

River Basins

Basin No	Name of Basin	Catchment Area Sq. Km.	Basin No.	Name of Basin	Catchment Area Sq. Km
1.	Kelani Ganga	2278	53.	Miyangolla Ela	225
2.	Bolgoda Lake	374	54.	Maduru Oya	1541
3.	Kaluganga	2688	55.	Pullianpotha Aru	52
4.	Bentota Ganga	6622	56.	Kirimechi Odai	77
5.	Madu Ganga	59	57.	Bodigoda Aru	164
6.	Madampe Lake	90	58.	Mandan Aru	13
7.	Telwatte Ganga	51	59.	Makarachchi Aru	37
8.	Ratgama Lake	10	60.	Mahaweli Ganga	10327
9.	Gin Ganga	922	61.	Kantalai Basin Per Ara	445
10.	Koggala Lake	64	62.	Panna Oya	69
11.	Polwatta Ganga	233	63.	Palampotta Aru	143
12.	Nilwala Ganga	960	64.	Pankulam Ara	382
13.	Sinimodara Oya	38	65.	Kanchikamban Aru	205
14.	Kirama Oya	223	66.	Palakutti Aru	20
15.	Rekawa Oya	755	67.	Yan Oya	1520
16.	Uruhokke Oya	348	68.	Mee Oya	90
17.	Kachigala Ara	220	69.	Ma Oya	1024
18.	Walawe Ganga	2442	70.	Churian Aru	74
19.	Karagan Oya	58	71.	Chavar Aru	31
20.	Malala Oya	399	72.	Palladi Aru	61
21.	Embilikala Oya	59	73.	Nay Ara	187
22.	Kirindi Oya	1165	74.	Kodalikallu Aru	74
23.	Bambawe Ara	79	75.	Per Ara	374
24.	Mahasilawa Oya	38	76.	Pali Aru	84
25.	Butawa Oya	38	77.	Muruthapilly Aru	41
26.	Menik Ganga	86	78.	Thoravit Aru	90
27.	Katupila Aru	131	79.	Piramenthal Aru	82
28.	Kuranda Ara	46	80.	Nethali Aru	120
29.	Namadagas Ara	46	81.	Kanakarayan Aru	986
30.	Karambe Ara	1218	82.	Kalawalappu Aru	56
31.	Kumbukkan Oya	92	83.	Akkarayan Aru	192
32.	Bagura Oya	15	84.	Mendekal Aru	297
33.	Girikula Oya	51	85.	Pallarayan Kadu	159
34.	Helawa Ara	484	86.	Pali Aru	451
35.	Wila Ara	604	87.	Chappi Aru	66
36.	Heda Oya	422	88.	Parangi Aru	832
37.	Karanda Oya	51	89.	Nay Aru	560
38.	Simena Ara	22	90.	Malvatu Oya	3246
39.	Tandiadi Aru	56	91.	Kal Ara	210
40.	Kangikadichi Ara	35	92.	Moderagam Ara	932
41.	Rutus Kulam	184	93.	Kala Oya	2772
42.	Pannel Oya	115	94.	Moongil Aru	44
43.	Ambalam Oya	1792	95.	Mi Oya	1516
44.	Gal Oya	522	96.	Madurankuli Aru	62
45.	Andella Oya	9	97.	Kalagamuwa Oya	151
46.	Thumpankeni Tank	12	98.	Pantampola Oya	215
47.	Namakada Aru	100	99.	Deduru Oya	2616
48.	Mandipattu Aru	100	100.	Karambala Oya	589
49.	Pattanthe Dephue Aru	346	101.	Ratmal Oya	215
50.	Magalawatavan Aru	26	102.	Maha Oya	1510
51.	Vett Aru	1280	103.	Attanagalu Oya	727
52.	Mundeni Aru				

Source :Hydrology Division, Irrigation Department,Colombo.

