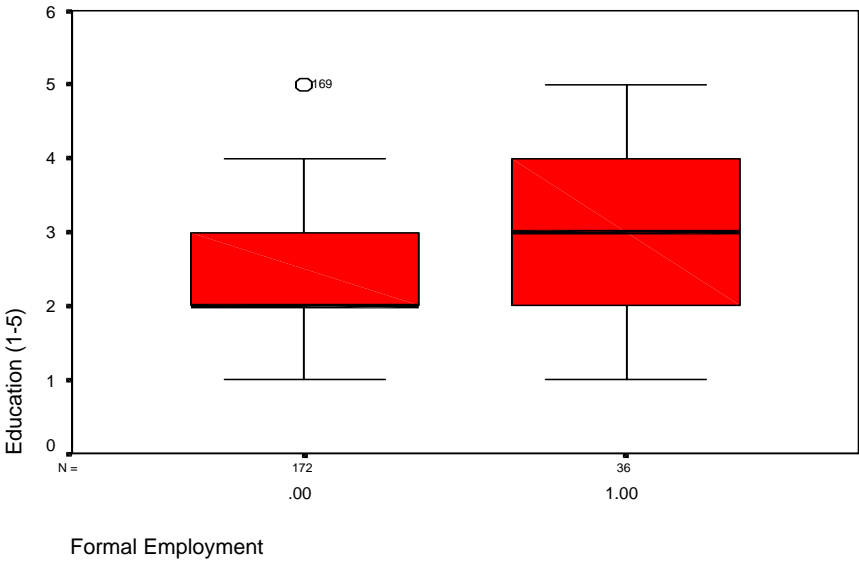
Observed		Predicted			
		Formal Employment		Percentage Correct	
		.00	1.00		
Step 1	Formal Employment	.00	169	2	98.8
		1.00	30	6	16.7
Overall Percentage					84.5

a. The cut value is .500

**Variables in the Equation**

Step		B	S.E.	Wald	df	Sig.	Exp(B)
1 <sup>a</sup>	AGE	.031	.014	5.418	1	.020	1.032
	EDUCATIO	.887	.214	17.149	1	.000	2.428
	Constant	-5.180	.960	29.143	1	.000	.006

a. Variable(s) entered on step 1: AGE, EDUCATIO.



**B: Involvement in Trading/Small Business Activity**

**Model Summary**

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	185.331	.028	.047

**Classification Table<sup>a</sup>**

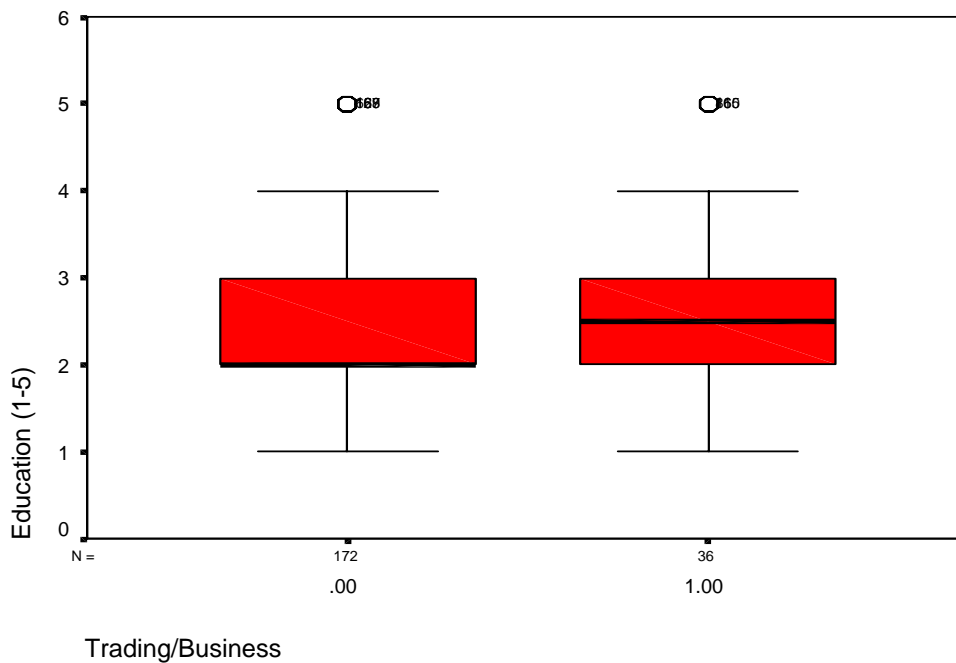
Observed		Predicted			
		Trading/Business		Percentage Correct	
		.00	1.00		
Step 1	Trading/Business	.00	171	0	100.0
		1.00	36	0	.0
Overall Percentage					82.6

a. The cut value is .500

**Variables in the Equation**

Step		B	S.E.	Wald	df	Sig.	Exp(B)
1 <sup>a</sup>	AGE	-.014	.013	1.172	1	.279	.986
	EDUCATIO	.405	.193	4.395	1	.036	1.499
	Constant	-1.959	.760	6.645	1	.010	.141

a. Variable(s) entered on step 1: AGE, EDUCATIO.



## Appendix 5 – Determinants of total income sources

### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.283 <sup>a</sup>	.080	.062	.6353

a. Predictors: (Constant), Female Headed, AGE, SOROTI, Education (1-5)

### ANOVA<sup>b</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.071	4	1.768	4.380	.002 <sup>a</sup>
	Residual	81.519	202	.404		
	Total	88.589	206			

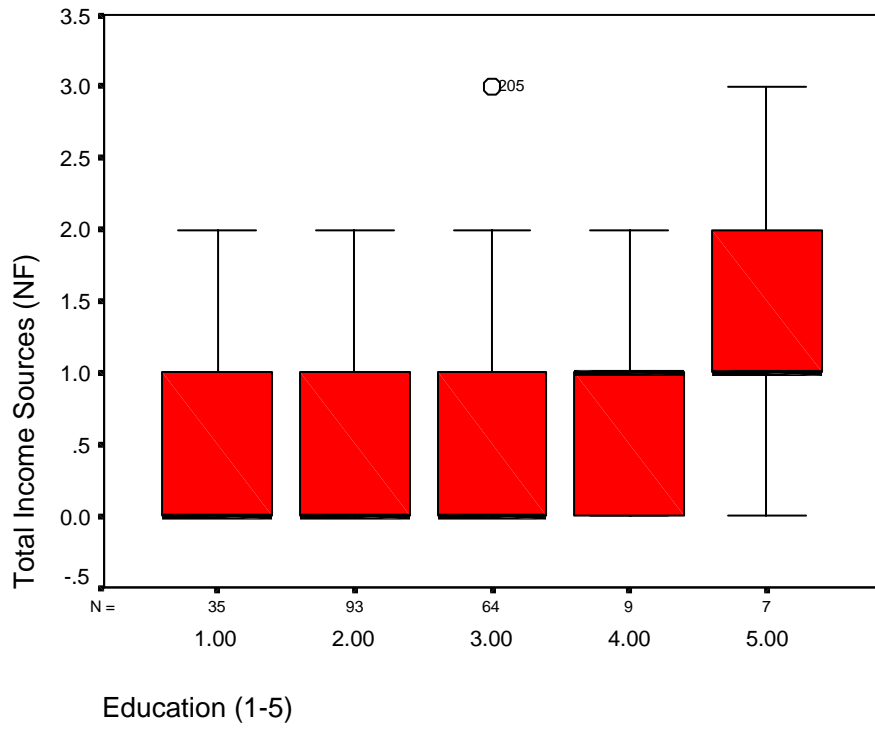
a. Predictors: (Constant), Female Headed, AGE, SOROTI, Education (1-5)

b. Dependent Variable: Total Income Sources (NF)

### Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	% Confidence Interval for	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	-.241	.199		-1.211	.227	-.633	.151
	AGE	176E-03	.003	.073	1.070	.286	-.003	.009
	Education (1-5)	.205	.051	.289	4.052	.000	.105	.305
	SOROTI	811E-02	.094	.057	.834	.405	-.107	.263
	Female Headed	.178	.132	.097	1.349	.179	-.082	.438

a. Dependent Variable: Total Income Sources (NF)



## Appendix 6 – Determinants of differences between total and cultivated areas

### Descriptive Statistics

	Mean	Std. Deviation	N
Area Difference	3.7404	6.5892	208
C:Labour Shortage	.6635	.4737	208
C:Soil Fertility	.5529	.4984	208
C:Output Prices	.5240	.5006	208

### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.170 <sup>a</sup>	.029	.015	6.5408

a. Predictors: (Constant), C:Output Prices, C:Labour Shortage, C:Soil Fertility

### ANOVA<sup>b</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	259.876	3	86.625	2.025	.112 <sup>a</sup>
	Residual	8727.605	204	42.782		
	Total	8987.481	207			

a. Predictors: (Constant), C:Output Prices, C:Labour Shortage, C:Soil Fertility

b. Dependent Variable: Area Difference

### Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	% Confidence Interval for	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	2.473	.890		2.779	.006	.719	4.228
	C:Labour Shortage	1.852	.997	.133	1.857	.065	-.115	3.818
	C:Soil Fertility	1.267	1.020	.096	1.242	.216	-.744	3.278
	C:Output Prices	-1.263	1.010	-.096	-1.250	.213	-3.254	.728

a. Dependent Variable: Area Difference



**Appendix 7 – Determinants of the uptake of improved groundnut varieties – influence of education**

**A: Influence of Illiteracy and Very High Education Levels**

**Model Summary**

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	276.592	.032	.043

**Classification Table<sup>a</sup>**

Observed		Predicted		
		Presence of Improved Variety		Percentage Correct
		.00	1.00	
Step 1	Presence of Improved Variety	.00		
		21	67	23.9
		14	106	88.3
	Overall Percentage			61.1

a. The cut value is .500

**Variables in the Equation**

	B	S.E.	Wald	df	Sig.	Exp(B)	
Step <sup>a</sup> 1	ILLITERA	-.806	.382	4.459	1	.035	.447
	V12	.698	.600	1.356	1	.244	2.011
	Constant	.400	.163	6.040	1	.014	1.492

a. Variable(s) entered on step 1: ILLITERA, V12.

**B: Influence of Education Levels (All from Illiteracy to High)**

**Model Summary**

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	274.868	.040	.054

**Classification Table<sup>a</sup>**

Observed			Predicted		
			Presence of Improved Variety		Percentage Correct
			.00	1.00	
Step 1	Presence of Improved Variety	.00 1.00	21 14	67 106	23.9 88.3
Overall Percentage					61.1

a. The cut value is .500

**Variables in the Equation**

	B	S.E.	Wald	df	Sig.	Exp(B)	
Step 1 <sup>a</sup>	EDUCATIO	.470	.168	7.848	1	.005	1.600
	Constant	-.766	.404	3.599	1	.058	.465

a. Variable(s) entered on step 1: EDUCATIO.

**C: Influence of Education (Primary and up)****Model Summary**

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	275.799	.036	.048

**Classification Table<sup>a</sup>**

Observed			Predicted		
			Presence of Improved Variety		Percentage Correct
			.00	1.00	
Step 1	Presence of Improved Variety	.00 1.00	21 14	67 106	23.9 88.3
Overall Percentage					61.1

a. The cut value is .500

**Variables in the Equation**

	B	S.E.	Wald	df	Sig.	Exp(B)	
Step 1 <sup>a</sup>	V10	.687	.404	2.896	1	.089	1.987
	SECONDAR	.984	.432	5.175	1	.023	2.674
	V12	1.504	.673	5.001	1	.025	4.500
	Constant	-.405	.345	1.381	1	.240	.667

a. Variable(s) entered on step 1: V10, SECONDAR, V12.

## Appendix 8 – Determinant of uptake of new varieties - information sources

### Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	270.888	.054	.072

### Classification Table<sup>a</sup>

Observed			Predicted		Percentage Correct
			Presence of Improved Variety		
			.00	1.00	
Step 1	Presence of Improved Variety	.00	34	54	38.6
		1.00	26	93	78.2
Overall Percentage					61.4

a. The cut value is .500

### Variables in the Equation

Step		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 <sup>a</sup>	V49	-.155	.324	.230	1	.632	.856
	V50	.229	.459	.249	1	.618	1.258
	V51	.509	.323	2.492	1	.114	1.664
	V52	.320	.353	.824	1	.364	1.377
	V53	-.372	.410	.822	1	.365	.690
	V54	.087	.331	.069	1	.792	1.091
	V55	.100	.510	.038	1	.845	1.105
	V56	.784	.542	2.094	1	.148	2.190
	V57	-.524	.527	.988	1	.320	.592
	V58	-.070	.440	.026	1	.873	.932
	V59	.376	.376	1.003	1	.317	1.457
	V60	.479	.882	.295	1	.587	1.615
	Constant		-.353	.381	.860	1	.354

a. Variable(s) entered on step 1: V49, V50, V51, V52, V53, V54, V55, V56, V57, V58, V59, V

**Appendix 9 – Determinants of the uptake of improved varieties - combined educational and information source influences**

**A: Where education defined in general levels (Illiteracy to High)**

**Model Summary**

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	265.993	.076	.102

**Classification Table<sup>a</sup>**

Observed		Predicted			
		Presence of Improved Variety		Percentage Correct	
		.00	1.00		
Step 1	Presence of Improved Variety	.00			
		40	48	45.5	
		25	94	79.0	
	Overall Percentage			64.7	

a. The cut value is .500

**Variables in the Equation**

	B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 <sup>a</sup>						
V49	-.126	.328	.147	1	.702	.882
V50	.059	.477	.015	1	.902	1.060
V51	.383	.332	1.332	1	.248	1.466
V52	.338	.358	.889	1	.346	1.402
V53	-.432	.421	1.053	1	.305	.649
V54	.157	.337	.218	1	.641	1.170
V55	.081	.522	.024	1	.877	1.084
V56	.723	.553	1.710	1	.191	2.061
V57	-.628	.537	1.368	1	.242	.534
V58	-.032	.454	.005	1	.944	.969
V59	.257	.385	.447	1	.504	1.293
V60	.661	.895	.544	1	.461	1.936
EDUCATIO	.403	.187	4.639	1	.031	1.496
Constant	-1.155	.538	4.618	1	.032	.315

a. Variable(s) entered on step 1: V49, V50, V51, V52, V53, V54, V55, V56, V57, V58, V59, V60, EDUCATIO.

**B: Where education defined as illiteracy and high**

**Model Summary**

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	266.360	.074	.100

**Classification Table<sup>a</sup>**

Observed			Predicted		Percentage Correct
			Presence of Improved Variety		
			.00	1.00	
Step 1	Presence of Improved Variety	.00	33	55	37.5
		1.00	24	95	79.8
Overall Percentage					61.8

a. The cut value is .500

**Variables in the Equation**

	B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 <sup>a</sup>						
V49	-.158	.329	.232	1	.630	.854
V50	.175	.468	.139	1	.709	1.191
V51	.423	.333	1.620	1	.203	1.527
V52	.360	.360	.999	1	.317	1.433
V53	-.449	.423	1.126	1	.289	.638
V54	.126	.337	.140	1	.708	1.135
V55	.081	.522	.024	1	.877	1.084
V56	.809	.557	2.111	1	.146	2.246
V57	-.683	.541	1.594	1	.207	.505
V58	-.022	.457	.002	1	.961	.978
V59	.198	.389	.258	1	.611	1.218
V60	.751	.910	.681	1	.409	2.119
ILLITERA	-.680	.431	2.495	1	.114	.506
V12	.775	.648	1.429	1	.232	2.170
Constant	-.192	.405	.224	1	.636	.825

a. Variable(s) entered on step 1: V49, V50, V51, V52, V53, V54, V55, V56, V57, V58, V59, VILLITERA, V12.

**C: Where Education Defined as Primary through to High**

**Model Summary**

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	266.295	.074	.100

**Classification Table<sup>a</sup>**

Observed			Predicted		Percentage Correct
			Presence of Improved Variety		
			.00	1.00	
Step 1	Presence of Improved Variety	.00	33	55	37.5
		1.00	24	95	79.8
	Overall Percentage				61.8

a. The cut value is .500

**Variables in the Equation**

		B	S.E.	Wald	df	Sig.	Exp(B)
Step a 1	V49	-.153	.329	.217	1	.641	.858
	V50	.146	.482	.092	1	.761	1.158
	V51	.410	.337	1.477	1	.224	1.506
	V52	.358	.360	.991	1	.320	1.431
	V53	-.445	.424	1.101	1	.294	.641
	V54	.132	.338	.153	1	.696	1.141
	V55	.081	.523	.024	1	.877	1.084
	V56	.788	.563	1.960	1	.162	2.198
	V57	-.673	.543	1.535	1	.215	.510
	V58	-.025	.457	.003	1	.956	.975
	V59	.208	.391	.282	1	.596	1.231
	V60	.750	.910	.678	1	.410	2.116
	V12	1.460	.744	3.847	1	.050	4.306
	V10	.649	.448	2.104	1	.147	1.914
	SECONDAR	.743	.495	2.250	1	.134	2.101
	Constant	-.869	.498	3.045	1	.081	.419

a. Variable(s) entered on step 1: V49, V50, V51, V52, V53, V54, V55, V56, V57, V58, V59, V60, V12, V10, SECONDAR.

