Appendix C

Farmers' Organization

APPENDIX C FARMERS' ORGANIZATION

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Chapter 1 CONTENTS OF ACTS AND PROGRAM RELATED TO FO

1.1 Background

Irrigation Ordinance Act No.48 of 1968 defines irrigation management itself, although "cultivation committees' based on paddy cultivators was introduced by the Paddy Lands Act of 1958. The cultivation committees composed solely of farmer's representatives in order to maintain irrigation works at their operational areas. "Cultivation Committees" were replaced by "Farmers' Organization" in line with Irrigation Ordinance (Amendment) Act of No.13 (amended 1994). After repealing the Paddy Land Act of 1958 the Agricultural Productivity Law was enacted in 1972. The Law formed the Agricultural Productivity Committees, but the Committees were not properly worked. Agrarian Services Committees (currently renamed as Agrarian Development Council under the Agrarian Development Act No.46 of 2000) were established by the Agrarian Services Act of 1979. The Committees composed of appointed members who were government officers concerned and farmer representatives, but the performance became poor due to no effective organizational management. Agrarian Services Act (amended 1991) provides legislation on tenant cultivator and registration of FO. The Agrarian Services Committee was replaced by the Agrarian Development Council under the Agrarian Development Act No.46 of 2000.

INMAS (Integrated Management of Irrigated Agricultural Settlements) Programme under IMD was launched for 45 major irrigation schemes covering 166,600 ha out of 332 major irrigation schemes in 1984. The vision of the programme is "self reliant prosperous farmer". The main purposes of INMAS Programme are to form FOs and Farmer Companies, and to promote more agricultural production. In fact, it is informed that MD supported to establish 803 FOs, 7,325 Field Canal Representatives and 11 FCs by 2004[1].

1.2 Agrarian Development Act. No.46 of 2000 and Irrigation Ordinance Act (Amendment) No.13 of 1994 regarding FO

According to PART V of Agrarian Development Act, No.46 of 2000, The Commissioner-General may establish one or more FOs for any area, and then register them. The Commissioner-General should not register a FO under a major irrigation scheme or the area of authority of a public corporation, except with the concurrence of the Secretary of

1 IMD May 2005 Irrigation Management Division of Ministry of Irrigation & Water Management Roles and Archivements, presented by Hiraiwa as JICA expert

Ministry in charge of Irrigation or such public corporations. There are two types of the member of FO, namely membership and associate membership. Whose main livelihood is not agriculture; or is engaged in any production relating to agriculture or in the marketing of agricultural produce can be associate membership.

According to Agrarian Development Act, No.46 of 2000, every person whose livelihood is agriculture shall be eligible for membership of a FO established under subsection, if:

- He is a citizen of Sri Lanka;
- He is not less than sixteen years of age; and
- He is a resident of the area of authority of the FO in which he is seeking membership or he has been engaged in agricultural activities in that area of authority for a period exceeding two years.

Associate membership of a FO established may be obtained by:

- An owner or occupier of agricultural land within the area of authority of the FO, whose main livelihood is not agriculture; or
- Any person who is engaged in any production relating to agriculture or in the marketing of agricultural product or goods.

The Commissioner-General may cancel the registration of a FO, if the number of members becomes less than 25; if the FO has not been functioning for a period exceeding 1 year; if not less than one fourth of the number of members of a FO makes an application to the Commissioner-General.

The internal regulation of FO shall mention functions, maintenance and audit of the accounts, the manner of election of the Committee of a FO, the terms of office of the members, the transaction of business at meetings of the FO, removal or resignation of members of the Committee, the staff of a FO, the enrolling of members of a FO, the recovery of membership fees, convening of meetings of owner cultivators and occupiers or members and so on, according to the PART V. A General Meeting of the members of a FO shall be called in every year. When a FO fails to convene a general meeting at least once in two years, the Agrarian Development Council of that area shall have the power to convene such meeting. The Commissioner-General or a representative authorized is to examine the accounts of every FO, although the Funds of a FO shall be deposited in an account in a prescribed Bank.

Every FO may obtain loans or advances from prescribed banks or State Institutions for FO and its members under joint loan schemes. A FO may also obtain deposits from its members and utilize the same to grants loans to its members, though a member of a FO shall withdraw any money deposited with the organization with 14 days notice. It is the duty of a FO to encourage small groups of farmers to organize themselves together for the agricultural activities.

One of important duties related to FO is to encourage small groups of farmers to organize themselves together having regard to the agricultural activities carried on by them or the relationships among them. Another important duty is to assist the Agrarian Development Council by electing a representative or representatives to represent its membership in the Agrarian Development Council as well as Project Management Committee chaired by Project Manager under IMD.

Every FO shall assist the Agrarian Development Council in the following manner; by inducing the owner cultivators and occupiers of agricultural lands; by formulating programme for the cultivation of paddy lands; by collecting data regarding agricultural lands, agricultural machinery and agricultural animals and inland fish; by encouraging soil conservation, efficient water use, the use of compost manure; by taking measures to ensure that such crops and animals are free from diseases and pests; by implementing programmes to educate owner cultivators, occupiers and agriculturalists.

1.3 Integrated Management of Major Irrigation Schemes (INMAS) Program

The program for Integrated Management of Major Irrigation Schemes (INMAS) is an attempt to rectify some of these weaknesses especially at Project level. Coordination and agreement among different line departments is very weak, and it is then necessary to arrange institutional structure, that is establishment of IMD, to manage a degree of administrative control the Resident Project Manager (RPM) over line departmental staffs in 45 large irrigation schemes. In fact, the initial objective of IMD was to implement the integrated management concept introduced through INMAS Program.

Resident Project Management in INMAS Program with a view to:

- Increasing agricultural production per unit of irrigation water
- Increasing agricultural production per unit of land
- Adequate and equitable distribution of irrigation water to farmers
- Arrange for timely supply of agricultural inputs and sale of produce
- Organize and develop farmer institutions to facilitate their participation in management
- Recovery of O & M costs from beneficiaries in major irrigation schemes
- Maintenance of irrigation systems at optimum levels of performance
- Identify major systems needing urgent rehabilitation
- Farmer education

In the long term INMAS would focus on:

- Integrated development of the farm lot to a commercial holding
- Crop diversification and rotation

- Social and economic development of the farming community
- Marketing of agricultural produce and by-products
- Agro-based industries
- Processing of agricultural produce to semi-finished or finished produces locally
- Handing over to farmer organizations some of the management and operational functions of these project

ID launched a parallel programme termed MANIS (Management of Irrigation Systems) with the same objectives and functions as INMAS in 1988 with its in-house staff to cover the rest of the schemes not covered by INMAS. ID's Participatory Irrigation Management Programme is now termed WAPHAULA (meaning joint management) and covers the balance 288 major and medium schemes.

Chapter 2 PRESENT CONDITION OF THE FOS

2.1 General Condition of FO at National level

According to Administration Report 2002 of Irrigation Department, implementation of operation and maintenance for gravity works covered 304 schemes and 229,482 ha with Rs. 12 M, and the implementation for lift irrigation covered 6 schemes and 282 ha with Rs. 1.2 M. The Rs. 12 M was for payment of wages of regular and ad-hoc laborers. In addition, Irrigation Management Division of the Ministry provided Rs. 98 M for O & M gravity work.

"Farmer Organisation Strength Evaluations" were introduced with a view of assessing the strengths and weaknesses of FOs. The following training programme were carried out:

- Awareness programmes for Farmers/ PMC Members on Rights & Duties of organization
- Reviewing and updating of financial records of FO
- Construction and quality control programmes in rehabilitations
- Systems operation

With respect to overall of the progress under IMD (see **Table C 2.1.1**) 803 FOs with 7,330 FCGs were established until 2004, and 39 PMC out of 45 were also established (see **Table C 2.1.1**). 408 FOs (50.8%) were registered, although the turnover of D & F Canal to 774 FOs (96.4%) was implemented. The number of the appointment of Jalapalakas (Water Master) and the mobilization of credit were 650 FOs (80.9%) and 483 FOs (60.1%) respectively. It can be said that the progress of the establishment related to FOs is very well.

Table C 2.1.1 Institutional Development Progress – INMAS Programme -

Item	up to 2003	During 2004	up to 2004	2005 Target (July)	2005 Progress (July)
Set up FOs	796	7	803	0	0
Set up FCG's	7,330	0	7,330	0	0
Turnover of D&F canal to FO	774	0	774	20	0
Set up PMC	39	0	39	0	0
Set up F-PMC	21	0	21	0	0
Set up FC	11	0	11	0	0
Appointment of Jalapalakas	542	108	650	0	0
Mobilization of Credit	251	232	483	150	85
Facilitation of Signing FSC	8,204	9,500	17,704	5,000	3,598
Set up Operation & Maintenance C.	14	0	14	5	0
FO registration under Agra. Devel.Act	294	114	408	150	80

: formal turnover 629; informal turnover 145, Source: IMD, Octorber 2005

With respect to overall of the progress under WAPHAULA Programme of ID 895 FOs were formed with 795 (89%) being registered under Agrarian Development Act until end of 2004, Out of 210 schemes under the programme to date, PMCs were formed in all 210 (100%) as shown in **Table C 2.1.2**. Turnover was completed in schemes outside the North East. Joint management is generally in force, but the quality can vary. 167 EAs (Engineering Assistant) have worked as Project Managers in addition to their normal technical duties.

Table C 2.1.2 Institutional Development Progress -WAPHAULA PROGRAMME - Summary of Status

No	Region	No of Schemes		Extent		Potential Foo No	Foo Formed No	No Regd. (56a)	PMCC	PMM
		Potential Scheme Nos	Under Waphaula	Acs	ha					
1	Ampara	14	13	58914	23756	124	131	119	13	8
2	Anuradhapura	84	65	22468	9060	65	72	64	65	60
3	Bandarawela	10	10	9120	3677	50	46	46	10	9
4	Batticaloa	9	4	48889	19713	56	58	58	4	4
5	Colombo	23	19	15095	6087	110	108	105	19	18
6	Galle	15	8	7589	3060	90	94	78	8	6
7	Hambantota	9	8	17672	7126	81	90	90	8	5
8	Kurunegala	19	19	9373	3779	96	57	55	19	12
9	Kandy	20	19	7376	2974	85	70	68	19	16
10	Monaragala	25	25	12773	5150	68	64	64	25	15
11	Puttalam	8	8	5069	2044	28	26	25	8	5
12	Polonnaruwa	5	5	1747	704	4	5	4	5	4
13	Vavuniya	9	5	11846	4777	14	16	15	5	3
14	Trincomalle	2	2	2055	829	7	4	4	2	2
	Total	**252**	**210**	**229986**	**92736**	**878**	**841**	**795**	**210**	**167**

PMM - Project Managers

2.2 General Condition of the FOs at the Target Areas

The Committee of FO generally consists of office bearers and all representatives of each Field Canal Group (FCG) or in some by some representatives of FCG. The office bearers usually consist of President, Secretary, and Treasurer with Vice President and Vice Secretary. They are elected at an annually general meeting of the members of a FO. The term of the office bearers is generally one or two years that can be reappointment. In fact, average serviced period of president at Nachchaduwa and Rajangana scheme is approximately 20 years, according to the Field Survey of the FOs[2]. The period of secretary at Nachchaduwa, Thuruwila, and Rajangana scheme are 18, 10, and 12 years respectively. There are two types of the Field Survey of FO are Questionnaire for FO in the large scale scheme partly modified from the Questionnaire for

2 Field Survey of FO at Nachchaduwa, Thuruwila, and Rajangana Scheme was implemented in January and February 2006. In addition to the FOs selected by Blocks for detailed Irrigation Block Map, target FOs were mainly selected by frequency of monthly FO Meeting from August to November 2005 under ADC with geographical consideration (upper, middle, and down in canal). Parakumba, Tissa and Isuru at Nachchaduwa, Mahanama at Thuruwila, Saliya Gama, Mahasen and Wijaya at Rajangana (RB), and Sri Udara, Perakum and Sadagala at Rajangana (LB).