APPENDIX I.2

DISTINGUISHING CHARACTERISTICS OF THE AGRO-ECOLOGICAL REGIONS

ZONE	AGRO-ECOLOGICAL REGION & SYMBOL	MONTHLY HISTOGRAMS OF 75% RAINFALL PROBABILITY FOR RESPECTIVE REGIONS	75% EXPECTANCY VALUE OF ANNUAL RAINFALL (mm)	75% EXPECTANCY OF DRYNESS FOR PARTICULAR MONTHS												MAJOR SOIL GROUPS	TERRAIN		
				JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC				
WET ZONE	UP COUNTRY	WU ₁	> 3175	[Histograms]												Red - Yellow Podzolic Soils and Mountain Regosols	Mountainous, steeply dissected, hilly and rolling		
		WU ₂	> 1900	[Histograms]												Red - Yellow Podzolic Soils and Mountain Regosols	Mountainous, steeply dissected, hilly and rolling		
		WU ₃	> 1400	[Histograms]												Red - Yellow Podzolic Soils with dark B horizon and Red - Yellow Podzolic Soils with prominent A ₁ horizon	Rolling		
	MID COUNTRY	WU ₄	> 3175	[Histograms]												Red - Yellow Podzolic Soils and Red - Yellow Podzolic Soils with semi prominent A ₁ horizon	Steeply dissected, hilly and rolling		
		WU ₅	> 1400	[Histograms]												Reddish Brown Latosolic Soils, Immature Brown Loams and Red - Yellow Podzolic Soils	Steeply dissected, hilly and rolling		
		WU ₆	> 1270	[Histograms]												Reddish Brown Latosolic Soils, Immature Brown Loams and Red - Yellow Podzolic Soils	Steeply dissected, hilly, rolling and undulating		
	LOW COUNTRY	WL ₁	> 2540	[Histograms]												Red - Yellow Podzolic Soils and Red - Yellow Podzolic Soils with semi prominent A ₁ horizon	Rolling and undulating		
		WL ₂	> 1900	[Histograms]												Red - Yellow Podzolic Soils, Red - Yellow Podzolic Soils with strongly mottled Sub Soil and Low Humic Gley Soils	Rolling and undulating		
		WL ₃	> 1525	[Histograms]												WL ₃ : Red - Yellow Podzolic Soils with soft & hard laterite WL ₄ : Red - Yellow Podzolic Soils with soft & hard laterite and Bog & half Bog soils	WL ₃ : Rolling and undulating WL ₄ : Undulating and Flat		
INTERMEDIATE ZONE	UP COUNTRY	IU ₁	> 2160	[Histograms]												Red - Yellow Podzolic Soils and Mountain Regosols	Mountainous, steeply dissected, hilly and rolling		
		IU ₂	> 1400	[Histograms]												Red - Yellow Podzolic Soils and Mountain Regosols	Mountainous, steeply dissected, hilly and rolling		
		IU ₃	> 1150	[Histograms]												Red - Yellow Podzolic Soils	Steeply dissected, hilly and rolling		
	MID COUNTRY	IM ₁	> 1400	[Histograms]												Reddish Brown Earths and Immature Brown Loams	Rolling, hilly and steep		
		IM ₂	> 1150	[Histograms]												Reddish Brown Earths and Immature Brown Loams	Rolling, hilly and steep		
		IM ₃	> 900	[Histograms]												Immature Brown Loams, Reddish Brown Latosolic Soils and Reddish Brown Earths	Steeply dissected, hilly and rolling		
	LOW COUNTRY	IL ₁	> 1020	[Histograms]												Red - Yellow Podzolic Soils with strongly mottled Sub Soil, Low Humic Gley Soils, Red - Yellow Podzolic Soils with soft and hard laterite and Regosols on old Red and Yellow Sands	Rolling, undulating and flat		
		IL ₂	> 1150	[Histograms]												Reddish Brown Earths, Immature Brown Loams and Low Humic Gley Soils	Rolling, hilly and undulating		
		IL ₃	> 900	[Histograms]												Reddish Brown Earths, Non Calcic Brown Soils and Low Humic Gley Soils	Undulating		
DRY ZONE	LOW COUNTRY	DL ₁	> 775	[Histograms]												Reddish Brown Earths and Low Humic Gley Soils	Undulating		
		DL ₂	> 900	[Histograms]												Non Calcic Brown Soils, Reddish Brown Earths, Soils on old alluvium, Solodized Solonetz, Low Humic Gley Soils and Regosols	Undulating and flat		
		DL ₃	> 580	[Histograms]												DL ₃ : Red - Yellow Latosols and Regosols	DL ₃ : Flat to slightly undulating		
		DL ₄	> 500	[Histograms]												DL ₄ : Solodized Solonetz, Solonchaks and Gnumusols Reddish Brown Earths with high amount of gravel in sub soil, Low Humic Gley Soils and Solodized Solonetz	DL ₄ : Flat Undulating and flat		
		WU ₁ & WU ₂ WU ₃ & WU ₄ WU ₅ & WU ₆ WL ₁ & WL ₂ WL ₃ & WL ₄ IU ₁ & IU ₂ IU ₃ & IU ₄	Within these Agro - Ecological regions rainfall characteristics follow patterns normally found in two regions given in the legend. Hence they are combined together. Separate rainfall histograms could not be prepared for these regions with the present available information.															Reddish Brown Earths and Immature Brown Loams	Rolling, hilly and undulating
			Reddish Brown Earths and Immature Brown Loams															Reddish Brown Earths and Immature Brown Loams	Rolling, hilly and undulating
			Red - Yellow Podzolic Soils with strongly mottled Sub Soil and Low Humic Gley Soils															Red - Yellow Podzolic Soils with strongly mottled Sub Soil and Low Humic Gley Soils	Rolling and undulating
			Red - Yellow Podzolic Soils															Red - Yellow Podzolic Soils	Steeply dissected, hilly and rolling