## Appendix 10 – Determinants of total number of information sources

### Descriptive Statistics

	Mean	Std. Deviation	N
Total No. Sources	3.6250	2.3248	208
Cultivated Area	4.7861	3.6221	208

### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.251 <sup>a</sup>	.063	.059	2.2555

a. Predictors: (Constant), Cultivated Area

### ANOVA<sup>b</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	70.743	1	70.743	13.905	.000 <sup>a</sup>
	Residual	1048.007	206	5.087		
	Total	1118.750	207			

a. Predictors: (Constant), Cultivated Area

b. Dependent Variable: Total No. Sources

### Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	% Confidence Interval for	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	2.853	.260		10.990	.000	2.341	3.364
	Cultivated Area	.161	.043	.251	3.729	.000	.076	.247

a. Dependent Variable: Total No. Sources



## Appendix 11 – Market integration and colour preferences

### A: Red Seeded Preference

#### Descriptive Statistics

	Mean	Std. Deviation	N
Proportion Sold	32.3894%	29.6571%	208
Red Preference	.4663	.5001	208

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.091 <sup>a</sup>	.008	.003	29.6058%

a. Predictors: (Constant), Red Preference

#### ANOVA<sup>b</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1506.192	1	1506.192	1.718	.191 <sup>a</sup>
	Residual	180559.3	206	876.501		
	Total	182065.5	207			

a. Predictors: (Constant), Red Preference

b. Dependent Variable: Proportion Sold

#### Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	% Confidence Interval for	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	29.874	2.810		10.631	.000	24.334	35.414
	Red Preference	5.394	4.115	.091	1.311	.191	-2.719	13.507

a. Dependent Variable: Proportion Sold

### B: Tan Seeded Preference

#### Descriptive Statistics

	Mean	Std. Deviation	N
Proportion Sold	32.0628%	29.3516%	207
Tan Preference	.2367	.4261	207

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.115 <sup>a</sup>	.013	.008	29.2268%

a. Predictors: (Constant), Tan Preference

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2359.696	1	2359.696	2.762	.098 <sup>a</sup>
	Residual	175112.5	205	854.207		
	Total	177472.2	206			

a. Predictors: (Constant), Tan Preference

b. Dependent Variable: Proportion Sold

**Coefficients<sup>b</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	% Confidence Interval for	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	33.943	2.325		14.598	.000	29.359	38.527
	Tan Preference	-7.943	4.779	-.115	-1.662	.098	-17.365	1.479

a. Dependent Variable: Proportion Sold

**C: No Colour Preference**

**Descriptive Statistics**

	Mean	Std. Deviation	N
Proportion Sold	32.3894%	29.6571%	208
No Preference	.2981	.4585	208

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.012 <sup>a</sup>	.000	-.005	29.7268%

a. Predictors: (Constant), No Preference

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	26.338	1	26.338	.030	.863 <sup>a</sup>
	Residual	182039.1	206	883.685		
	Total	182065.5	207			

a. Predictors: (Constant), No Preference

b. Dependent Variable: Proportion Sold

**Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	% Confidence Interval for	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	32.158	2.460		13.071	.000	27.307	37.008
	No Preference	.778	4.506	.012	.173	.863	-8.106	9.662

a. Dependent Variable: Proportion Sold

**Appendix 12 – Determinants of access to extension advice**

**Model Summary**

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	279.975	.025	.033

**Classification Table<sup>a</sup>**

Observed		Predicted			
		I:Extension Staff		Percentage Correct	
		.00	1.00		
Step 1	I:Extension Staff	.00	76	32	70.4
		1.00	56	42	42.9
Overall Percentage					57.3

a. The cut value is .500

**Variables in the Equation**

Step		B	S.E.	Wald	df	Sig.	Exp(B)
1 <sup>a</sup>	AGE	.021	.009	4.983	1	.026	1.021
	Constant	-.987	.423	5.450	1	.020	.373

a. Variable(s) entered on step 1: AGE.

### Appendix 13 – Determinants of access to NGO (agricultural) advice

**Model Summary**

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	174.915	.091	.150

**Classification Table<sup>a</sup>**

Observed		Predicted		
		I:NGO		Percentage Correct
		.00	1.00	
Step 1	I:NGO	.00	1.00	
		166	5	97.1
		33	4	10.8
Overall Percentage				81.7

a. The cut value is .500

**Variables in the Equation**

Step		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 <sup>a</sup>	EDUCATIO	.748	.205	13.376	1	.000	2.113
	CULTIVAT	.091	.046	3.895	1	.048	1.095
	Constant	-3.897	.630	38.295	1	.000	.020

a. Variable(s) entered on step 1: EDUCATIO, CULTIVAT.

## Appendix 14 – Determinants of access to radio transmitted agricultural advice

### Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	242.591	.119	.163

### Classification Table<sup>a</sup>

Observed		Predicted			
		I:RADIO		Percentage Correct	
		.00	1.00		
Step 1	I:RADIO	.00	27	46	37.0
		1.00	12	122	91.0
Overall Percentage					72.0

a. The cut value is .500

### Variables in the Equation

Step		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 <sup>a</sup>	EDUCATIO	.482	.199	5.853	1	.016	1.620
	CULTIVAT	.126	.056	5.076	1	.024	1.135
	AGE	-.018	.010	2.902	1	.088	.982
	V6	.908	.440	4.247	1	.039	2.478
	Constant	-1.052	.672	2.446	1	.118	.349

a. Variable(s) entered on step 1: EDUCATIO, CULTIVAT, AGE, V6.

## Appendix 15 – Determinants of access to newspaper based agricultural advice

### Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	236.265	.114	.159

### Classification Table<sup>a</sup>

Observed		Predicted			
		I:Newspaper		Percentage Correct	
		.00	1.00		
Step 1	I:Newspaper	.00	130	11	92.2
		1.00	50	17	25.4
Overall Percentage					70.7

a. The cut value is .500

### Variables in the Equation

Step		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 <sup>a</sup>	EDUCATIO	.774	.185	17.405	1	.000	2.168
	CULTIVAT	.070	.042	2.790	1	.095	1.073
	Constant	-2.965	.518	32.726	1	.000	.052

a. Variable(s) entered on step 1: EDUCATIO, CULTIVAT.

## Appendix 16 – Programme for the workshop held on 24-25<sup>th</sup> February 2000

### Programme

#### *Day one*

Kimmins, F.M.	Introduction to the DFID CPP groundnut project and workshop.
Overfield, D and Kayoby, G.	Groundnut in the Teso system and planned activities.
Kimmins F.M., van der Merwe P. and Naidu R.A.	Groundnut rosette virus disease: a constraint to groundnut production in sub-Saharan Africa
van der Merwe, P	ICRISAT's breeding programme.
Busolo- Bulafo, C.	Breeding and new releases in Uganda.
Mangheni W.O	The Uganda Seed Project and groundnut seed production in Uganda.
<i>Obukui, R.</i>	<i>A farmer's perspectives of groundnut production in the Teso system. No written submission.</i>
Adupa, R.	Seed multiplication at the community and farm level: the AT (Uganda) Experience.
Opoi, M.	Seed multiplication at the community and farm level: Socadido.
Aben, C and Ekiyar V	Seed multiplication at the community and farm level: Extension services.
Jefferies, D.	On farm seed selection and trials:a biometrician's perspective.

#### *Day two*

Two working groups to discuss how projects could address the needs of groundnut farmers in the Teso System, implementing agencies and researchers.