Study on Irrigation Management of FO in Nachchaduwa Irrigation Scheme [3], and Questionnaire for FO's Activities.

There are 14 FOs covering 130 FCGs under Nachchaduwa Irrigation Scheme (see **Table C 2.2.1**). All of the FOs except Navoda FO at Nachchaduwa was established in 1980's under Agrarian Services Act 56a, while Navoda FO was recently registered. According to the data provided by Nachchaduwa IMD as of November 2005 and the Integrated Monthly Progress Report in September and November 2005 at Nachchaduwa Agrarian Development Committee (ADC)[4], 2,118 including estimated member of Navoda FO are the member of the FOs that consists of 26 % of the member as female member and 74 % as male member[5].

There are not established sub-PMCs at Nachchaduwa Scheme. Average number of FO, and FCG per FO are 165 members and 17.8 FCGs at Nachchaduwa Scheme. The members of most of the FOs have been changed except two FOs that are Isuru and Gemunu Eksath. The numbers of Parakumba (from 80 to 266), Tissa (211 to 250), Alaksa (188 to 256), and Ranamauyura (92 to 160) FO have increased. The numbers of Senasamagi (from 400 to 179), Mahasen (300 to 210), Ranketha (180 to 137), 26/27 (183 to 123), Ruwaweli (196 to 146), Eksath Gamunu (350 to 110), and Wijeya FO (84 to 56) have decreased. It is worth noting that better capacity of FOs, namely Isuru, Gemunu Eksath, Tissa, and Wijeya FO, have not largely changed their member of FO, although these reasons cannot be precisely identified. It is suggested that 40-60% of the operators are registered as the member of the FO, while 74 % of the operators including landowners are registered as the member according to the data of Nachchaduwa IMD.

There is also Mahanma FO covering 13 FCGs, namely, under Thuruwila Medium Irrigation Scheme, as shown in Table 3.4.3. Mahanma FO was officially registered. According to the representatives of the FO, the number of the FO is 196 (78%) out of 250 operators.

There are two type of irrigation, namely gravity and lift, under Rajangana Irrigation Scheme. It is worth noting that 5 Sub-PMC[6] covering Rajangana Irrigation Scheme are established. The sub-PMC chaired by a representative of FO is monthly hold. Main agenda are to talk about various problems[7] including land issues.

There are 32 FOs covering 513 FCGs in gravity system (see **Table C 2.2.2**). All FOs was officially registered under the Agrarian Act. According to the data provided by Rajangana IMD as of November 2005 and the Integrated Monthly Progress Report in September and

3 Submitted by Project Management & Consultancy Services to Mr. Hiraiwa as JICA expert in May 2005.
4 Several names of FOs are different mentioned in English between the IMD and the Agrarian reports. For example, Ranamuyura vs. Ranamayura.
5 The number of female and male member in Navoda FO cannot be shown in the Integrated Monthly Progress Report due to the FO recently established.
6 No.1 of RB consists of Track 1~5. No.2 are Track 6~10 and 12=14. No.3 are 11 and 15~18. No.1 of LB consists of Track 1~5. No.2 are 4~7.
7 According to the meeting minutes of Sub-PMC of No.2 of LB dated 6th October 2005, progress report related to clearing and maintenance of canal, result of official bearers' election, explanation of new programme such as agricultural programme for 2005/2006, various problems and requirements presented by the representatives, loan arrangement reported by ARPA, condition of Title Deeds explained by Colonization Officer and so on were discussed.

November 2005 at Rajangana, Rajangana LB, and Upper Pulyankulama ADC, 6,469 are the member of the FOs under gravity system that consists of 15 % of the member as female member and 85 % as male member. It is also suggested that 80 % of the operators are registered as the member of the FO. In fact, the rate of FO member out of the operators is 81% according to the FO Sample Survey (Data collection of crop survey) being conducted by Rajangana IMD through ARPA from December 2005.

There are 27 FOs covering 231 FCGs in lift system (see **Table C 2.2.2**). All FOs was officially registered under the Agrarian Act. According to the above data, 2,606 are the member of the FOs under lift system that also consists of 15 % of the member as female member and 85 % as male member.[8]

Table C 2.2.3 at Nachchaduwa **Table C 2.2.4** at Rajangana show clearly the difference numbers of FCG and FO member, depending upon data resources. This is not only because system of data update is weak, but also because some of FCG not being function that not involved as the number. It is also difficult for FO to figure out properly the numbers of FO member without collecting annual FO membership fee. In other words, organizing basic data and document in FO and government agencies is very weak.

8 Female and male number are not shown in B.O.P. 711/1 and 6928 -Ibid- (the above report)

Table C 2.2.1 Basic Information of the FOs at Nachchaduwa and Thuruwila

Name of FO	Location	Extent Ha	No. of FCG	No. of Operator	Population	No. of member	Activities of FO				Operation and Maintenance			Funds received in 2004		Crop diversification in yala in paddy field	Water management below DC	Total
							General election	Seasonal general meeting	Monthly committee meeting	Account Update	Appointing of water master	Collecting fee for salaries	Shramadana	Operation	Maintenanace			
Nachchaduwa	LB Track No						1/0	2/1/0	2/1/0	1/0	1/0	1/0	3/2/1/0			2/1/0		
Senasamagi	H.L.D	152.00	10	(289)	1,100	179	1	1	2	0	0	0	0	4,348	12,000	1	0	5
Mahasen	H.L.D	199.00	9	(282)	1,100	210	1	1	0	0	1	0	0	5,152	25,000	2	0	5
Parakumba	H.L.D	230.00	13	(180)	830	266	1	1	2	1	0	0	0	3,552	12,000	1	0	6
Navoda	H.L.D	150.00	7	(100)	1,560	60	1	0	0	0	1	0	0	2,113	3,000	1	0	3
Ranketha	H.L.D	176.00	11	(117)	793	137	1	1	1	1	0	0	0	6,141	16,000	1	0	3
26/27	H.L.D	197.00	11	(207)	1,430	123	1	1	2	1	1	0	0	5,379	50,000	1	0	7
Ruwaweli	H.L.D	196.00	11	(211)	1,765	196	1	1	2	1	0	0	0	6,041	22,000	0	0	5
Tissa	H.L.D	210.00	11	(200)	2,000	195	1	1	2	1	1	0	1	5,602	34,000	1	0	8
Sub-Total	8	1,510.00	83	0	10,578	1,366	8	7	11	5	4	0	1	38,328	174,000	8	0	42
per FO		188.75	10	0	1,322	171	1	1	1	1	1	0	0	4,791	21,750	1	0	5
per FCG		18.19	1	0	127	16	0	0	0	0	0	0	0	462	2,096	0	0	1
Alaksa	L.L.D	204.00	9	(87)	2,100	256	1	1	2	1	0	0	0	5,602	22,000	1	0	6
Eksath Gamunu	L.L.D	137.00	11	(182)	775	110	1	2	2	1	0	0	0	4,130	16,000	1	0	7
Isuru	L.L.D	125.00	16	(137)	630	153	1	2	2	1	1	0	1	3,717	17,000	2	0	10
Ranamauyura	L.L.D	135.00	11	(102)	1,541	160	1	1	1	1	0	0	0	4,131	8,000	2	0	6
Gemunu Eksath	L.L.D	170.00	13	(271)	1,436	210	1	2	2	1	1	0	1	7,808	35,000	2	0	10
Wijeya	L.L.D	139.00	7	(83)	69	56	1	1	2	1	1	0	0	2,534	8,000	2	0	8
Sub-Total	6	910.00	67	0	6,551	945	6	9	11	6	3	0	2	27,922	106,000	10	0	47
per FO		151.67	11	0	1,092	158	1	2	2	1	1	0	0	4,654	17,667	2	0	8
per FCG		13.58	1	0	98	14	0	0	0	0	0	0	0	417	1,582	0	0	1
Total	14	2,420.00	150	0	17,129	2,311	14	16	22	11	7	0	3	66,250	280,000	18	0	89
per FO		172.86	11	0	1,224	165	1	1	2	1	1	0	0	4,732	20,000	1	0	6
per FCG		16.13	1	0	114	15	0	0	0	0	0	0	0	442	1,867	0	0	1
Thuruwila																		
Mahanama	1	188.00	24	250		196	1	2	0	0	1	0	0	16,000	54,000	0	0	4
per FO		188.00	24	250	0	196	1	2	0	0	1	0	0	16,000	54,000	0	0	4
per FCG		7.83	1	10	0	8	0	0	0	0	0	0	0	667	2,250	0	0	0

Note: Recent data of Navoda is not available, Population as estimated figure

Source: IMD Rajangana November 2005; Integrated Monthly Progress Report Nachchaduwa ADC November 2005; Direct Interview with Representatives of the FO

Table C 2.2.2 Basic Information of the FOs at Rajangana (1/2)