Wetness Dryness First half of Second half of

APPENDIX 2.1

**MAINTAINING OF MINOR IRRIGATION SCHEMES BY DIFFERENT AGENCIES
AT DIFFERENT TIME**

1. Up to 1832 Maintained by the village communities under a system of "Rajakariya" (service for the King). It was abolished by the British in 1832
2. 1837 - 1887 During this period there was no body responsible for the maintenance of minor tanks. This vacuum led to the degradation of village irrigation works.
3. 1887 - 1990 Government Agents were entrusted with the responsibility of executing all irrigation works in their areas by establishing Provincial Irrigation Boards in 1987.
4. 1990 - 1932 A separate Irrigation Department was created in the year 1990. It was made responsible for all irrigation works both construction and maintenance. Provincial Irrigation Boards were abolished with the creation of the Irrigation Department, but Government Agents remain responsible for the maintenance of minor irrigation schemes in their areas with the help of communal labour.
5. 1932 - 1948 Construction, improvements and maintenance of minor irrigation schemes were entrusted to the Irrigation Department under the new irrigation policy, which was introduced by the Minister of Agriculture and Land in 1932.

6. 1948 - 1958 During this period the Irrigation Department was heavily involved with the Gal Oya Irrigation Project. Hence during the latter part of 1948 the responsibility of maintenance of minor irrigation schemes was taken over by the Ministry of Agriculture and Food.
7. 1958 - 1972 Department of Agrarian Services was established with the passage of the Paddy Land Act of 1958 and it was entrusted with the responsibility for executing all minor irrigation schemes.
8. 1972 - 1979 With the passage of the Agricultural Productivity Law of 1970s' responsibility for executing all minor irrigation schemes was transferred to the Irrigation department.
9. 1979 - 1987 Responsibility for maintaining all minor irrigation schemes were handed over again to the Department of Agrarian Services under the Agrarian service Act No 59 of 1979.
10. 1979 - 1995 During the latter part of 1987, powers were entrusted to the Provincial Councils for the rehabilitation and maintenance of minor irrigation schemes under the 13th Amendment to the Constitution.



Annexure i

**UNIVERSITY of MORATUWA
DEPT of TOWN and COUNTRY PLANNING**

**MSc/PG Diploma in Land Use Planning and
Resources Management 1993/95**

Casestudy for Dissertation

Part 1

**Questionnaire for House hold survey for the purpose of evaluating land activities, socio-economic status
and their linkages**

1 General

1.1 Name of Chief occupant:

1.2 Name of the Tank:

1.3 Address:

2 Details of Households:

2.1 Personal Details: (See table 1)

2.2 Was the family in receipt Janasaviya?. Yes/No
If yes, amount Rs.

Activities connected out under this:

2.3 Is the family in receipt of food stamps?. Yes/No
If yes, amount Rs.

2.4 Was the family selected under samurdhi programme?. Yes/No
If yes, amount Rs.
Intended activities under this:

3 Details of House:

3.1 Status of ownership: owner/On rent/commenowner/other(specify)

3.2 Status of House:
Wall - mud/cabok/bricks
Roof - tiled/asbestos/thatched/cadjan
Floor - cement/mud

3.3 Toilet facilities:
septic tank/water sealed/pit latrine/other

3.4 Drinking water: pipe borne/own well/common well/tank/other

3.5 Accessibility: - motorable road/foot path

Table 1 : Details of Family members

Identific-action No.	Relation-ship to C/O	Sex	Age Yrs.	Educational status			Occupation			Other
				school going	educational achievement	present grade in school	Status 1	Note	Monthly income Rs.	