Presentations from two groups and discussion

Round-up of workshop and production of recommendations

Selection of papers to be produced in proceedings



**Appendix 17 – List of participants at the workshop held 24 – 25<sup>th</sup> February 2000**

## Appendix 18 – Programme for the workshop held on 13<sup>th</sup> March 2002

### Programme

**a.m.**

**Welcome:** Dr Charles Busolo-Bulafu, Head of the Oil Seeds Programme, SAARI.

**Opening address:** Dr L. Serunjogi, Director of SAARI.

1. Department for International Development, Crop Protection Programme. Dr Frances Kimmins. Deputy Manager, CPP.
2. The socio-economic context of groundnut production in eastern Uganda. Dr Duncan Overfield, Dr Tim Chancellor and Bill Page. Presented by Dr Tim Chancellor, NRI, Leader of the Groundnut Rosette Management Project.
3. Status of the groundnut leaf miner (*Aproaerema modicella*) in Uganda. Dr George Epiery, Entomologist, SAARI.
4. Evaluation of short duration groundnut varieties for rosette resistance in Uganda. Dr Charles M. Busolo-Bulafu and Pascal W. Nalyongo, Oil Seeds Programme, SAARI.
5. Seed-borne virus diseases: a potential threat to groundnut crop improvement in African countries. Dr R.A. Naidu, Virologist, Department of Plant Pathology, University of Georgia, USA.
6. Participatory on-farm trials of candidate resistant groundnut varieties. Dr Duncan Overfield, Bill Page, Dr Charles Busolo-Bulafu and David Jeffries. Presented by Bill Page, Consultant Entomologist.
7. Presentations on working with groundnut farmer groups:
  - (a) SOCADIDO. Florence Agoe
  - (b) DAO, Kumi. Valdo Odeke
  - (c) DAO, Katakwi. B. Silver Ongom
  - (d) AT (Uganda) Robert Adupa
8. Commercialisation of rosette resistant groundnut varieties: IDEA's approach. Dr Fred Muhhuku, IDEA

**p.m.**

9. A farmer's view of the on farm trials. Stanley Akol.

### Discussion sessions:

### Promotion of outputs

10. Farmer-led multiplication of rosette resistant varieties. Dr Rita Laker Ojok, AT (Uganda)

### Training

11. Introduction of the groundnut manual. Bill Page.
12. Knowledge Transfer: The Scope for Further Knowledge dissemination through Farmer Field School and utility of the Groundnut production Manual. James Robert Okoth, IPPM - FFS Programme, Uganda.

### Future research needs

## Appendix 19 – List of participants at the workshop held on 13<sup>th</sup> March 2002

N <sup>o</sup>	Name	Organisation	Address	Contact
1	Dan Kisauzi	DFID - EA	Box 22130, Kampala	dfidnr@nida.or.ug
2	George Epiery	SAARI	P.O. Box Soroti	corsu@infocom.co.ug
3	Pascal Nalyongo	SAARI	P.O. Box Soroti	corsu@infocom.co.ug
4	Rayapati A. Naidu	University of West Georgia	Department of Plant Pathology, University of Georgia, USA	naidu@arches.uga.edu
5	Fred Muhhuku	ADC/IDEA		adc@starcom.co.ug
6	Nathon Nangoti	SAARI	P.O. Box Soroti	corsu@infocom.co.ug
7	Valdo Odeke	DAO, Kumi	Box 44, Kumi	077 463936
8	Frances Kimmins	NRInternational	Park House, Bradbourne Lane, Aylsford, Kent, ME20 6SN	F.Kimmins@nrint.co.uk
9	Tim Chancellor	NRI	Chatham Maritime, Chatham, Kent, ME4 4TB	t.c.b.chancellor@gre.ac.uk
10	Bill Page		6, Tinbridge Oast, Canterbury Road, Faversham, Kent ME13 9LJ	william@wpage78.freemove.co.uk
11	B. Silver Ongom	DAO, Katakwi	Private Bag, Katakwi	045 73004
12	Charles Busolo- Bulafu	SAARI	P.O. Box Soroti	andyp@imul.com 077 488727
13	Stanley Akol		Kachaboi	
14	Robert Adupa	AT (Uganda)	Box 8830, Kampala	aduparobert@yahoo.com 077 586220
15	Dennis Ebinu	FEW	Kalaki/Karamaido	
16	James Okoth	FAO	Box 363, Soroti	ffsug@africaonline.co.ug 077 442773
17	Florence Agoe	SOCADIDO	Box 641, Soroti	077 557635
18	Lastus K. Serunjogi	Ag Director SAARI	P.O. Box Soroti	corsu@infocom.co.ug
19	Everlyne Atukoit	SAARI	P.O. Box Soroti	corsu@infocom.co.ug
20	Eric Manyasa	ICRISAT	Box 39063, Nairobi	E.Manyasa@cgiar.org
21	S. Sreenivasaprasad	HRI, UK	Wellesbourne, Warwicks, CV35 9EF	ss.prasad@hri.ac.uk
22	Prof Obilana	ICRISAT	Box 39063, Nairobi	a.obilana@cgiar.org
23	Dr B. Akello	SAARI	P.O. Box Soroti	corsu@infocom.co.ug
24	Rita Laker-Ojok	AT (Uganda)	Box 8830, Kampala	rojok@imul.com

**Appendix 20:** Yield performance (kg/ha dry pods) for 1<sup>st</sup> seasons 1999-2001 and 2<sup>nd</sup> season, 2001, at 6 locations

**Table 1:** Yield performance (kg/ha dry pods) rosette count for 1<sup>st</sup> season, 1999, at 6 locations

Variety	SAARI		Kumi		Kuju		Nakabango		Ngetta		Aduku		Mean	Mean
	Yield	Rosette Count	Yield	Rosette Count	Yield	Rosette Count	Yield	Rosette Count	Yield	Rosette Count	Yield	Rosette Count	Yield	Rosette Count
93530	2710	0.0	2568	0.0	3000	0.0	2280	0.0	3250	0.2	2380	0.0	2698	0
93535	2800	0.0	2453	0.0	2980	0.0	2100	0.0	2550	0.5	2500	0.0	2564	0
93524	2515	1.0	2410	1.0	2910	1.0	2000	1.0	2750	3.2	2250	0.0	2473	1.2
94581	1997	2.0	2050	1.0	2670	1.0	2215	1.0	1.750	0.6	2130	0.0	2135	1
99540	1860	10.7	1735	11.0	1950	9.0	1847	8.0	3400	0.0	2500	0.0	2215	6.45
12991	2885	0.0	2570	0.0	2740	0.0	2335	1.0	3000	0.0	2130	0.0	2610	0.1
R. B	1790	30	1700	52	1953	57	1630	67.0	1750	53.0	1850	43.0	1779	50.3
94584	2857	1.0	2737	1.0	2875	2.0	2110	3.1	2100	0.0	2000	0.0	2447	1.2
93557	2334	2.0	2230	2.0	2346	2.0	2160	4.2	2000	1.0	2380	1.0	2242	2
Sere. II	2900	0.0	2800	0.0	3015	0.0	2310	0.0	2780	0.0	2380	0.0	2698	0

**Table 2:** Yield performance (kg/ha dry pods) for 1<sup>st</sup> season, 2000, at 6 locations

Variety	SAARI		Kumi		Kuju		Nakabango		Ngetta		Aduku		Mean	Mean
	Yield	Rosette Count	Yield	Rosette Count	Yield	Rosette Count	Yield	Rosette Count	Yield	Rosette Count	Yield	Rosette Count	Yield	Rosette Count
93530	2800	0.5	2525	0.0	2500	0.8	-	-	2375	0.0	3375	1.3	2262.5	0.43
93535	2600	0.2	1900	1.0	2475	3.2	-	-	2500	0.0	1250	1.5	1787.5	0.98
93524	2510	0.0	2125	0.75	2800	1.8	-	-	2250	0.0	2125	2.0	2018.3	0.758
94581	2010	0.2	2000	0.0	2400	0.8	-	-	2125	0.8	2200	1.8	1789.2	0.6
99540	1890	3.2	2475	6.7	2725	1.8	-	-	2500	2.0	2500	7.2	2015	3.483
12991	2803	0.2	2300	5.25	2825	3.7	-	-	2125	0.0	2530	0.8	2097.2	1.658
R. B	1690	25.0	1100	105.25	1325	71.0	-	-	1850	20.0	1350	166.8	1219.2	64.675
94584	2769	12.8	1800	0.0	2550	1.8	-	-	2000	0.0	1550	1.8	1778.2	2.73
93557	2400	0.5	1925	4.5	1950	1.8	-	-	2375	1.3	1250	2.2	1650	1.716
Sere. II	2880	0.0	2300	0.0	3200	1.0	-	-	2375	0.0	1750	1.0	1652	0.3