Name of FO	Location	Extent (Ha)	No. of FCG	No of Operators	Population	No of member	Activities of FO				Operation and Maintenanace			Funds received in 2004		Crop diversification in yala in paddy field	Water management below DC	Total
							General election	Seasonal general meeting	Monthly committee meeting	Account Update	Appointing of water master	Collecting fee for salaries	Shramadana	Operation	Maintenanace			
	RB Track No						1/0	2/1/0	2/1/0	1/0	1/0	1/0	3/2/1/0			1/0	1/0	
Saliya Raja	1(GRA)	98.50	13		642	107	1	2	2	1	1	0	1	3,704	6,973	1	1	10
Eksath Gamunu	2(GRA)	193.10	15		1,617	231	1	2	0	1	1	1	3	8,892	6,985	0	1	10
Parakum	3(GRA)	132.00	13		870	145	1	1	1	1	1	0	2	4,075	9,146	0	1	8
Saliya Gama	4(GRA)	179.00	16		1,795	256	0	1	0	1	1	0	2	3,608	4,860	1	1	7
Tisapuras	5(GRA)	243.00	24		1,875	285	1	1	1	1	1	0	3	4,902	6,697	0	1	9
Arunalu	6(GRA)	101.80	9		812	112	0	0	0	1	1	1	1	2,052	2,940	0	1	5
Jaya Sri	7(GRA)	101.80	9		644	92	0	0	2	1	1	0	0	2,052	3,737	1	1	6
Mahasen	8(GRA)	181.80	16		894	149	1	2	2	1	1	1	3	3,664	5,424	0	1	12
Kethsiri	9(GRA)	135.70	14		812	116	0	0	2	1	1	0	2	2,735	16,084	0	1	7
Ruhunu	10(GRA)	90.00	11		325	65	1	2	0	1	1	1	3	1,813	2,289	0	1	10
Ranketha	11(GRA)	322.00	20		1,206	322	0	2	1	1	1	0	2	4,051	8,730	1	1	9
Pradeepalika	12(GRA)	173.00	17		820	175	0	0	2	1	1	0	2	3,487	4,826	0	1	7
Ekamuthu	13(GRA)	193.90	17		1,148	164	0	0	0	0	1	0	1	2,540	3,538	0	1	3
Wijaya	14(GRA)	153.50	16		987	196	1	2	1	1	1	1	2	3,094	4,547	0	1	10
Jayagama	15(GRA)	173.00	11		972	191	0	0	0	0	0	0	0	3,487	2,997	1	1	2
Tharuna Govi	16(GRA)	160.00	16		966	360	1	2	0	1	1	0	2	3,225	13,340	0	1	8
Saraketha	17(GRA)	307.00	20		2,350	170	0	2	0	1	1	0	3	11,544	22,337	0	1	8
Sri Vijaja	18(GRA)	382.00	11		926	161	1	2	0	1	1	0	3	5,694	15,230	1	1	10
Sub-Total	18	3,321.10	268	0	19,661	3,297	9	21	14	16	17	5	35	74,616	140,679	6	18	141
per FO		184.51	15	0	1,092	183	1	1	1	1	1	0	2	4,145	7,816	0	1	8
per FCG		12.39		0	73	12	0	0	0	0	0	0	0	278	525	0	0	1
	LB Track No						1/0	2/1/0	1/0	1/0	1/0	1/0	3/2/1/0			1/0	1/0	
Samagi	1(GRA)	130.90	11		1,470	166	1	2	2	1	1	0	2	2,638	5,830	1	1	11
D.S. Senanayake	1(GRA)	133.30	17		825	170	1	2	2	1	1	0	2	2,687	7,039	0	1	10
Sri Udara	2(GRA)	172.90	16	383	1,284	186	0	1	0	0	1	0	2	3,485	5,393	0	1	5
Gemunu Eksath	2(GRA)	115.08	16		1,140	180	1	2	1	1	1	1	2	2,334	6,494	0	1	10
Suwarana Bumi	3(GRA)	222.20	23		1,925	300	1	1	2	1	1	0	1	4,478	9,798	0	1	8
Nawageewana	3(GRA)	197.02	18		636	357	0	1	0	0	1	0	2	3,975	7,157	0	1	5
Perakum	3(GRA)	202.02	26		1,503	257	1	2	2	1	1	1	3	2,660	4,950	0	1	12
Gemunu	3(GRA)	85.06	11		1,500	129	0	2	2	0	1	-	2	7,725	4,060	0	1	8
Jayanthipura	4(GRA)	274.70	20		725	290	0	2	1	1	1	0	1	5,537	9,680	0	1	7
Ranketha	5(GRA)	287.70	24		2,136	290	0	1	0	0	0	0	1	5,799	134,476	0	1	3
Sadagala	5(GRA)	181.80	16		1,210	212	0	1	1	0	1	1	2	3,664	9,245	1	1	8
Suhada	6(GRA)	160.00	13		1,176	268	1	2	0	1	1	0	1	3,225	6,334	1	1	8
Veerapura	7(GRA)	145.00	16		1,266	287	0	2	0	0	0	0	1	2,972	7,625	0	1	4
Saliyawewa	7(GRA)	113.10	18		820	149	0	2	0	0	1	0	3	2,280	5,079	0	1	7
Sub-Total	14	2,420.78	245	383	17,616	3,241	6	23	13	7	12	3	25	53,458	223,159	3	14	106
per FO		172.91	18	27	1,258	232	0	2	1	1	1	0	2	3,818	15,940	0	1	8
per FCG		9.88		2	72	13	0	0	0	0	0	0	0	218	911	0	0	0
Total	32	5,741.88	513	383	37,277	6,538	15	44	27	23	29	8	60	128,074	363,838	9	32	247
per FO		179.43	16	12	1,165	204	0	1	1	1	1	0	2	4,002	11,370	0	1	8
per FCG		11.19		1	73	13	0	0	0	0	0	0	0	250	709	0	0	0

Reource: IMD Rajangana November 2005, Integrated Monthly Progress Report at ADC dated Aug. Oct. 2005

Table C 2.2.2 Basic Information of the FOs at Rajangana (2/2)

Name of FO	Location	Extent (Ha)	No. of FCG	No of Operators	Population	No of member	Activities of FO				Operation and Maintenanace			Funds received in 2004		Crop diversification in yala in paddy field	Water management below DC	Total
							General election	Seasonal general meeting	Monthly committee meeting	Account Update	Appointing of water master	Collecting fee for salaries	Shramadana	Operation	Maintenance			
	RB Track No						1/0	2/1/0	2/1/0	1/0	1/0	1/0	3/2/1/0			1/0	1/0	
B.O.P. 715/1	(LIFT)	23.00	7		610	98	0	1	1	1	-	-	-	-	-	-	-	-
B.O.P.715/2	(LIFT)	70.00	7		510	85	0	1	1	1	-	-	-	-	-	-	-	-
B.O.P.397	(LIFT)	28.00	10		486	63	1	2	1	1	-	-	-	-	-	-	-	-
B.O.P.716	(LIFT)	20.00	10		721	197	1	1	1	1	-	-	-	-	-	-	-	-
B.O.P.717/1	(LIFT)	20.00	6		840	122	0	0	1	0	-	-	-	-	-	-	-	-
B.O.P. 560/A	(LIFT)	46.00	12		670	123	1	2	1	1	-	-	-	-	-	-	-	-
B.O.P.561	(LIFT)	10.00	4		246	81	0	0	0	0	-	-	-	-	-	-	-	-
B.O.P.607	(LIFT)	55.00	13		626	41	0	0	0	1	-	-	-	-	-	-	-	-
B.O.P.717/2	(LIFT)	80.00	12		2,220	122	0	1	1	1	-	-	-	-	-	-	-	-
LIFT total	9	352.00	81	-	6929	932	3	8	7	7								
Total or Average		39.11	9	-	770	104												
	LB Track No						1/0	2/1/0	1/0	1/0	1/0	1/0	3/2/1/0			1/0	1/0	
B.O.P.711/1	(LIFT)	53.12	6		630	116	0	1	1	0	-	-	-	-	-	-	-	-
B.O.P.711/2	(LIFT)	52.05	8		875	175	1	2	0	1	-	-	-	-	-	-	-	-
B.O.P.712	(LIFT)	40.04	7		1,222	89	1	1	0	1	-	-	-	-	-	-	-	-
B.O.P.713	(LIFT)	113.93	8		1,050	137	0	0	1	0	-	-	-	-	-	-	-	-
B.O.P.714	(LIFT)	61.01	6		672	112	1	2	0	1	-	-	-	-	-	-	-	-
Udakammala	(LIFT)	54.00	7		672	116	1	2	0	1	-	-	-	-	-	-	-	-
B.O.P.662	(LIFT)	70.06	15		1,025	186	0	0	1	1	-	-	-	-	-	-	-	-
B.O.P.691	(LIFT)	70.30	8		1,400	52	0	0	0	1	-	-	-	-	-	-	-	-
B.O.P.691/1	(LIFT)	88.00	8		250	38	0	0	1	1	-	-	-	-	-	-	-	-
B.O.P.692	(LIFT)	23.40	8		672	100	0	-	0	1	-	-	-	-	-	-	-	-
B.O.P.721	(LIFT)	127.20	15		310	60	0	1	0	1	-	-	-	-	-	-	-	-
B.O.P.722	(LIFT)	61.80	8		325	63	0	0	0	1	-	-	-	-	-	-	-	-
B.O.P.695/1	(LIFT)	30.70	5		492	182	0	0	1	0	-	-	-	-	-	-	-	-
B.O.P.695/2	(LIFT)	25.00	11		540	62	0	0	0	0	-	-	-	-	-	-	-	-
B.O.P.718	(LIFT)	54.50	9		670	45	1	1	0	1	-	-	-	-	-	-	-	-
Kanupurana	(LIFT)	84.00	10		986	70	1	2	0	1	-	-	-	-	-	-	-	-
China Pump	(LIFT)	7.67	5		112	19	1	2	0	1	-	-	-	-	-	-	-	-
Navodaya	(LIFT)	12.00	6		310	52	1	-	0	0	-	-	-	-	-	-	-	-
LIFT Total	18	1,028.78	150	-	12213	1674	8	14	5	13	0	0	0	0	0	0	0	0
Total or Average		57.15	8	-	679	93	0	1	0	1								
LIFT Total	27	1,380.78	231	-	19142	2606	11	22	12	20	0	0	0	0	0	0	0	0
Total or Average		51.14	9	-	709	97	0	1	0	1								

Reource: IMD Rajangana November 2005, Integrated Monthly Progress Report at ADC dated Aug. Oct. 2005

Table C 2.2.3 Number of the FOs based on Different Resources at Nachchaduwa

Data Source / Name of FO	Data from the Study*1 at Nachchaduwa in May 2005			Data from Nachchaduwa IMD in October 2005		Data from Nachchaduwa ADC Monthly Report IMD in November 2005				Data from Direct Interview with representatives of the FOs in February 2006		
	No. of FCG	Original No. of Member	No. of Member of FO	No. of Operators	No. of Member of FO	No. of FCG	No. of Member of FO			No. of FCG	No. of Operators	No. of Member of FO
							Female	Male	Total			
Senasamagi	9	400	400	289	170	10	29	150	179	10		179
Mahasen	9	300	300	282	230	9	40	200	240	9		210
Parakumba	11	80	80	180	145	13	67	166	233	13		266
Navoda*2	7	55	87	100	60	7						
Ranketha	8	180	180	117	82	7	55	118	173	11		137
26/27	9	183	183	207	183	9	35	79	114	11		123
Ruwaweli	11	196	196	211	101	11	50	154	204	11		146
Tissa	8	211	211	200	190	8	54	145	195	16		250
Alaksa	9	188	255	87	68	8	58	200	258	9		256
Eksath Gamunu	4	350	182	182	110	7	58	22	80	11		110
Isuru	8	153	153	137	105	11	42	114	156	16		153
Ranamauyura	7	92	102	102	95	11	17	60	77	11		160
Gemunu Eksath	10	207	207	271	210	13	18	75	93	13		210
Wijeya	7	84	84	83	68	7	14	42	56	7		56
Total	117	2,679	2,620	2,448	1,817	131	537	1,525	2,058			2,256
Average	8.4	191.4	187.1	174.9	129.8	9.4	26	74	158.3			173.5

*1: Study on Irrigation Management of Farmer Organizations in Nachchaduwa Irrigation Scheme (May 2005) by Project Management & Consultancy Services. Isuru number is original

*2: Data of Navoda is not available Source: The above data source

Table C 2.2.4 Number of the Selected FOs based on Different Resources at Rajangana

Data Source / Name of FO	Data from IMD Rajangana in Octorber 2005			Data from Monthly Report at ADCS in December 2005			Data from FO Sample Survey arranged by IMD in February 2006 (on progress)		
	No. of FCG	No. of Members	No. of Operators	No. of Members			No. of FCG	No. of Members	No. of Operators
				Female	Male	Total			
Saliya Raja	13	107	117	11	96	107	18	75	85
Eksath Gamunu	15	231	240	35	196	231	23	199	215
Parakum	13	145	160	12	133	145	23	150	207
Saliya Gama	16	256	270	56	200	256	16	225	225
Tisapuras	24	285	290	26	259	285	24	292	312
Arunalu	9	112	120	10	102	112	9	59	92
Jaya Sri	9	92	111	18	74	92	12	93	161
Mahasen	16	149	160	46	103	149	8	77	157
Kethsiri	14	116	130	25	97	116	9	99	174
Ruhunu	11	65	75	16	49	65	8	61	100
Ranketha	20	322	330	13	309	322	20	280	301
Pradeepalika	17	176	190	50	125	175	18	176	196
Ekamuthu	17	164	180	41	123	164	12	165	184
Total	194	2220	2373	359	1866	2219	200	1951	2409
Average	14.9	170.8	182.5	27.6	143.5	170.7	15.4	150.1	185.3

Source: The above data resources

Chapter 3 CONDITION OF THE FOS AND THE FCG AT THE TARGET AREAS

3.1 Proposed Activities of FO

According to the IMD procedure presented by IMD dated May 2005, there are major steps as institutional development progress as follows:

a) Establishment of FO and FCG
b) Turnover of D & F canal to FO
c) Establishment of PMC and F-PMC
d) Establishment of FC (Farmer company)
e) Appointment of Jalapalakas (Water Master)
f) Mobilization of Credit
g) Facilitation of signing FSC (small contract)
h) Establishment of O & M Committee
i) Registration under Agrarian Development Act

According to the observation and various interviews with related agencies and the representatives of the FOs at the target areas, most of expected activities are well implemented, although the condition of mobilization of credit, the facilitation of signing FSC, and establishment of O & M committee are known very well. In fact, establishment of FO with official registration under the Agrarian Service Act, FCG, PMC, F (Sub)-PMC, FC were implemented. Three Farmer companies were establishes, one company under LB at Rajanganaya works relatively well that is suggested by Rajanganaya IMD and a representative of Salya Raja FO. Some of the FOs actually arranged Bank Loan from Rural Development Bank for the FO members with guaranty of three office bearers, while they do not reach a level of own saving and loan system.