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Note 1: 1a - Agriculture operators

1b - Agricultural labourers

1c - Non agricultural labourers

1d - Govt/Private sector employment

1e - Self employment (other than agriculture operating)

1f - Unemployed - state weather expecting or not expecting using 1 and 2

3.6 Electricity supply for the house: Yes/No

3.7 Floor area of house:

4 Details of home garden:

4.1 Nature of ownership (Note A)

4.2	Type of cultivation	extent(ha)	income from	inputs last year(Rs.)	(Rs.)
	Coconut				
	Mangos				
	Mix garden				

4.2.1 Maintenance of land: - well/average/below

Note A:

A1 - private	A2 - LDO grant	
A3 - LDO permit	A4 - ES permit	
A5 - Annual permit	A6 - Encroachment state land	permit)
A7 - Encroachment private land		

5 Details of upland cultivation:

5.1 Identification number given in question 2.1: wa, Sri Lanka

5.2 Nature of ownership (Note A):

5.3	Type of cultivation	category under 5.2	extent	income from last year
	Paddy			
	Kurakkan(grains)			
	Chilies			
	Vegetables			
	Other			

5.4 What type of cultivation for yala season?.

5.5 Land preparation: - clearing new land/burning/ploughing

5.6 When you allow this land to fallow, where do you cultivate?.

5.7 Fertilizer application: -(Note C)

Note C: C1 - chemical fertilizer only

C2 - organic fertilizer only

C3 - both chemical and organic

C4 - non (Then give the reason high cost /not available in required time/ no purchasing center close/soil fertility is satisfactory)

5.8 Application of insecticide and fungicide: -(Note D)

Note D: D1 - insecticide used
 D2 - insecticide not used
 D3 - fungicide used
 D4 - fungicide not used

5.9 Soil conservation measure:
 farrow/ridges/stone ridges/other(specify)/non

5.10 Last season market fluctuation:
 Cultivation price(start) price(end) duration
 Paddy
 Grains
 Chilies
 Vegetables
 (If land cultivated by more than C/O and more than one land then used annexure 1)

6 Details of Paddy cultivation:

6.1 Identification No given in question 2.1:

6.2 Nature of ownership: - (Note A)

6.3 Nature of tenure: - (Note B)

Note B: B1 - owner cultivator
 B2 - owner cultivator tattumaru
 B3 - tenant cultivator(rent/leased/ande)
 B4 - Other (specify)

6.4 Land preparation:
 buffalo/tractor/both/mamotty

6.5 Type of seeds used: New improved/Traditional
 Duration: 3, 3 1/2, 4, 4 1/2 months
 Indicate the type:

6.6 Seeds obtain from: Govt dept/neighbor/own

6.7 Planting Method: sown/Transplanting
 Comment

6.8 Income from last cultivation year? Rs.

6.9 Expenditure for last cultivation year? Rs.

6.10 Average bushels per acre:

- 6.11 Fertilizer application: (Note C)
- 6.12 Application of insecticide and fungicide: (Note D)
- 6.13 Type of weeding methods: (Note E)

Note E: E1 - Hand Weeding
 E2 - Using Weedicide
 E3 - By use of Water
 E4 - No Weeding
 E5 - Other

- 6.14 Availability of agriculture extension services:
 Technical advice/ Plant materials/ fertilizer/pesticide/weedicide
- 6.15 Additional agricultural labour needs met by:
 Labour on hire/ Mutual assistance/Not available
- 6.16 Source of funds: (Note G)

Note G: G1 - Own funds
 G2 - Funds from village money lender
 G3 - Funds from formal sources (bank/Other)

Amount received last year?

7 **Details of Livestock farming:**

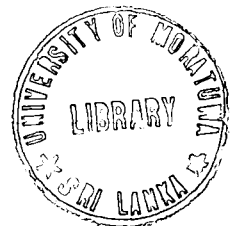
Type	Nos.
Cattle	
Poultry	
Other	

Systematically maintained/ Not systematically maintained

8 **Household expenditure:**

Item	Duration	Amount Rs.
Food	Monthly	
Cloth	Yearly	
Electricity	Monthly	
Maintenance of house	Yearly	
Medicine	Monthly	
Education	yearly	
Transport	Monthly	
Furniture	Yearly	
Trip/Festival	Yearly	
Other	Monthly	

Average expenditure per month?. Rs.