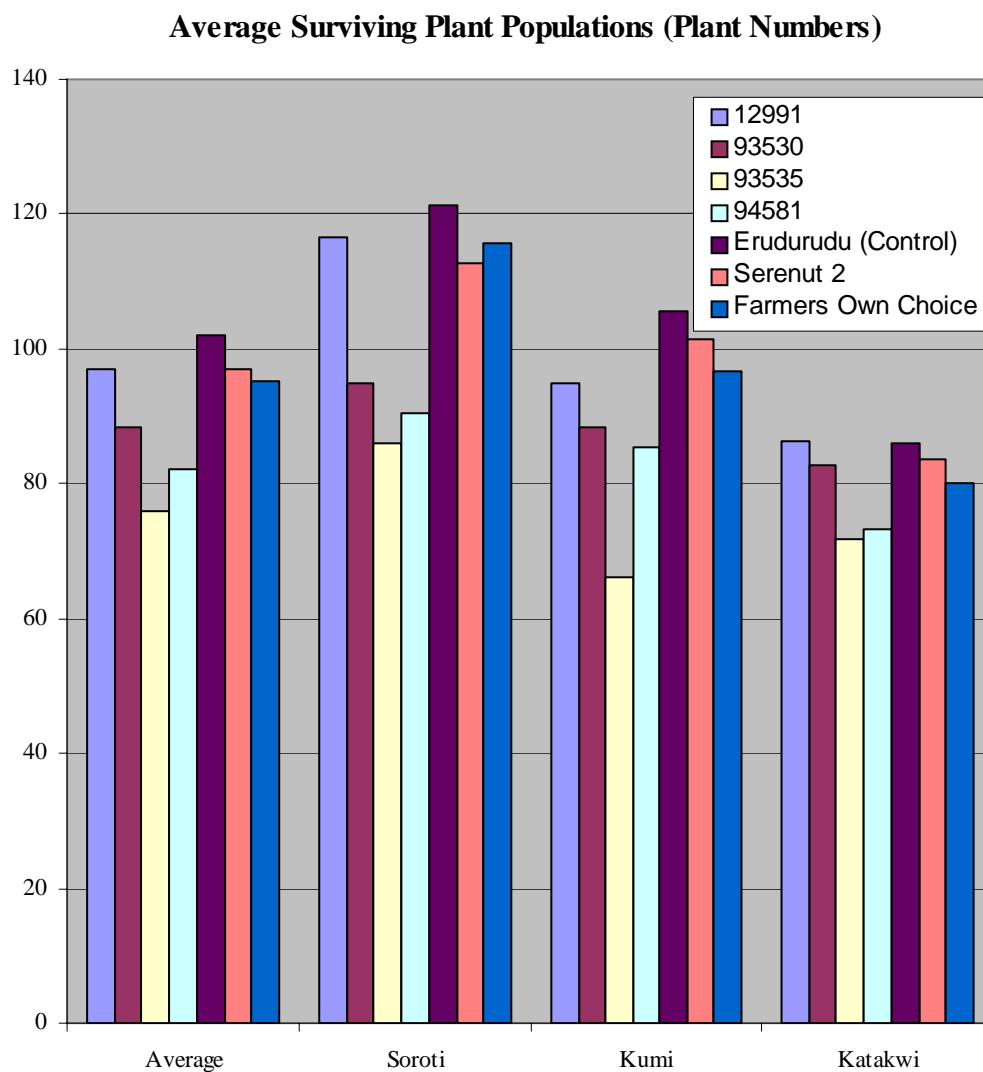
**Table 3:** Yield performance (kg/ha dry pods) for 2<sup>nd</sup> season, 2001, at 6 locations

Variety	SAARI		Kumi		Kuju		Nakabango		Ngetta		Aduku		Mean	Mean
	Yield	Rosette Count	Yield	Rosette Count	Yield	Rosette Count	Yield	Rosette Count	Yield	Rosette Count	Yield	Rosette Count	Yield	Rosette Count
93530	2300	0.5	-	-	1900	0.9	2275	1.7	2735	1.5	-	-	1535	0.42
93535	1750	0.2	-	-	1450	3.0	2022	1.9	1255	1.7	-	-	1079.5	1.13
93524	2340	0.0	-	-	1800	1.9	1981	3.0	2130	2.1	-	-	1375	1.2
94581	2880	0.2	-	-	1400	0.9	2100	3.1	2205	1.9	-	-	1430.8	1.02
99540	3025	3.2	-	-	1730	3.0	2401	6.9	2505	7.3	-	-	1610.2	3.4
12991	2995	1.1	-	-	2000	3.5	2490	1.5	2405	1.0	-	-	1648.8	1.18
R.B	1125	29.0	-	-	1300	70.0	1200	62	1350	168.9	-	-	1658	54.98
94584	2300	13.0	-	-	1560	1.9	1460	2.0	1557	1.9	-	-	1146.2	3.1
93557	1730	0.7	-	-	1400	1.9	1320	3.1	1256	2.2	-	-	951	1.32
Sere. II	2998	0.0	-	-	2200	1.0	2550	1.6	1755	1.3	-	-	1583.8	0.65



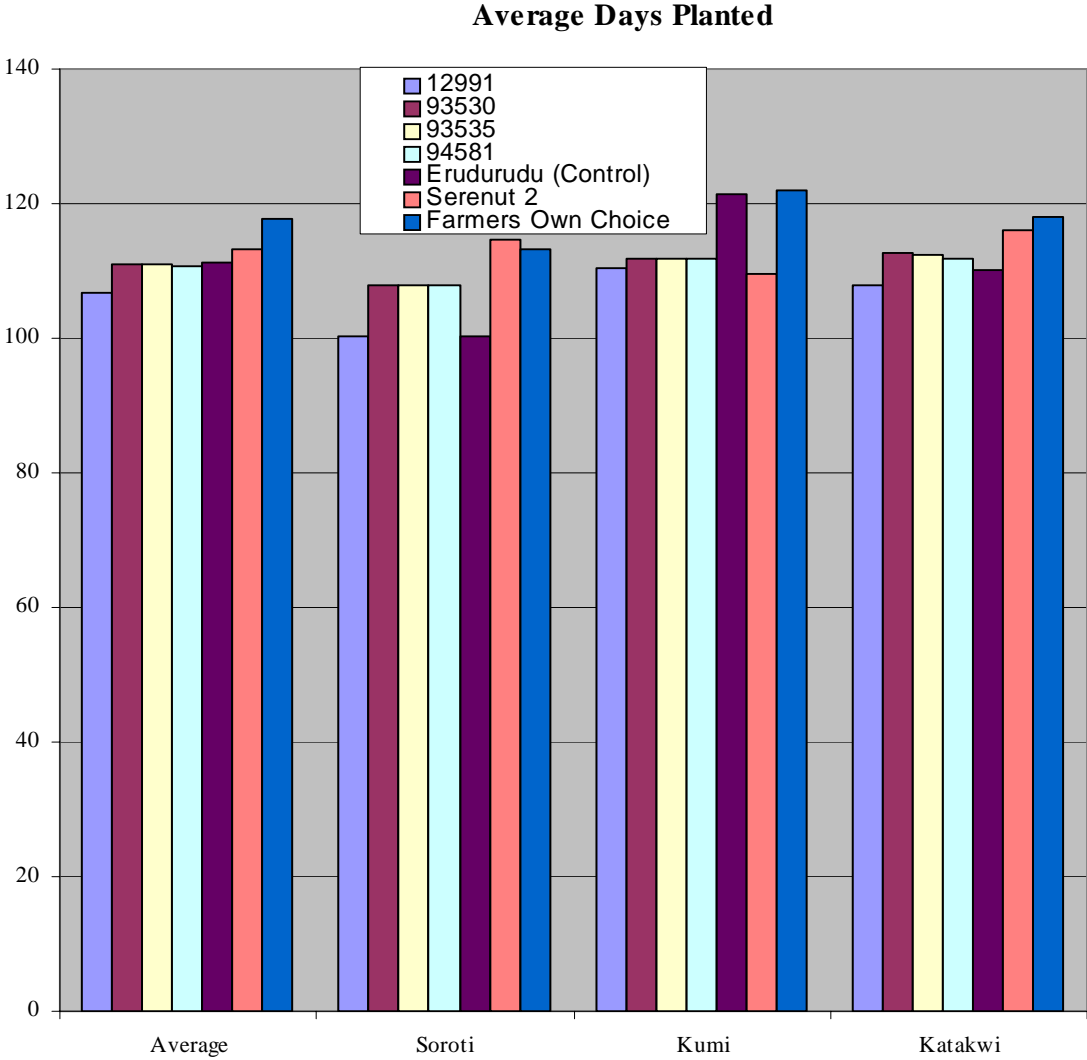
## Appendix 22 – Average surviving plant populations

Surviving plant populations are out of 150 (3 rows at 50 each)



Variety	Mean (plant no.)	Standard Deviation	Confidence Interval (95%)
<b>12991</b>	98	24	91-106
<b>93530</b>	89	27	81-97
<b>93535</b>	77	29	69-86
<b>94581</b>	82	27	74-90
<b>Erudurudu (Control)</b>	102	30	93-111
<b>Serenut 2</b>	99	28	91-107
<b>Farmers Own Choice</b>	96	33	86-106