The progress of activities regarding FO can be divided into 4 following types, according to the above procedure:

a) Election of FO's president etc.
b) Auditing of FO
c) Final account preparation
d) General meeting

General meeting, election of official bearers, final account preparation, and auditing of FO mainly carried out by ASC (Agrarian Service Centre) are more or less implemented, although quality of the activities would be carefully confirmed. For example, the rate of attendance to the general meeting was 30 %, according to the Secretary of Mahanama FO. In addition, the

rate of attendance and times related to Monthly Committee Meeting as well as rate of collection fee for D and F canal are crucial points in monitoring and evaluating their activities.

3.2 Present Activities of the target FOs

The government officially implemented the handover of D and F canal regarding O & M. All of the FOs was also officially registered under the Agrarian Service Act. Three Farmer companies were establishes, one company under LB at Rajangana has worked relatively well, according to Rajangana IMD and a representative of Saliya Raja FO. Moreover, most of representatives of the FOs have attended at Kanna Meeting, and PMC.

According to **Tables C 2.2.1**, and **C 2.2.2**, 12 FOs out of 14 FOs (85.7%) at Nachchaduwa, 17 out of 32 (53.1%) at Rajangana gravity scheme, 13 out of 27 (48.1%) at Rajangana lift scheme held the Monthly Committee Meeting. Some of the FOs held two times of the meeting, for example 10 of 14 FOs at Nachchaduwa Scheme and 10 of 59 at Rajangana scheme.

According to the interview (November 2005), the Field Survey of FO (see **Table C 3.2.1**), and **Tables C 2.2.1** and **C 2.2.2**, the following points are explored:

Basic Document/ Information Management

- Internal regulation was formulated as necessary document for official registration, but most of the FOs (except Isuru FO) have never changed it as official form
- Most of the FOs cannot present their internal regulation
- Information of numbers of FO and FCG member differ from official bearer to official bearer of FO

Plan Formulated by the FOs

- Rehabilitation work plan formulated only at Nachchaduwa (17%)
- Rehabilitation work plan, and agricultural plan formulated at Thuruwila (50%)
- Agricultural plan, water distribution plan, and rehabilitation work plan formulated by some of the FOs at Rajangana (29%)
- Development plan not formulated by the FOs at all

Basic Organizational Capacity

- Appointing rate of water master are 50% at Nachchaduwa, 100% at Thuruwila, and 91% at Rajangana
- Collection rate in O&M Fee are 0% at Nachchaduwa and Thuruwila, and 17-25% at Rajangana
- Participation rate in 'Shramadana' are 21% at Nachchaduwa, 0% at Thuruwila, and 94% at Rajangana

Present Major Activities of the FOs

- All types of activities under the FOs implemented at Rajangana (37%)
- Water distribution and O&M as irrigation work, and agricultural input implemented at Nachchaduwa (33%)
- Water distribution and O&M as irrigation work only implemented at Thuruwila (40%)

Development Activities

- Contract rehabilitation work implemented by all FOs (100%) at Nachchaduwa and Thuruwila
- Contract rehabilitation work implemented by some of FOs (67%) at Rajangana
- Group purchase and marketing implemented by some of FOs (17%) at Rajangana only

Major Problems of FO Activities

- Low participation of farmers is a common problem among three schemes
- Poor condition of record keeping including internal regulation
- Low cognition of FO and political interference as problem identified at Nachchaduwa
- Poor financial management, insufficient water, weak legal framework, and encroachment reservation as problem identified at Rajangana

In conclusion, the FOs were actually established as planned, and basic activities such as election of official bearers of FO, attendance and discussion including distributing information of Kanna Meeting and PMC, FO committee meeting held have been implemented. Rehabilitation works, micro credit and fertilizer distribution have been implemented as FOs' activities, but their scale is still small with some sort of government support. In other words, their activities are still kept as passive consciousness, and there is then a large room to improve FOs' basic activities, namely record keeping, monthly committee meeting, involvement of youth and women, and so on, as well as development activities as income generation.

Table C 3.2.1 The Condition of the FOs Activities at the Study Area

Scheme		Nachchaduwa	Thuruwila	Rajangana	Total
Plan (%)	Development	0	0	0	0
	Rehabilitation	64	100	17	40
	Agricutural	0	100	50	40
	Water Distribution	0	0	30	30
	Total	17	50	29	25
Present Major Activities of FO (%)	Water Distribution	100	100	100	100
	O & M	33	100	33	40
	Agricutural Input	33	0	17	20
	Micro Credit	0	100	17	20
	Resolving disputes	0	0	17	10
	Total	33	60	37	30
Major Problems of FO Activities	Major Problems	- Low Participation of - Low Cognition of FO - Political Interference	- Low Participation of	- Low Participation of - Poor Financial Resources - Insufficient Water - Weak legal Framework - Encroachment of Reservation	
Development Activities	Contract Rehabilitation	100	100	67	80
	Micro Credit	0	100	33	30
	Group Purchasing and Marketing	0	0	17	10
	M & E	0	0	0	0
	total	25	50	29	35
Proposed Activities of FO		Nil	Nil	Group purchase and selling Contract of Rehabilitation Strengthening FO (Training) Paddy Seed Arrangement Livestock Management	

Source: Field Survey of FO (activities) (January & February 2006)

3.3 Present Activities of target FCGs

It can be said that implementation capacity of FCGs is very weak except 'Shramadana' (labour donation) to clean Field Canal and D-Canal. In fact, most of FCGs have not regularly held monthly meeting of FCG as shown in **Table C 3.3.1.** Period of FCG president is shorter than that of FO president.

Moreover, some of the FCGs consist of few farmers (less than 5 farmers) that cannot properly operated as a group, according to the FO Sample Survey. In fact, some of FCGs have not substantially taken an active role. For example, 3 out of 11 FCGs in Tissa FO at Nachchaduwa, 2 out of 26 FCGs in Perakum FO at Rajangana, and so on are no longer substantially active, according to interviews with each official bearers. Thus, reorganizing number of FCGs from few to larger number (more than 15 farmers) is required.

The FCGs have very limited activities and weak capacities at the moment as follows:

- Selection of a representative of the FCG to be a member of the FO committee
- To bring related information on FO Committee Meeting, PMC, and so on to the members
- To present various requirement from the member of the FCG to PMC etc. by representative of FCG

- Not much formal meetings held
- Some of the FCGs being less than 5 members
- Very limited of activities toward D and F canal rehabilitation work except cleaning canal as 'Shramadana'

Table C 3.3.1 The Condition of The FCGs' Activities at the Study Area

	Scheme		Nachchaduwa	Thuruwila	Rajangana
FCG	President	Age (year)	45	51	52
		Serviced Period (year)	9	6	7
	FCG Meeting	How Often	As required	As required	As required
	Village Community	Member from Same Village (%)	0	0	83
		Operators from Same Village (%)	0	0	33
	Suggestion	To improve FCG activities	- Training Arrangement - Incentive Arrangment - Importance of FO	- Involvement of Youth - -	- Training Arrangement - Incentive Arrangment - Assistance FCG member More FO's (legal) control to FCG

Source: Field Survey of FO (January and February 2006)

3.4 Characteristics of the FOs at Nachchaduwa, Thuruwila, and Rajangana

Differences of FO activities between Nachchaduwa, Thuruwila, and Rajangana are very limited. They have faced common problems regarding FO such as weak organizational management, limited activities, and low involvement of operators, youth and women. However, following points are identified as differences between Nachchaduwa, Thuruwila and Rajangana scheme:

FO

- Establishment and holding of sub-PCM at Rajangana, but no sub-PCM at Nachchaduwa and Thuruwila
- The rate for number of FO members to operators amount is higher at Nachchaduwa than at Rajangana
- The rate of the Monthly Committee Meetings is better at Nachchaduwa than at Rajangana
- The active condition of plan formulation, major activities, and development activities is better at Rajangana[9] than at Nachchaduwa
- The amount of cash in hand and deposit bank per a FO is better at Rajangana that at Nachchaduwa

FCG

- The rate for living at the same village as the member of FCG and the operators is better at Rajangana than at Nachchaduwa

9 The condition of FO regarding plan formulation and activities is best performance among three schemes, but it is not reasonable to compare equally them due to Mahanama FO as only one FO at Thuruwila scheme.

Chapter 4 INSTITUTIONAL CONDITION TO THE FOS

4.1 Stakeholder Analysis regarding FO

There are two institutional field related to FO, namely village organizations, and government agencies. With respect to village organizations, FO and FCG, Farmer Company, Funeral Assistance Committee, Samurdhy Society, Particular Production group, Women Group, Youth Group and so on are nominated. The function and activity of the village organizations differ from village to village. The Funeral Assistance Committee can be generally said as the most active organization. For example, there are activities under the Funeral Assistance Committee such as support to funeral ceremony, arrangement of micro credit, various activities based on women and youth education (alcohol prevention). In addition to representatives of village organizations, leaders of religious groups, teachers, agricultural traders are also important stakeholders related to multifunction of FO.

On the other hand, following government officials are nominated as related to FO:

Under IMD (Irrigation Management Division)

- RPM (Resident Project Manager), IDO (Institutional Development Officer), DA (Development Assistance)

Under ID (Department of Irrigation)

- IE (Irrigation Engineer), EA (Engineer Assistance)

Under ASC (Agrarian service Center)

- DO (Divisional Officer) and ARPA (Agriculture Research and Productivity Assistance) under Department of Agrarian Development, AI (Agricultural Instructor) under Department of Agriculture

Under Divisional Secretary (AGA)

- Divisional Officer, Land Officer, Colonial Officer, and GN (Grama Niladhari)

RPM in nominated large irrigation scheme is responsible for Kanna Meeting to discuss about crop calendar and water distribution, and PMC (Project Management Committee) to discuss about various issues arisen from representatives of FO with irrigation engineer from ID, AI, DO, and related government officers. There are many issues at PMC presented by FOs' representatives such as water distribution, crop calendar, broken facilities, canal rehabilitation, land issues, conflict between farmers and pasturage groups, and so on. Sub-PMC is held in some large irrigation schemes such as Rajangana scheme. Former Cultivation Meeting was replaced by PMC. Agrarian Development Committee (ADC) chaired by representative of FO with selected representatives of FO, DO, AI, RPM, Agriculture Insurance representative, and

Representative of Coconut by using meeting room and facilities such as storage, and shop under Agrarian Service Centre. ARPA is closely related to activities of FO in the village level. Major roles of ARPA are to collect data, strengthen FO, make bridge between AI as extension officer and farmers, arrange crop insurance, and collect acreage-tax. Divisional Development Committee chaired by Divisional Secretary (AGA) is monthly held, but representatives of FOs do not attend it.

