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APPENDICES

APPENDIX I: Soil Profile Descriptions

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(A). Mugabi Dambo (Central Zone)

(A). Mugabi Dambo (Central Zone)

Date:	16/08/1998
Location:	At the centre of the Dambo near the source of Lutembwe River
Land Use:	Vegetable gardens
Depth to Ground water table: 1.5 m	
Drainage:	Very poorly drained
Parent material:	Granite
Slope:	0-0.5 % (very flat)
Vegetation:	Hyparhenia grass surrounded by Miombo woodland trees.

Soil profile characteristics

0-30 cm Presence of dry organic matter in the top layer. Dark greyish colour (10YR3/1) when dry and black (10YR2/1) when moist. Small roots present; slightly soapy feel. Sandy loam.

30-60 cm Grey colour (10YR5/1) when dry and very dark greyish brown colur when moist (10YR3/2). Absence of roots. Cracks ramifying throughout the horizon. Dry Sandy Clay Loam soil.

60-100 cm Dark yellow brownish colour when moist (10YR4/6) with red mottles indicating periodic changes of water table. Very sticky when wet; hard when dry; few roots but some up to 3mm in diameter.

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(B) NOOLE Dambo (Central zone)

Date:	20/06/1998
Soil Name:	Eutric vertisol (FAO)
	Paleustollic pellusterts (USDA)
Location:	200m West of Mweemba farm at 1300m aMSL.
Slope :	1 - 4%
Land Use:	Natural grazing land
Parent material:	Alluvial
Depth to Ground water table:	2.14m (reading from piezometer)
Erosion Evidence:	None
Soil drainage class:	Very poorly drained.

Brief Description of Profile:

Very poorly drained,silt clay top texture and control section being clay texture. The colours being uniform, at top when moist (10YR3/1) very dark gray and the bottom colour (10YR4/1) dark gray.

Soil profile characteristics

0-35 cm (Ap) Very dark gray (10YR3/1) moist and dark gray (10YR3/1) dry, clay; strong fine to medium columns; very stick, very plastic, very firm moist, very hard dry; very fine pores, common fine, few medium and coarse roots, diffuse wavy boundary. PH=5. Cracks extending upwards to top of horizon.-35 cm (Ap); Very dark gray (10YR3/1) moist and dark gray (10YR3/1) dry, clay; strong fine to medium columns; very stick, very plastic, very firm moist, very hard dry; very

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fine pores, common fine, few medium and coarse roots, diffuse wavy boundary. PH=5. Cracks extending upwards to top of horizon.-35 cm (Ap); Very dark gray (10YR3/1) moist and dark gray (10YR3/1) dry, clay; strong fine to medium columns; very stick, very plastic, very firm moist, very hard dry; very fine pores, common fine, few medium and coarse roots, diffuse wavy boundary. PH=5. Cracks extending upwards to top of horizon.

35-100+cm Dark gray(10YR4/1)when moist and gray (10YR5/1)when dry. Extremely firm moist. Clay; strong medium prisms, very sticky, very plastic. Common faint mottles observed throughout the profile. 1cm wide cracks observed running vertically.

(C) (Fikolwa Seepage Zone)

Date : 21/08/1998
Drainage: moderately well drained
Land Use: Cultivated vegetables and grass covered in most parts of Dambo
Slope: 0-<1%
Micro-relief: Flat

Brief Description:

Evidence of four sub-divisions in the profile with oxidation and reduction in the centre of the profile due to the existence of a high or perched water table due to gleying as one goes down the profile.

Soil profile characteristics

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0 - 20 cm	Dark brown sandy loam soil (7.5YR3/2) moist and grayish (7.5YR6/2) dry. Weak medium subangular block. Organic matter with lots of roots. Non sticky, non plastic, friable.
20 - 40+ cm	Greyish pinkish (7.5YR4/2) moist sandy loam with cracks up to 45 cm and. Presence of termite holes observed.)
40 - 80cm	Sandy loam soil gray whitish brown colour (10YR5/2) moist and pinkish gray (7.5YR7/2) dry. Coarse sand massive, non-sticky, non-plastic, loose moist, hard dry with common very fine roots.
80-100+ cm	Dark greyish colour(7.5YR7/3). Coarse sand, Presence of mottles and laterite/stones. Evidence of water table at 1.2 - 1.7m

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APPENDIX II: Socio-Economics Baseline Study Questionnaire

Village Profile

1. When was the village established?
2. What ethnic groups exist in the village?
3. Population/households
4. Means for the village livelihood
5. Existing infra-structure:
    - roads
    - schools
    - clinic
    - market
    - storage sheds

Socio-Economis

1. What is the Dambo name you are using?
2. Number of households utilizing Dambos?
3. When did you start growing crops in Dambos?
4. How have been watering your crops?
5. What is the size of your Dambo garden?
6. What is the total land area of the Dambo under utilization?
7. How have people utilized Dambo?
    - past uses.
    - present uses.
8. When was it used for crop production?
9. From whom was the Dambo technology learnt?
10. What problems do you face in utilizing the Dambo?

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11. How do you overcome some of the problems?
12. When do you carry out various operations in the Dambo?
13. How do those activities interfer with your upland activities?
14. What type of individuals utilize Dambos?
15. How many of those people are women?
16. What roles do men and women play in Dambo garden operations?
17. Who sells Dambo produce?
18. How do you use income raised from Dambo produce?
19. Who has control over the raised income?
20. Who keeps the money raised from Dambo produce?
21. What is the availabilty of food from Dambos over a year's season?

Dambo Access

1. Who has power of ownership of a Dambo garden in a household?
2. Who gives land in a Dambo? What is the process?
3. Are there any taboos or traditions related to Dambos?
4. What are the trends in Dambo use?
5. Are Dambo activities compatible with each other?

Agronomic Practices

1. Outline the main crops grown in Dambos
2. At what time of the year is the Dambo utlized most and why?
3. What are the existing cultural practices?
    - land prepartion
    - planting
    - irrigating
    - weeding

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- fertilizing
- harvesting
- crop rotation

4. What methods are used to improve soil fertility?
5. What problems are associated with each crop listed?
    - water requirements
    - pests and diseases
    - nutrient deficiencies
    - yield
    - labour

6. Do you own and use a water lifting device?
7. How do you compare it with using conventional ways of irrigating?

Crop Utilization

1. How is the produce utilized?
2. Do farmers preserve any of the crops grown? if yes - how?
3. How has the Dambo contributed to the availability of food in the household?

Dambo Use For Livestock

1. What animals are used in the Dambo for grazing?
    - domesticated
    - wild
2. Are there any constraints in Dambo use for livestock?
3. Do you manage Dambos for the following;
    - fodder production?

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- rotational grazing?

Marketing

1. How do you market your produce?
2. Are there any marketing problems?
3. Where is the produce from Dambos sold?
4. What are the distances to markets?
5. What are the prices like over the season?
6. Do prices fluctuate? if so what are the causes of this fluctuation?
7. What are the constraints/problems encountered in sale of produce?

Quality Of Dambos?

1. What are the soil types in Dambos?
2. What slopes obtain and is there any erosion?
3. Vegatation type found and its usefulness
4. Water holding capacities of soils?
5. What do farmers use to improve soil fertility
    - crop residue?
    - animal manure?
    - chemical fertilizer?
6. Are there any signs of deforestation in surrounding catchment?