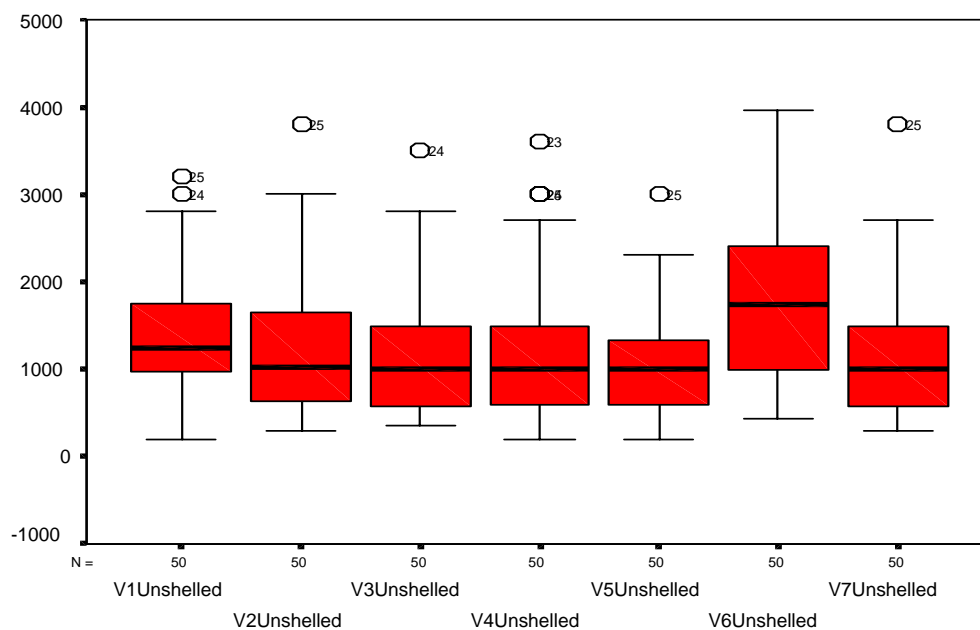
**Appendix 23 – Average days planted**



Variety	Mean (days)	Standard Deviation	Confidence Interval (95%)
<b>12991</b>	106	12	103-110
<b>93530</b>	111	9	108-113
<b>93535</b>	111	9	108-113
<b>94581</b>	111	11	108-113
<b>Erudurudu (Control)</b>	111	13	107-114
<b>Serenut 2</b>	113	12	110-117
<b>Farmers Own Choice</b>	118	12	114-121



## Appendix 24 – Unshelled yield statistics and box plots



Where V1=12991

V2=93530

V3=93535

V4=94581

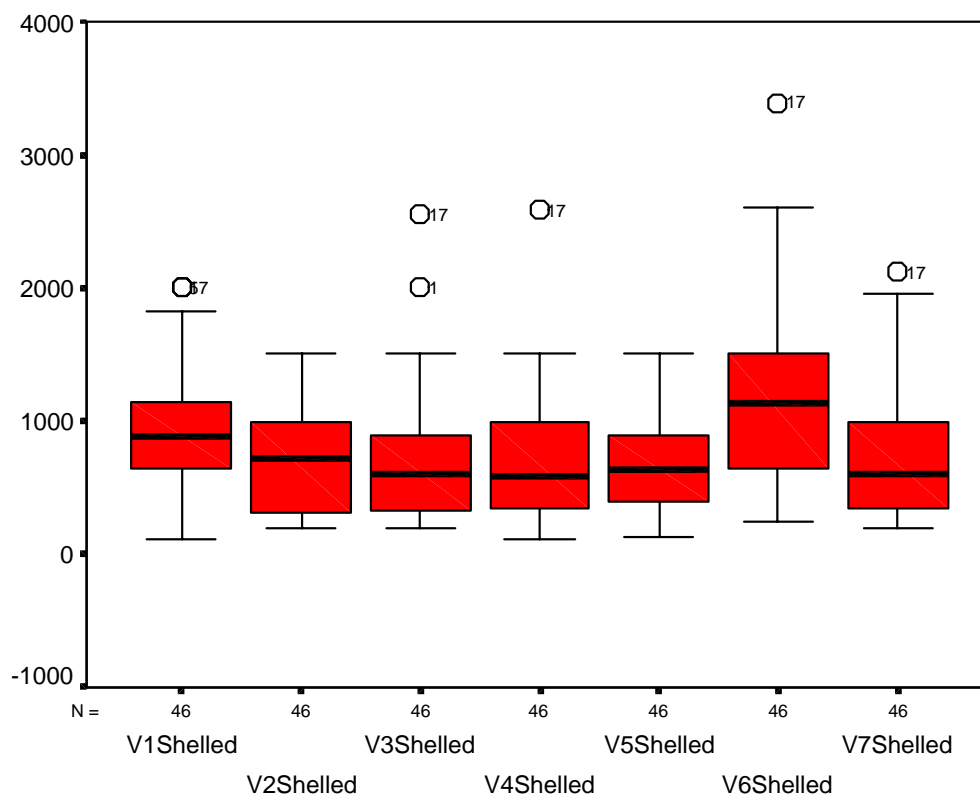
V5=Erudurudu (Control)

V6=Serenut 2

V7=Farmers Own Choice

Variety	Mean (g/plot)	Standard Deviation (g)	Confidence Interval (95%)
<b>12991</b>	1414	729	1206-1620
<b>93530</b>	1254	745	1042-1466
<b>93535</b>	1175	717	971-1379
<b>94581</b>	1179	750	966-1392
<b>Erudurudu (Control)</b>	1056	567	894-1217
<b>Serenut 2</b>	1727	868	1480-1973
<b>Farmers Own Choice</b>	1189	744	978-1401

## Appendix 25 - Shelled yield statistics and box plots



Where V1=12991

V2=93530

V3=93535

V4=94581

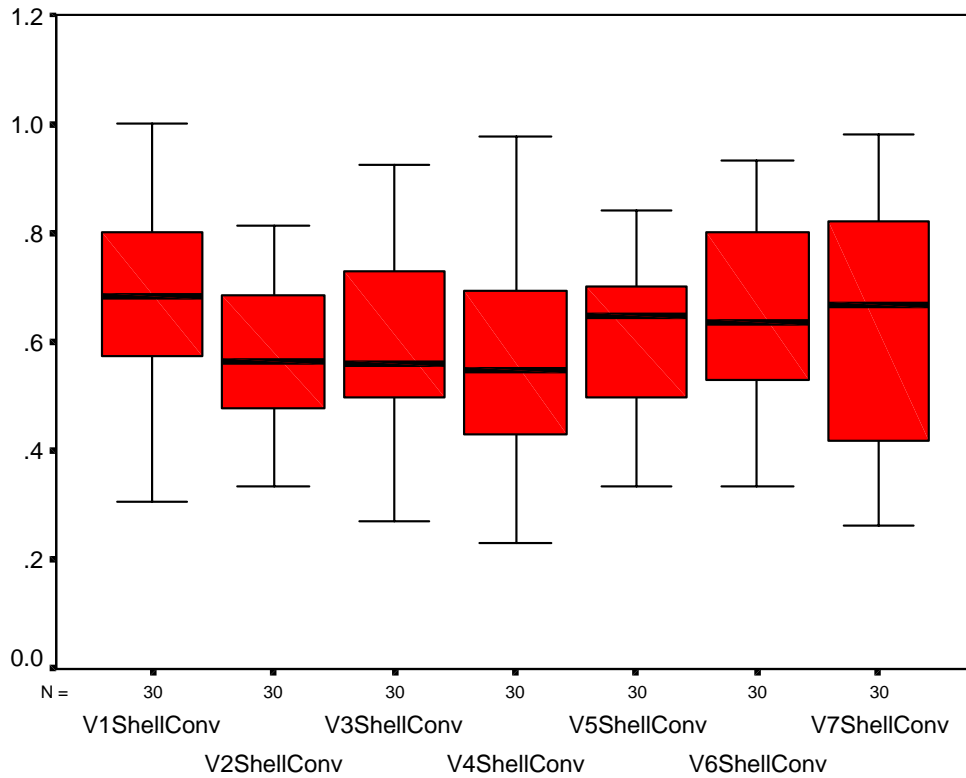
V5=Erudurudu (Control)

V6=Serenut 2

V7=Farmers Own Choice

Variety	Mean (g/plot)	Standard Deviation (g)	Confidence Interval (95%)
<b>12991</b>	927	454	792-1062
<b>93530</b>	701	359	595-808
<b>93535</b>	701	472	561-841
<b>94581</b>	699	467	560-838
<b>Erudurudu (Control)</b>	649	314	556-742
<b>Serenut 2</b>	1130	643	939-1320
<b>Farmers Own Choice</b>	753	485	609-897