4.2 The Roles and Condition of Official Meetings for FO

There are three official meetings related to FO, namely Kanna Meeting, PCM under IDM, and ADC. In addition, FOs are sometimes required to attend Divi.DC. The Field Survey (see **Table C 4.2.1**) identifies the following points:

Kanna Meeting

- Attendance and useful identified as very importance
- However, low participation of farmers, poor implementation of decisions, less covering crucial issues, and inconvenience of meeting venue and time identified as problems

PCM

- Attendance and useful identified as very importance
- However, low participation of farmers and agencies, poor implementation of decisions, improper agenda, and less man power of agencies

Agrarian Development Committee

- Attendance and useful identified as importance
- However, low participation of farmers and agencies, poor implementation of decisions, poor supervision (communication), and too many meetings identified as problems

Divisional Agriculture Committee

- Attendance and useful identified as less importance
- Poor implementation (not practical solution) of decisions, and less transparency procedure (improper record) identified as problems

Thus, Kanna Meeting, and PCM are identified as very importance meeting for farmers and FO in the field of irrigation and agriculture. However, weak solving problem mechanism, low participatory of farmers and agencies, and improper procedure (agenda selection) are identified as problems. Most of the issues at PMC cannot be solved by RPM and IDO, and it is then necessary to coordinate with other line agencies. In other words, problems solved mechanism is very weak, partly because there is different between coordinated agency and implementation agency. Some of the FOs, particularly from Left Bank at Rajangana scheme,

are far from Rajangana IMD Office as meeting place, and meeting place and time are then suggested by them.

Table C 4.2.1 Condition of Official Meetings identified from the FOs

Scheme		Nachchaduwa	Thuruwila	Rajangana
Kanna Meeting	Attendance & Useful %	100	-	100
	Problems identified by FO	Low Participation of Farmers		Low Participation of Farmers
		Decisions Changed by Individual Needs		Decisions not quickly implementated
		Less Covering Majority's Opinion		Inconvenient Meeting Venue and Time
PMC Meeting	Attendance & Useful %	100		100
	Problems identified by FO	Low Participation of Farmers		Low Participation of Agencies
		Decisions not Implemented		Decisions not Implemented
		Improper Agenda		Lack of Agencies Man power
Agra. Development Committee	Attendance %	67	100	83
	Useful %	0	100	80
	Problems identified by FO	Decisions not Implemented		Low Participation of Agencies
		Poor Supervision		Low Participation of Farmers
		Too Many Meeting		Lack of Communication
Divisional Agri. Committee	Attendance %	33	100	50
	Useful %	0	100	0
	Problems identified by FO	Decisions not Implemented		Decisions not Implemented
				Lack of Record Keeping
				No Transparency
				Not Practical Solution

Resource: Field Survey FO (Activities) (January & February 2006) by the JICA Study Team

4.3 The Roles and Condition of Government Agencies for FO

As mentioned earlier, the activities of FOs have been mainly supported by different line agencies including RPM, IDO, and DA in IMD and IE, and EA in ID, namely DO, ARPA, AI, Land Officer, GN, Samurdi Officer, and AGA in the fields of irrigation, agriculture, marketing, and institutional management. IMD is in charge of coordination for FO activities in 45 large irrigation schemes nominated by the INMAS program. DO, ARPA and AI under ADC is in charge of agricultural production and marketing.

ARPA, GN, and Samurdhi Officer are closely related to daily activities of village organizations including FO, although IDO under IMD is in charge of FO in terms of coordination and

capacity building for FO. ARPA alone might be a possible agency with IDO and RPM for FO, because GN and Samurdhi Officer are in charge of daily matters of villagers. However, ARPA works under DO at ADC, and ARPA is not trained as institutional facilitator. In addition, an IDO has to cover 59 FOs at Rajangana scheme. Thus, it is very difficult for the IDO to support sensitively the activities of the FOs.

According to **Table C 4.3.1**, the roles of IMD, ID, ADC, AD (AI), and land officer (DS) are clearly mentioned as follows:

IMD

- Coordination agency
- Water Management
- Assistance to solve farmers' problems
- Administration support
- Training

ID

- Water management
- Maintenance and rehabilitation works
- Technical support (irrigation)
- Monitoring (irrigation)

ADC (DO, ARPA)

- Agricultural input
- Micro credit support

AD (AI)

- Technical support (agriculture)
- Training program

DS (land officer)

- Land issue
- Not much relation to the FOs

As mentioned earlier, implementation of these roles is relatively weak such as weak solving problem mechanism (poor coordination and poor implementation), and low participatory of farmers and agencies.

Table C 4.3.1 Received Services of the Agencies to the FO

		Nachchaduwa	Thuruwila	Rajangana
Received Services From the Agencies	IMD	Coordination with Other Agencies	Assistance to Solve Farmers' Problmes	Coordination with Other Agencies
		Water Management Activities		Water Management Activities
		Assistance to Solve Farmers' Problmes		Assistance to Solve Farmers' Problmes
		Administrative Work		Administrative Work
		Training		Training
	ID	Water Management Activities	Water Management Activities	Water Management Activities
		Maintenaance/ Rehabilitation Works	Maintenaance/ Rehabilitation Works	Maintenaance/ Rehabilitation Works
		Monitoring		Technical Assistance
				Legal Assistance
	ADC (DO, ARPA)	Agricultural Input Support	Agricultural Input Support	Agricultural Input Support
		Credit Support	Credit Support	Credit Support
	AD (AI)	Technical Assistance	Technical Assistance	Technical Assistance
		Training Program	Training Program	Training Program
	DS (Land Officer)	Land Issue Suppoer	Land Issue Suppoer	Land Issue Suppoer
		No much support	No much support	No much support

Resource: Field Survey FO (January & February 2006) by the JICA Study Team

Chapter 5 PROBLEMS ANALYSIS BASED ON PROBLEM TREES

Three PCM (Project Cycle Management) workshops were held in the field of irrigation and agriculture dated January and February 2006. Three groups were related government agencies (roughly 25 participants except the JICA Study Team members), representatives of Sri Udara FO (roughly 16 participants) at Rajangana Irrigation Scheme, Tissa (4 participants) and Isuru FO (5 participants), and Thuruwila (3 participants) at Nachchaduwa and Thuruwila Irrigation Scheme respectively.

5.1 Problems Analysis based on Government Agencies

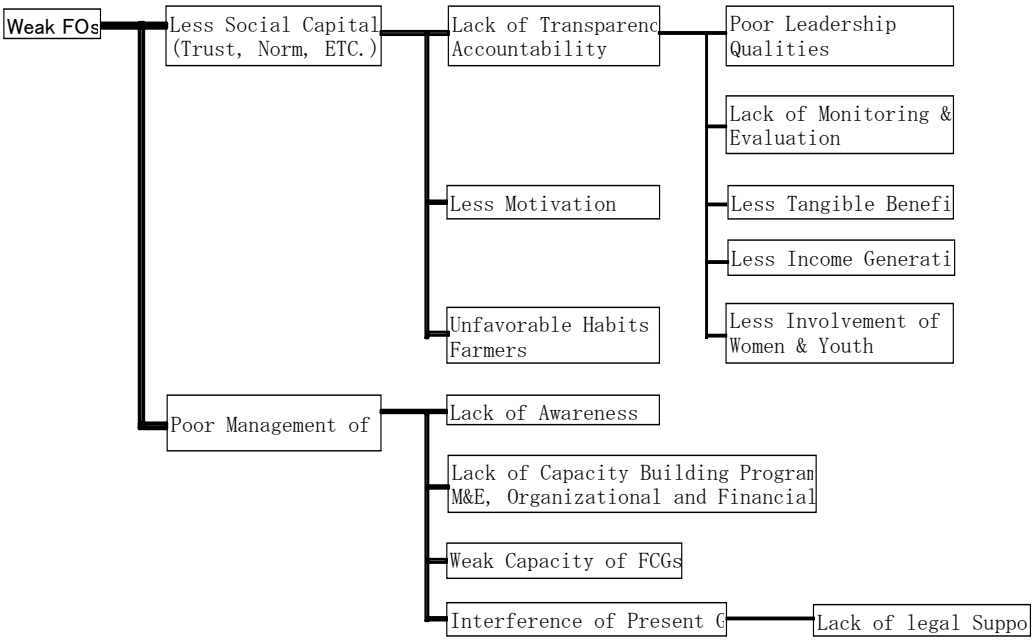
According to **Figure C 5.1.1**, less social capital, namely trust, norm, and habitat, and poor management of FOs in the field of FO were identified by related government agencies in the PMC workshop. Less social capital is caused by lack of transparency and accountability, less motivation, and unfavorable habits of farmers. Lack of transparency and accountability is caused by poor leadership qualities, and lack of monitoring & evaluation. Less motivation is caused by less tangible benefits, less income generation, and less involvement of women and youth. Thus, following problems are identified as key problems for weak FO:

Weak Social Capital

- Lack of transparent and accountability
- Poor leadership quality
- Lack of M&E
- Less tangible benefits and less income generation
- Less involvement of women and youth
- Less motivation
- Unfavorable habits of farmers

Poor Management of FO

- Lack of awareness and capacity building program for FO
- Weak capacity of FCGs
- Interference of present groups
- Lack of legal support



Resource: PCM Workshop for Related Government Agencies (30 & 31st January 2006)

Figure C 5.1.1 Problem Trees for FO Formulated by Related Government Agencies

5.2 Problem Analysis based on the FO at Rajangana

According to **Figure C 5.2.1**, weak FO is caused by weak unity of farmers, weak coordination between government officers and farmers, weak government support for FO, and less implementation of Kanna Meeting decision. Weak unity of farmers is caused by less respect to old tradition, less participatory of lease & tenant farmers to FO, and less participation of farmers to FO. Thus, following problems are identified as key problems for weak FO:

Weak Social Capital

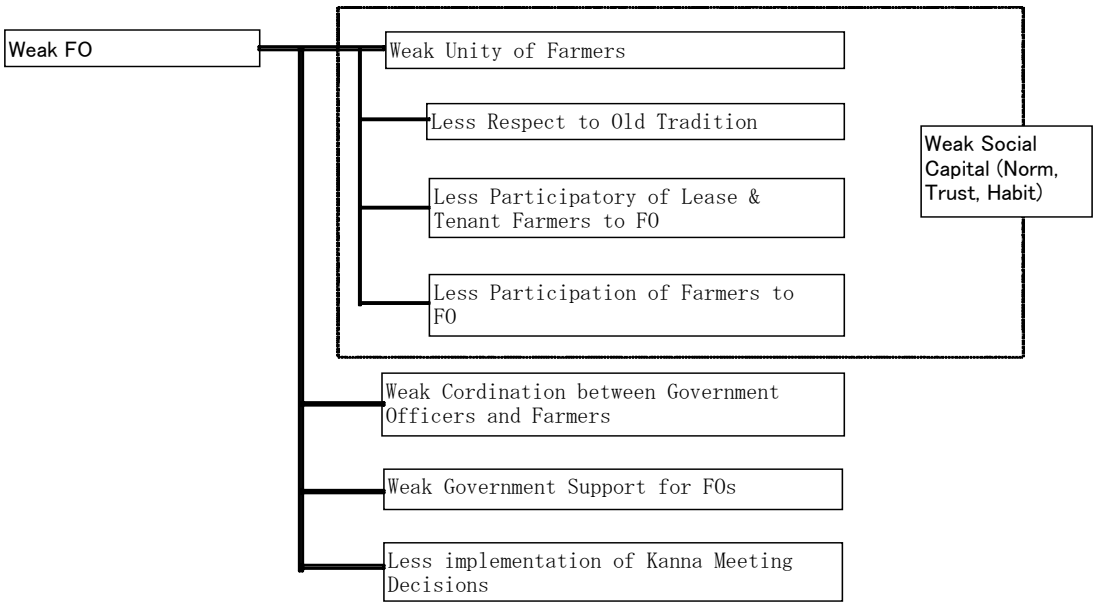
- Weak unity of farmers
- Less traditional values
- Less involvement of lease & tenant farmers to FO
- Less participatory of FO members