8.1 Ownership of household items, agricultural machinery and vehicals:

Rupavahini
Radio
Sprayer
Water pump
Carts
Push cycle
Motor cycle
Two wheel tractor
Four wheel tractor
Cars
Lorry

9 Pressing problems in this area?.



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10 Proposals for development this area:

Annexure 1

5 Details of upland cultivation:

- 5.1 Identification number given in question 2.1:
- 5.2 Nature of ownership (Note A):
- 5.3 Type of cultivation category under 5.2 extent income from last year
 Paddy
 Kurakkan(grains)
 Chilies
 Vegetables
 Other
- 5.4 What type of cultivation for yala season?.
- 5.5 Land preparation: - clearing new land/burning/ploughing
- 5.6 When you allow this land to fallow, where do you cultivate?.
- 5.7 Fertilizer application: -(Note C)

Note C: C1 - chemical fertilizer only

C2 - organic fertilizer only

C3 - both chemical and organic

C4 - non (Then give the reason high cost /not available in required time/ no purchasing center close/soil fertility is satisfactory)

5.8 Application of insecticide and fungicide: -(Note D)

Note D: D1 - insecticide used
 D2 - insecticide not used
 D3 - fungicide used
 D4 - fungicide not used

- 5.9 Soil conservation measure:
 farrow/ridges/stone ridges/other(specify)/non

6 Details of Paddy cultivation:

- 6.1 Identification No given in question 2.1:
- 6.2 Nature of ownership: - (Note A)

6.3 Nature of tenure: - (Note B)

Note B: B1 - owner cultivator

B2 - owner cultivator tattumaruru

B3 - tenant cultivator(rent/leased/ande)

B4 - Other (specify)

6.4 Land preparation:

buffalo/tractor/both/mamotty

6.5 Type of seeds used: New improved/Traditional

Duration: 3, 3 1/2, 4, 4 1/2 months

Indicate the type:

6.6 Seeds obtain from: Govt dept/neighbor/own

6.7 Planting Method: sown/Transplanting

Comment

6.8 Income from last cultivation year? Rs.

6.9 Expenditure for last cultivation year? Rs.

6.10 Average bushels per acre:

6.11 Fertilizer application: (Note C)

6.12 Application of insecticide and fungicide: (Note D)

6.13 Type of weeding methods: (Note E)

Note E: E1 - Hand Weeding

E2 - Using Weedicide

E3 - By use of Water

E4 - No Weeding

E5 - Other

6.14 Availability of agriculture extension services:

Technical advice/ Plant materials/ fertilizer/pesticide/weedicide

6.15 Additional agricultural labour needs met by:

Labour on hire/ Mutual assistance/Not available

6.16 Source of funds: (Note G)

Note G: G1 - Own funds


G2 - Funds from village money lender

G3 - Funds from formal sources (bank/Other)

Amount received last year?

Annexure ii

Part ii Questionnaire for IRRIGATION SURVEY with the purpose of to evaluate management aspects of the tanks

- 1.1 **Name of the Tank:**
- 1.2 **Name of the Yayapalaka:**
- 2.0 **Information of the Tank**
- 2.1 Did the tank spill during the last 10 years?, Yes/No
Howmany occasions?.
- 2.2 Was the command area cultivated during the last 10 years? (maha)
1.Akkarawela only
2.Puranawela only
3.Total area (1+2)
4.Bethma
5.Non
- 2.3 Was the tank rehabilitated during the last 10 years? yes/No
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- 2.3.1 If yes funded by
Is it successful? Yes/No
If no then reason?
- 2.3.2 If no is it necessary to rehabilitation? Yes/No
If yes Reason
- 3.0 **Institutional arrangements for operation and maintenance of the tank**
- 3.1 What are the institutions involve :DAS\ID\NGOS\Local\
- 3.2 Was the tank bund cleared continuously during last 5 years? Yes/No
If yes funded by
If no reason
- 3.3 Was earth filling done during the last 5years? Yes/No
- 3.4 Sluices are properly working? Yes/No
If no then reason
- 3.5 Channels are well maintained? Yes\ No
If no reason

4.0 Role of kanna meetings

4.1 Is the member participating satisfactory? Yes\No

4.2 Are Government officers are participating ? Yes\No

4.3 Is the kanna meeting hold at the proper time ? yes\No
If no reason



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