**Appendix 26 – Shelling conversion ratios**



Where V1=12991

V2=93530

V3=93535

V4=94581

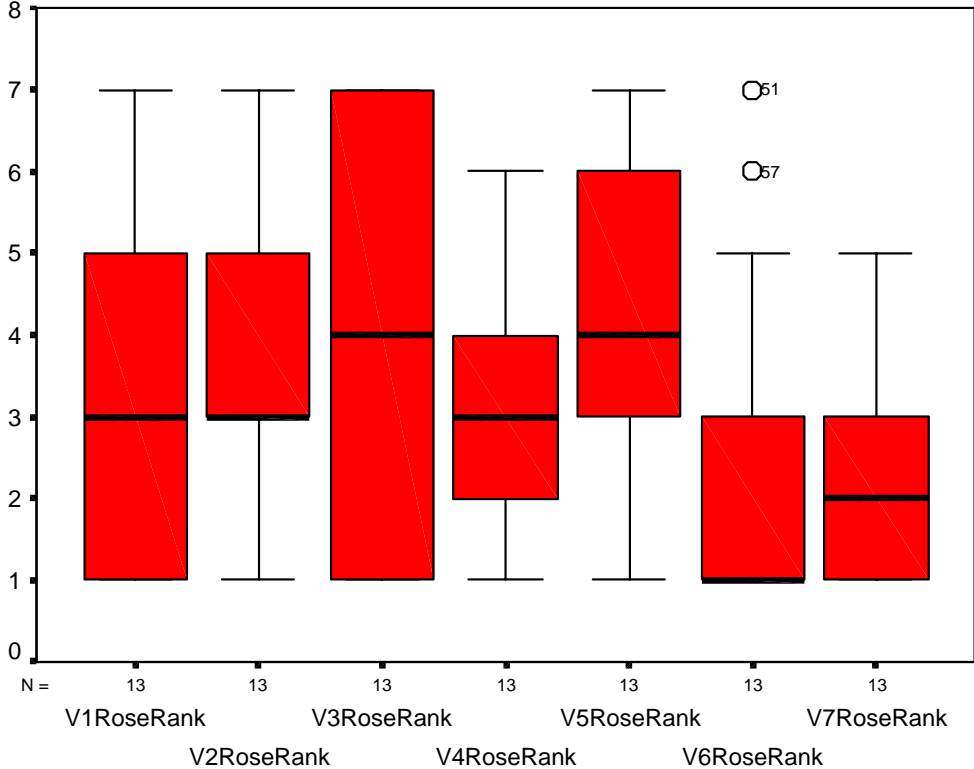
V5=Erudurudu (Control)

V6=Serenut 2

V7=Farmers Own Choice

Variety	Mean (ratio)	Standard Deviation	Confidence Interval (95%)
<b>12991</b>	.665	.162	.601-.729
<b>93530</b>	.5703	.1426	.5170-.6236
<b>93535</b>	.587	.169	.524-.650
<b>94581</b>	.5808	.1827	.5126-.6490
<b>Erudurudu (Control)</b>	.6232	.1319	.5739-.6724
<b>Serenut 2</b>	.638	.176	.572-.704
<b>Farmers Own Choice</b>	.6145	.2031	.5386-.6903

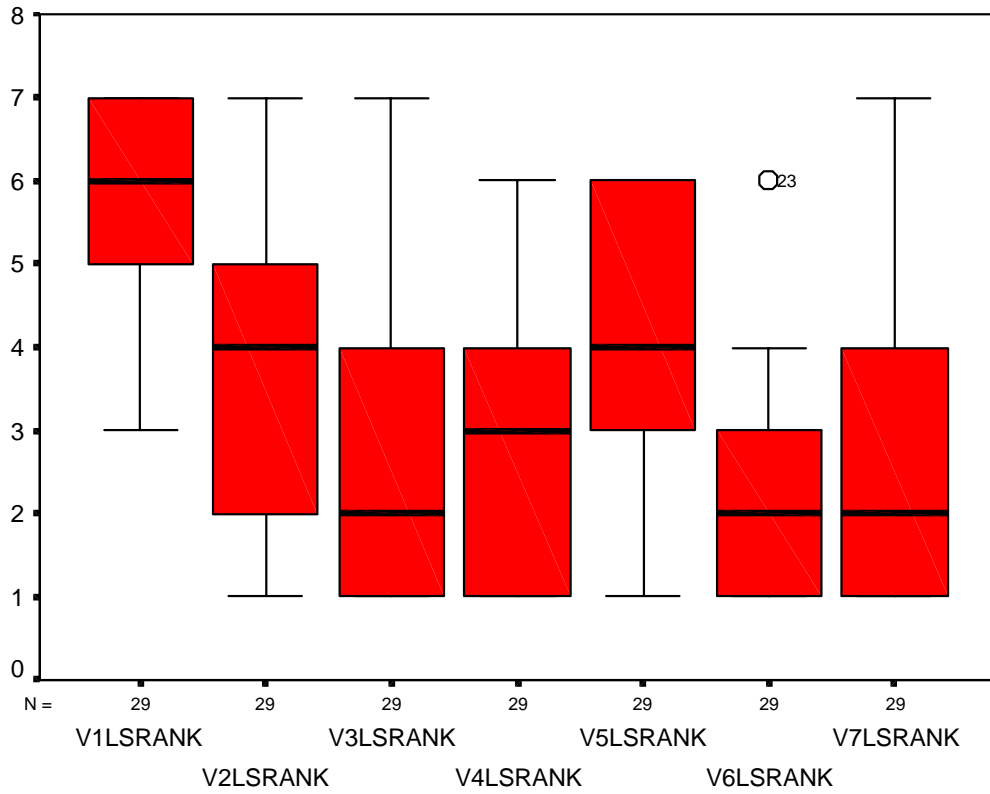
**Appendix 27 – Rosette and leaf spot rankings – statistics and box plots**



Where V1=12991

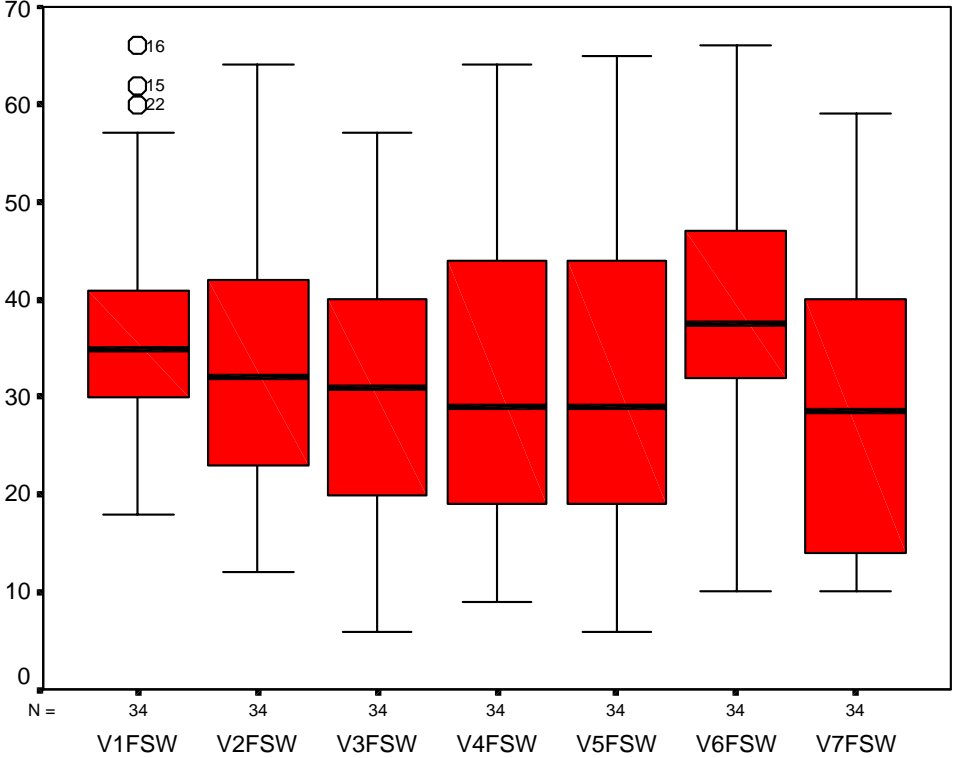
- V2=93530
- V3=93535
- V4=94581
- V5=Erudurudu (Control)
- V6=Serenut 2
- V7=Farmers Own Choice

Variety	Mean (rank)	Standard Deviation	Confidence Interval (95%)
<b>12991</b>	3.2	2.2	1.8-4.5
<b>93530</b>	3.8	1.9	2.6-4.9
<b>93535</b>	3.9	2.7	2.3-5.6
<b>94581</b>	3.4	1.8	2.3-4.5
<b>Erudurudu (Control)</b>	4.2	2.1	2.9-5.4
<b>Serenut 2</b>	2.4	2.2	1.1-3.7
<b>Farmers Own Choice</b>	2.2	1.3	1.4-3.0