Weak government support

- Lack of coordination between government officers and farmers
- Weak government support

Weak legal support

- Less respect to agreed matters in Kanna meeting



Resource: PCM Workshop for Sri Udara FO at Rajangana (2 & 3rd February 2006)

Figure C 5.2.1 Problem Trees for FO formulated by Sri Udara FO

5.3 Problem Analysis based on the FOs at Nachchaduwa and Thuruwila

Two problem trees were formulated by PMC workshop for three FOs at Nachchaduwa and Thuruwila dated 7 and 8th February 2006. Three FO are Tissa and Isuru FO under Nachchaduwa Irrigation Scheme, and Thuruwila FO under Thuruwila Irrigation Scheme. According to ** and **, weak FO is caused by poor participation of farmers to FO, poor implementation of FO, and political influence. Poor participation of farmers to FO is caused by less involvement of farmers, weak unity of FO, and not tangible benefits from FO. Poor implementation of FO is caused by disobey of Kanna Meeting's decision, not paying member fee, poor benefit from FO, improper behaviour of outsider farmers, no fund, and difficulties in implementation of roles and regulations of FO. Various types of cultivator, namely few full time farmers, few owner cultivators, OFC cultivators isolated from FO, seasonal cultivators, and less youth participatory. Various types of cultivator as characteristic of Nachchaduwa and Thuruwila Irrigation Scheme is different from condition of Rajangana Irrigation Scheme. Thus, following problems are identified as key problems for weak FO:

<u>Poor Participation of Farmers</u>

- Less involvement of farmers caused by various types of cultivator
- Weak unity of FO members as weak social capital
- Weak membership relationship

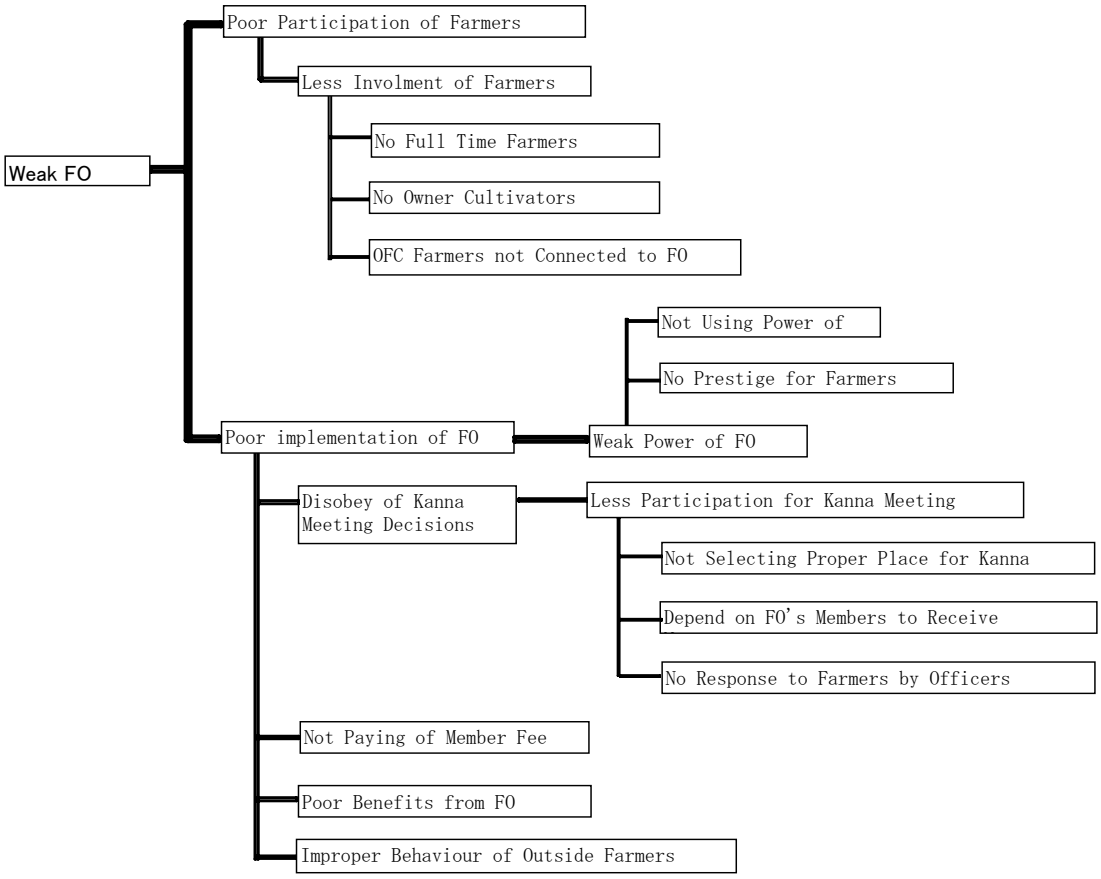
- Weak team work
- Not tangible benefits from FO

Poor implementation of FO

- Poor respect to Kanna meeting's decision
- Less participation for Kanna meeting
- Not paying member fee
- Poor benefits from FO
- No fund

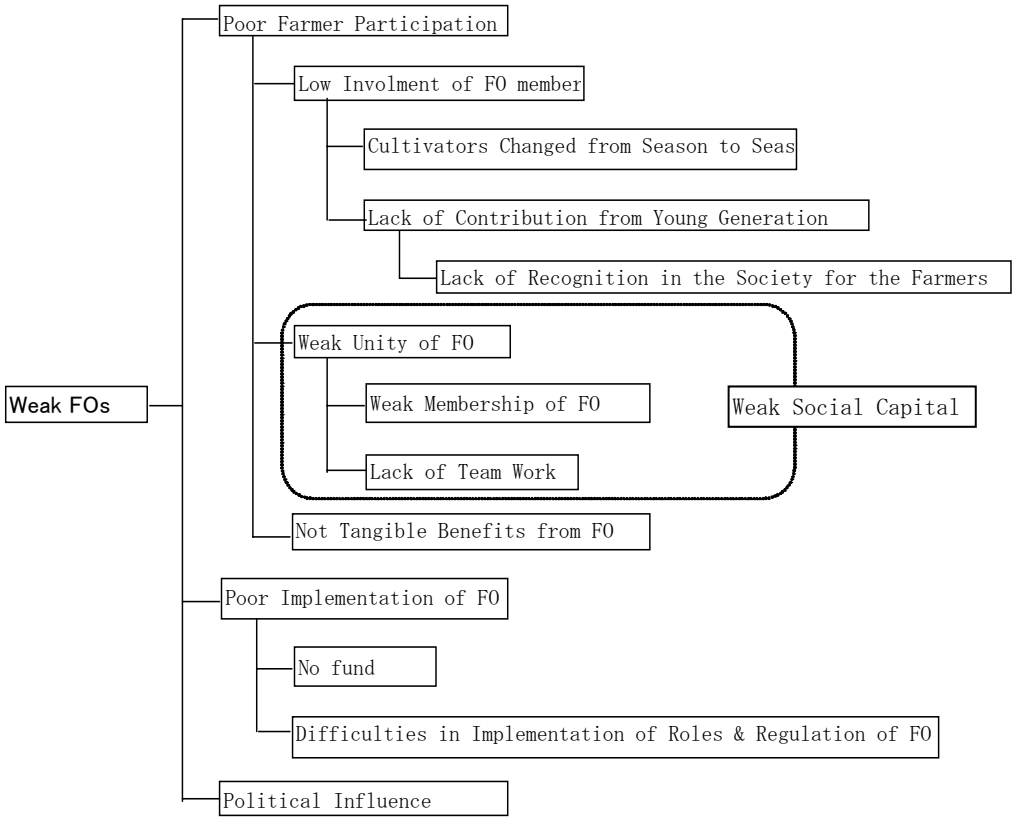
Political influence

- Political influence to FO activities



Reource: PCM Workshop for targeted Nachchaduwa & Thuruiwila FOs (7 & 8 February 2006)

Figure C 5.3.1 Problem Trees A for FO formulated by 3 FOs at Nachchaduwa and Thuruwila Irrigation Scheme



Reource: PCM Workshop for targeted Nachchaduwa & Thuruiwila FOs (7 & 8 February 2006)

Figure C 5.3.2 Problem Tree B for Formulated by 3 FOs at Nachchaduwa and Thuruwila Irrigation Scheme

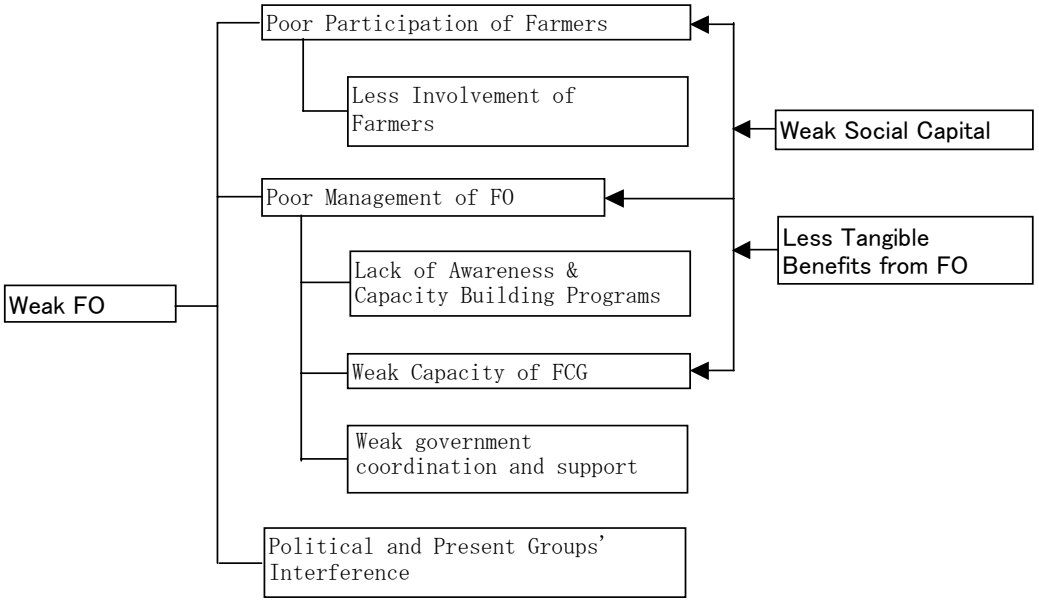
5.4 Integrated Problem Tree

In conclusion, major problems can be divided into four groups, namely weak social capital[10], less tangible benefits from FO, poor participation of farmers, and poor management (implementation) of FO as shown in **Figure C 5.4.1**, according to **Figure C 5.1.1**, **C 5.2.1, C 5.3.1, and C 5.3.2**. In addition, political and present groups' interference can be called as external condition. It can be also said that present groups' interference is an outcome of weak social cohesion in a irrigation scheme area. Less implementation of Kanna Meeting decisions is identified as a crucial problem by the different problem trees, while the less implementation is named as one of phenomena as poor implementation. Less implementation

10 There are several definition of social capital. According to World Bank (World Bank 1999: 'what is Social Capital?'), social capital refers to the institutions, relationships, and norms that shape the quality and quantity of a society's social interactions. Please refer to http://www.worldbank.org/poverty/scapital/whatsc.htm. With respect to social capital in organization social capital consists of the stock of active connections among people: the trust, mutual understanding, and shared values and behaviours that bind the members of human networks and communities and make cooperative action possible (Cohen D. and Prusak L.2001: In Good Company (Boston: Harvard Business School Press).

of Kanna Meeting in the field of irrigation and agriculture can be very important for related members of FOs and government agencies.

Poor participation of farmers, poor management (implementation) of FO, and weak capacity of FCG are mainly caused by weak social capital and less tangible benefits from FO.



Resource: The JICA Study Team

Figure C 5.4.1 Integrated Problem Tree from Three PCM Workshops

The following points are identified as different characteristics between Rajangana and Nachchaduwa & Thuruiwila:

Rajangana

- Weak unity of farmers clearly mentioned including value of tradition
- Weak government support to FO mentioned
- Poor implementation of Kanna Meeting decisions

Nachchaduwa & Thuruiwila

- Weak social capital also mentioned
- Less involvement of farmers caused by less full-time farmers and less owner cultivators (led to land issues) mentioned
- Weak power of FO caused by weak prestige and weal legal awareness mentioned
- Poor implementation of Kanna Meeting decisions also mentioned
- No mention about roles of government agencies

The following points are identified as different characteristics between farmers/ FO and related government agencies:

Government agencies

- Weak social capital concretely mentioned
- Poor management of FO mentioned
- Necessity of transparency & accountability in FO concretely mentioned
- Necessity of awareness and capacity building programs for FO mentioned
- Weak capacity of FCG as crucial point mentioned

FO

- Weak social capital also mentioned
- Poor participatory of farmers mentioned
- Less involvement of farmers concretely mentioned
- Poor implementation of FO mentioned
- Weak government coordination and support mentioned

Chapter 6 PROBLEMS AND CONSTRAINTS OF THE FOS IDENTIFIED FROM THE SURVEYS AND PROBLEM TREE

Present situation at the target schemes can be divided into six categories such as participation, management, lack of unity, government agencies, activities, and external condition. There are particular characteristics at Nachchaduwa and Thuruiwila, and Rajangana scheme. Problems and issues identified from the Present Situation mainly based on key-stakeholders interviews, the Field Survey of the FOs, and various sources such as data from Nachchaduwa and Rajangana IMD, the Integrated Monthly Progress Report at Nachchaduwa and Rajangana ADC, and the FO Sample Survey at Rajangana as well as the Problem Tree Workshops are shown in **Table C 6.1.1**.

Table C 6.1.1 Present Situation and Problems for Farmers' Organization (1/3)

Farmers' Organization (FO)

Category	Present Situation	Problems Description
1. Participation : Membership involvement	Common Phenomena FO ・ Less involvement of operators as the member of FO FCG ・ Some of the FCGs are less than 5 members	FO ・ Almost of operators is not recognized as the member FCG ・ Too few members in some FCGs as organization
2. Management	FO formulated as planned, but management including basic organized information of FO is basically weak.	
2.1 Basic Information/ Document/ Record	Common Phenomena ・ All of the FOs was officially registered ・ Internal regulation was formulated as necessary document for official registration, but most of the FOs (except Isuru FO) have never changed it from original official form. ・ Most of the FOs cannot present their internal regulation. ・ Different information of numbers of FO and FCG provided by the official bearers ・ Bank deposit and cash in hand have been checked by ARPA under ADC, but some of them (7.1% at Nachchaduwa 15.6% at Rajangana gravity) cannot be checked.	FO ・ Weak organized information (even numbers of FO) ・ Weak document recorded
2.2 Basic procedure/ official bearers	Common Phenomena ・ All of the FOs' official bearers has been elected by the official meeting. ・ However, service of the FOs' President and Treasurer is much longer (approx. 20 years) ・ Service of the FOs' Secretary is longer (approx. 12 years) ・ Very few of youth (20's) involvement (approx. 2%) as the FOs' official bearers ・ All of the FOs' official bearers except Ranketha FO at Nachchaduwa is man only.	FO ・ Longer service period of FO's official bearers, particularly president ・ Less involvement of youth and women as the official bearers
2.3 Official Meetings	Common Phenomena/ FO ・ Most of the representatives of FOs have regularly attended at Kanna Meeting, and PMC ・ However, there is a room to improve running of the above meetings, namely agenda selection, and active discussion ・ Poor implementation of decisions at the above meetings ・ Most of FO monthly committee meeting are held, but some of the FOs (14% at Nachchaduwa, and 22% at gravity system at Rajangana) are not regularly held	FO and government agencies ・ Improper running of Kanna Meeting and PMC ・ Poor implementation of decisions at Kanna Meeting and PMC ・ No sub-PMC established at Nachchaduwa and Thuruwila establishes in dealing with more detailed issues
	Particular Characteristics at Nachchaduwa and Thuruwila ・ No sub-PMC establishes to deal with more detailed issues like land issue	
	Particular Characteristics at Rajangana ・ Sub-PMCs except Track 7 at LB were established at Rajangana	
	FCG ・ Formal FCG meeting is not regularly held, as required.	FCG ・ Formal FCG meeting is not

Table C 6.1.1 Present Situation and Problems for Farmers' Organization (2/3)

Category	Present Situation	Problems Description
		held
3. Unity based on social capital	Common Phenomena ・ Less respect for traditional custom ・ Less involvement of operators as member of FO ・ Less willingness of farmers' participatory to FO ・ Low prestige of FO's official bears to farmers, particularly at Nachchaduwa (weak trust between the officials and the members)	FO (and FCG) ・ Lack of unity as member of FO ・ Poor trust between the official bearers and the members
	Particular Characteristics at Nachchaduwa and Thuruwila ・ 37% of employment is the agriculture sector ・ 70% of irrigated farm is operated as non member under tenant or lease at Nachchaduwa ・ 48% of irrigated farm is operated under tenant or lease at Thuruwila	・ Lower involvement of operators as the member at Nachchaduwa
	Particular Characteristics at Rajangana ・ 55% of employment is the agriculture sector ・ 9% of irrigated farm is operated as non member under tenant or lease at Rajangana	
4. Government Agencies (From FOs' view)	Common Phenomena ・ Roles of the agencies (IMD, ID, ADC, etc.) are clearly understood by the FOs ・ Very weak government coordination among line agencies ・ Insufficient support from the agencies for FOs ・ Requirement to arrange more transparency procedure of contracted rehabilitation work and technical supervision ・ No Monitoring and Evaluation system ・ Requirement to arrange various trainings including awareness and capacity development programs to the FOs	Government agencies ・ Insufficient government coordination ・ Insufficient training of the agencies ・ Insufficient transparency procedure of the contracted rehabilitation work and technical supervision ・ Insufficient M & E system
5. Activities	Common Phenomena/ FO ・ Major present activities: water distribution management, canal O & M including rehabilitation work ・ Most of the FOs have implemented the above activities ・ Some of the FOs have carried out development activities (fertilizer distribution and micro credit), but those activities are mostly supported by government programs through the FOs	FO ・ Very limited development activities ・ Passive attitude for development activities
	FCG ・ Major roles of FCG are to convey related information from the above meeting to FCG members, and to arrange cleaning F canal as 'Shramadana'	・ Very limited roles of FCG
	Particular Characteristics at Nachchaduwa and Thuruwila ・ Not popular (21%) 'Shramadana' ・ Poor collection of O&M Fee (0%) ・ Appointment of water master at Nachchaduwa (50%), and at Thuruwila (100%) ・ Less development activities	・ Lack of grouping activities such as 'Shramadana', particularly at Nachchaduwa

Table C 6.1.1 Present Situation and Problems for Farmers' Organization (3/3)

Category	Present Situation	Problems Description
	Particular Characteristics at Rajangana ・ Less development, but better condition than at Nachchaduwa & Thuruiwila (contracted rehabilitation only at Nachchaduwa, micro credit and group purchasing & marketing at Rajangana) ・ Good condition of 'Shramadana' (94%) at gravity system ・ Better condition (17-25%) of O&M collection fee at gravity system ・ Appointment of water master at gravity system (91%)	
6. External Condition	Common Phenomena ・ Political interference, particularly at Nachchaduwa ・ Changed policy to provide confusion for the FOs	・ Political interference and confusion provided by changed policy can be identified as external condition

Chapter 7 BASIC APPROACH TO THE PLAN TO INCREASE THE CAPACITY OF INTEGRATED MANAGEMENT FOR FO

As earlier mentioned in **Table C 6.1.1**, the problems are identified from present situation and problem trees formulated at the PCM workshops. The problems can be categorized by three major problems (issues) caused by lack of unity, poor support from the government agencies, and limited activities/ less tangible benefit to FO members as shown in **Figure C 7.1.2** and **Table C 7.1.1**. Three major problems (issues) are as follows:

- Poor participatory
- Poor management
- Policy and political interference as external condition

In other words, poor participatory and poor management are substantially caused by the above causes (issues) within external condition. The key factors of organizational management are organizational unity based on social capital (norm, trust, and custom built by organizational members or community members), and activities as an opportunity to change and improve consciousness and attitudes of the members/ tangible benefit provided by activities to the members as incentive as shown in **Figure C 7.1.1**.

Figure C 7.1.1 shows the process of interaction between trainings and activities for increasing social capital. The members can learn knowledge, awareness, and skill through trainings. The knowledge, awareness, and skill can be taken root through actual activities as practice. As a result, the more social capital at a target group or a community can be built, the more complex activities with more members involved can be carried out. The type of activity in a group or a community generally can be changed and improved from basic group activities such as social activity to large organization with emphasis on economic oriented activity. The whole process has to be basically implemented by facilitation in building eventually self-help culture in an organization like FO or FCG.

According to **Table C 6.1.1** and the interview (November 2005), social capital, particularly social cohesion, is weaker at Nachchaduwa scheme than at Rajangana. Although it is difficult to identify indication of social capital, particularly in quantitative scale, the weakness might be identified by much better condition at Rajangana in term of participated rate of 'Shramadana', collection rate of O&M Fee, and appointment rate of water master except holding rate of monthly committee meeting.

In addition, the rate of employment in agriculture, the rate of land operator under tenant & lease[11] who are not generally registered as FO members, average operation land size, and rate of other crops in Maha to paddy are 37%, 70%, 1.1ha and 17% respectively at Nachchaduwa and 55%, 25%, 0.65ha and 10% at Rajangana. It can be said that land intensive agriculture mainly operated under tenant & lease, and crop diversification is more popular at Nachchaduwa in comparison with the condition of Rajangana, although the rate of employment in agriculture is higher at Rajangana. Nachchaduwa has been also influenced by urbanization due to beside Anuradhapura Town. Those findings might indicate that building of social capital in FO is more difficult at Nachchaduwa than at Rajangana.