Variety	Mean (rank)	Standard Deviation	Confidence Interval (95%)
<b>12991</b>	5.9	1.1	5.5-6.3
<b>93530</b>	3.9	1.9	3.2-4.7
<b>93535</b>	2.8	2.1	2.0-3.6
<b>94581</b>	2.8	1.5	2.2-3.4
<b>Erudurudu (Control)</b>	4.0	1.8	3.3-4.7
<b>Serenut 2</b>	2.2	1.2	1.8-2.7
<b>Farmers Own Choice</b>	2.8	2.0	2.1-3.6

**Appendix 28 – Farmer score statistics and box plots**



Where V1=12991

- V2=93530
- V3=93535
- V4=94581
- V5=Erudurudu (Control)
- V6=Serenut 2
- V7=Farmers Own Choice

Variety	Mean (weighted score)	Standard Deviation	Confidence Interval (95%)
<b>12991</b>	37.5	12.3	33.3-41.8
<b>93530</b>	33.8	13.6	29.0-38.5
<b>93535</b>	31.7	14.0	26.8-36.5
<b>94581</b>	31.7	15.8	26.2-37.3
<b>Erudurudu (Control)</b>	32.9	17.4	26.8-39.0
<b>Serenut 2</b>	40.2	14.8	35.1-45.9
<b>Farmers Own Choice</b>	29.8	16.2	24.2-35.5

## Appendix 29 – Form used for individual farmer assessments

### Individual Farmer Assessment Form/Guidance Notes

Farmer No: \_\_\_\_\_

Name of Farmer: \_\_\_\_\_

Name of assessor \_\_\_\_\_

Organisation \_\_\_\_\_

District/County/Subcounty/Parish/Village \_\_\_\_\_

Date of Assessment \_\_\_\_\_

#### Guidance Notes

1. Please complete the table on the next page for each individual farmer.
2. Start by asking what characteristics are important in assessing varieties and mark yes or no in the appropriate box.
3. Then ask then to rate the importance of the characteristic on a scale of 0-2. Where 0=not important, 1= some importance and 2=important. Go through and check the scores with the farmer.
4. Ask for the reasons behind the score and note in the appropriate box
5. Add in any missing characteristics mentioned by farmers that are not in the list and again ask for the weighting (0-2) and reason behind the score
7. Then going down the form for each variety (V1-V7) score each characteristic on a scale of 0-2. Where 0=poor performance, 1=average/adequate performance, 2=good/well above average performance. Check each score with the farmer and that the correct variety has been assessed in relation to the field plots
8. Make sure that no characteristics have been missed for any variety and that the farmer believes a proper description and scoring of each variety has been given.
9. Total the scores for each variety.
10. Please pass completed forms to Charles Busolo-Bulafu for processing and analysis together with trial data form (keep both together for the farmer).





Characteristic	Farmer Identified (Y or N)	Farmer Weighting (0-2)	Weighting Reason	V1	V2	V3	V4	V5	V6	V7
Yield (0-2)										
Taste (0-2)										
Colour (0-2)										
Rosette Resistance (0-2)										
Leaf Spot Resistance (0-2)										
Leaf Miner Resistance (0-2)										
Length to Maturity (0-2)										
Seed size (0-2)										
Marketability (0-2)										
Cookability (0-2)										
Ease of Shelling (0-2)										
Ease of Harvesting (0-2)										
Drought resistance (0-2)										
Storability (0-2)										
Germination (0-2)										
Oil content (0-2)										
Drying Performance (0- 2)										
Seed coat characteristic (0-2)										
<b>Total Score</b>										

## Appendix 30 – Form used for group assessments

### Group Farmer Assessment Form and Summary Sheet/Guidance Notes

Name of District: \_\_\_\_\_

Name of assessors \_\_\_\_\_

Organisations \_\_\_\_\_

Date of Assessment \_\_\_\_\_

Female or male group \_\_\_\_\_

#### **Guidance Notes**

1. Please complete the tables on the next 2 pages for each district grouping (with two groups per District - one of men; one of women).
2. Write the variety numbers of all the varieties on three different coloured manila papers - one for each of the following: poor performance; average/adequate performance; good performance. Get the farmers to vote on each variety (making sure they only vote once) and record the results in table 1 after agreement on the final scores and votes. Present the total weighted scores to the farmers to see if they think it is a true reflection of the situation. Make any further notes (concerning disagreement or other) under table 1
3. For each variety get farmers to explain why they voted in that way (i.e. to identify the characteristics associated with each). List the characteristics for each variety (1 manila sheet per variety).
4. For each characteristic get farmers to put counters (or seeds or other material) against the importance of each characteristic. Limit the number of counters given to each farmer to one less than the total number of identified characteristics for each variety (this will have to be done for each variety/sheet).
5. Get farmers to discuss the final piles of counters to make sure it is an accurate reflection of their opinions on the determinants of varietal performance.
6. Record the results in table 2 (for ease try to list all characteristics in the same order). Write in any further details concerning this (noting any major disagreements) under table 2.

Table 1 - Summary of Overall Varietal Rankings (total votes by variety and performance)

Variety Number	Score 2 - good performance (weight=2) (Total votes)	Score 1 - average or adequate performance (weight=1) (Total votes)	Score 0 - poor performance (weight=0) (Total votes)	Total Weighted Score (Score in each column X weight and all three added together)
1				
2				
3				
4				
5				
6				
7				

**Any further notes on this exercise (disagreements within the group etc.)**

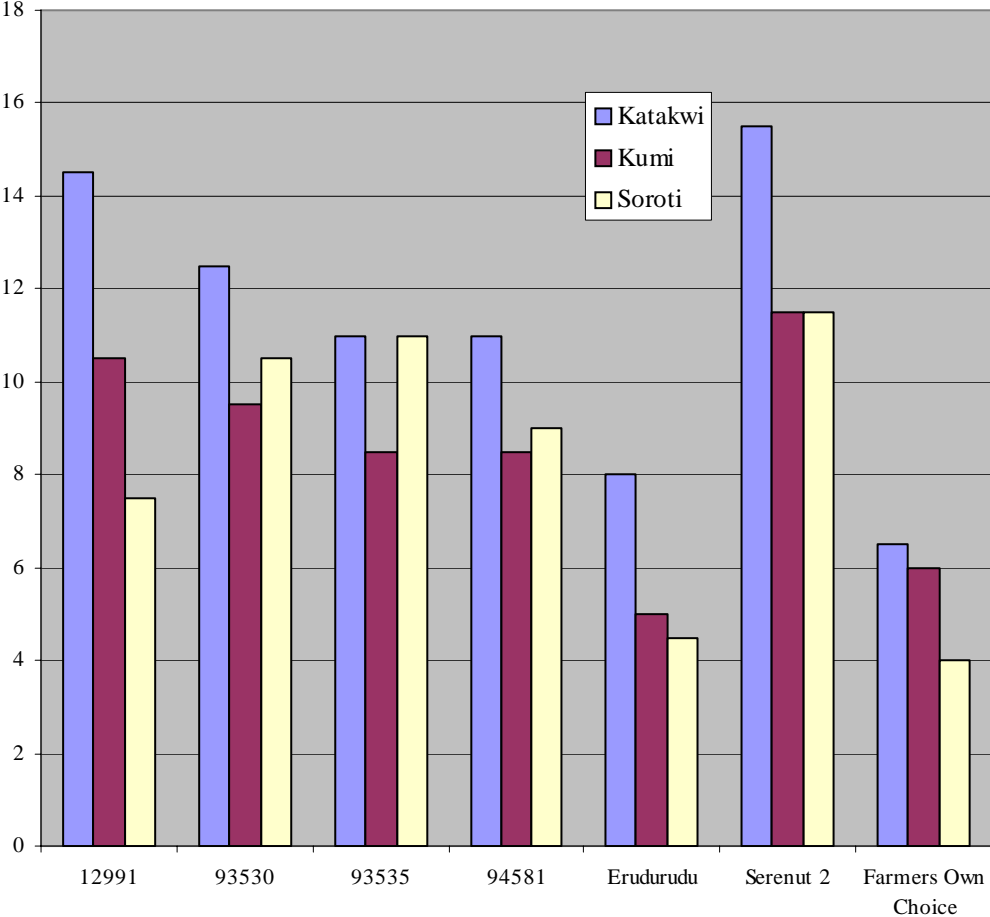
Table 2 - Summary of importance of characteristics by variety

Characteristic (to be written in after identification by farmers)	V1 Counters	V2 Counters	V3 Counters	V4 Counters	V5 Counters	V6 Counters	V7 Counters
<b>Total Score</b>							

**Any further notes on this exercise (including significant disagreements)**

**Appendix 31 – Group assessments by district and gender**

**Average Weighted Scores by District  
- Group Assessments**



**Appendix 32** Group assessments: average farmer-weighted scores disaggregated by gender

**Average Farmer Weighted Scores -  
Disaggregated by Gender  
- Group Assessments**