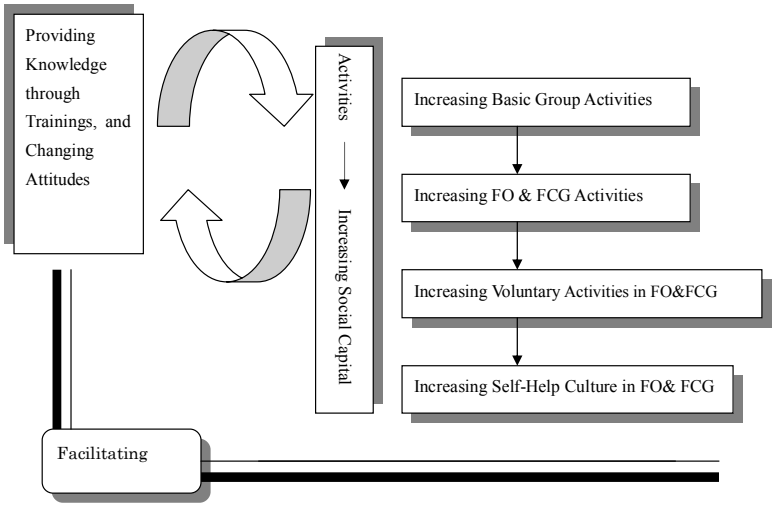


Figure C 7.1.1 The Interactive Process of Training and Activities for Increasing Social Capital

Source: the JICA Study Team

There are three approaches related to Farmers' Organization, that is, Encourage Participatory Approach, Basic Management Improvement Approach, and Strengthen Social Capital Approach. Government Capacity Building Approach is for government agencies. As mentioned earlier, Income Generation Approach can be depended mainly upon proposed activities of irrigation, agriculture, and marketing income generation approach. Thus, Encourage Participatory Approach, Basic Management Improvement Approach, and Strengthen Social Capital Approach are to support substantially capacity building of FO and FCG. Basic Management Improvement Approach can cover the objectives of Encourage Participatory Approach, and these Approaches can be discussed together as an approach.

The following components of the approached can be identified as shown in **Table C 7.1.1**:

Basic Management Approach

- Awareness of basic management including basic regulation, the roles of the official bearers,

11 It is informed that there are many seasonal operators (only one crop) at Nachchaduwa.

and legal formulation

- Awareness of youth and women encouraged

Strengthening Social Capital Approach (see **Figure C 7.1.1)**

- More building basic grouping activities at Nachchaduwa
- Integrated trainings with planned practice or the proposed activities with emphasis on more transparency of procedure and activities process for increasing social capacity

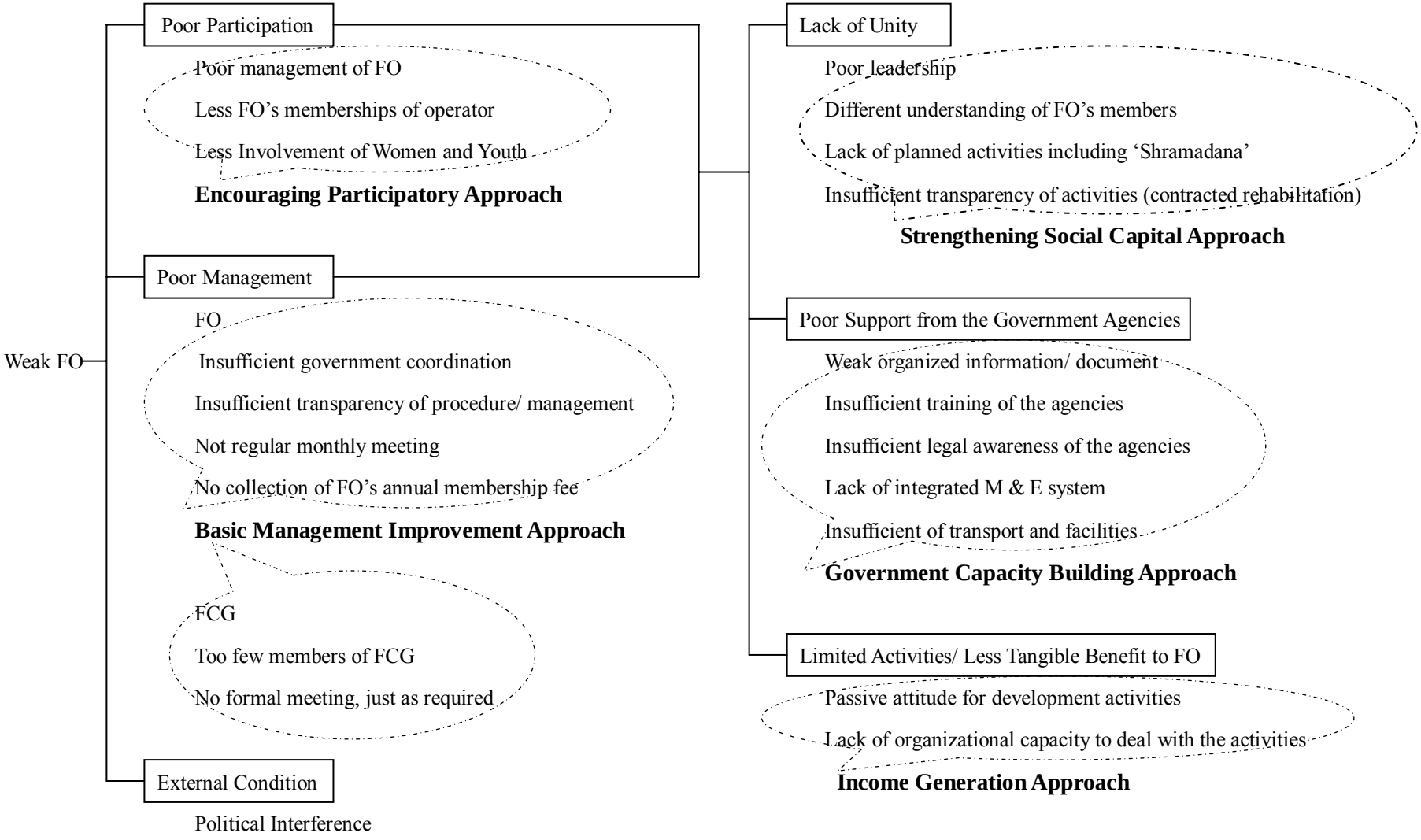


Figure C 7.1.2 Problems and Causes for Basic Approach in Farmers' Organization Source: the JICA Study Team

Table C 7.1.1 Approach to Improve the Present Constraints and Problem

Farmers Organization (FO)

Category	Problems and Issues (key words)	Approach	Target Group
1. Poor Participation	• Operators not being the member of FO • Few members in some FCG	**Encouraging Participatory Approach** • Awareness of basic regulation • Shared information of legal formulation	FO and FCG
2. Poor Management	• Weak organized information/ document • Longer service period of the official bearers • Less involvement of youth and women • Poor implementation of decisions at Kanna Meeting and PMC	**Basic Management Improvement Approach** • Awareness of basic management including the roles of the official bearers • Awareness of youth and women encouraged	FO and FCG
3.Lack of Unity based on social; capital	• Different understanding and expectation of FOs' members • Lack of planned activities • Insufficient transparency of activities	**Strengthening Social Capital Approach** • Integrated training with planned practice • More transparency of procedure and activities process in practice • More building basic grouping activities at Nachchaduwa	FO and FCG
4. Limited Support from the Government Agencies	• Insufficient government agencies • Insufficient training of the agencies • Insufficient transparency procedure • Insufficient M & E system	**Government Capacity Development Approach** • Capacity development training for the agencies • Awareness of legal formation • Formulation of integrated M & E system	Related government agencies
5. Limited Activities/ Less Tangible Benefit to FO	• Lack of grouping activities such as 'Sharamadana' • Very limited development activities	**Income Generation Approach** • Depending mainly upon irrigation, agriculture, and marketing income generation approach	FO and FCG, related government agencies, and other groups

Appendix D

Marketing

APPENDIX D MARKETING

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APPENDIX D MARKETING

Chapter 1 MACRO-LEVEL MARKET INFORMATION

1.1 Introduction

The study intends to finding out the existing agricultural marketing system in the Study Area. The main focus of the study is based on identifying marketing structures, marketing channels and main marketing problems in the Study Area. The data and findings of the Study are used in the preparation of structural development plan to introduce innovative intervention to upgrade the living standards of the farming communities in the area.

1.1.1 Objectives

The main objective is to provide basic information on the marketing of agricultural commodities in the Study Area.

1.1.2 The Methodology

The methodology adopted in the Study was based on reviewing published secondary data and undertaking a survey to obtain primary information. Secondary information was used to obtain the macro level picture of the targeted agricultural commodities and primary information which was based on Participatory Rural Appraisal (PRA) techniques were used to get micro level picture and on how field level marketing channels linked with national agricultural system.

1.1.3 Direct Observation and Meeting Key Informants

Direct observations were made during transaction walks and when meeting with farmers, stakeholders such as rice millers, traders, collectors and Government officials. Meetings were also held with farmer leaders/representatives, village traders, outside traders/collectors, commission agents, wholesalers, retailers, consumers and other related individuals.

1.2 Macro-level Market Information

In Sri Lanka, the primary emphasis of the agriculture policy of the Government was placed on the achievement of the self-sufficiency of rice through the development of paddy land irrigation scheme since the independence. By the mid-1980's, the target of self-sufficiency of rice was achieved and then the priority of government's agricultural policy was shifted to the diversification of the products from rice to other agricultural products.

Though annual fluctuation of the domestic rice production occurs, the self-sufficiency of

rice has increased to about 95 percent (See **Table D 1.2.1**). But farm gate prices of paddy are not attractive to farmers under the continuous increase of agricultural inputs and labors cost (See **Table D 1.2.2**).

Table D 1.2.1 Rice production, Imports and Consumption

Year	①Production* ('000ton)	②Imports ('000ton)	③Import ratio (②/①) %	④Consumption ('000ton)
1994	1,745	58	3.3	1,709
1995	1,826	9	0.5	1,728
1996	1,340	341	25.4	1,749
1997	1,455	306	21.0	1,770
1998	1,750	167	9.5	1,794
1999	1,856	214	11.5	1,821
2000	1,859	14	0.7	1,847
2001	1,751	51	2.9	1,873
2002	1,859	95	5.1	1,901
2003	1,996	28	1.4	1,925
2004	1,717	314	18.3	NA

Note: * Production figures are of milled rice calculated as 65% of paddy production.
Source: Hector Kobbekaduwa Agrarian Research and Training Institute)

Table D 1.2.2 Relative Price of Rice

Ratio (Rice price/input prices, consumers prices)	1982	1992	2002
Rice / Fertilizer (Rs/kg)	1.37	0.70	0.78
Rice / Labor charges (Rs/hour)	0.80	0.69	0.45
Rice / Kerosene oil	0.81	0.89	0.66

Source: Ministry of Policy Development and Implementation, introduced by IDCJ seminar.

Government promotes crop diversification of paddy as well as higher productivity of paddy cultivation. In the Study area an increasing trend of diversification of vegetable and fruits crops is observed. As the per capita consumption rate of vegetable and fruits in Sri Lanka is lower (Fruits: 5g/person/year, needs 30-40g/person and vegetable: 92g/person/year, needs 200g/person) as compared with the world standard, the domestic demand on these products will be increased in the long term. On the other hand, import amount of Maize, Greengram and Chilies is regularly high in Sri Lanka. The domestic demand for those importing items can be fulfilled by immediate local supply if countermeasures are taken effectively.

Table D 1.2.3 Imports of Agricultural Commodities (unit: metric ton)

	2000	2001	2002	2003	2004
Maize	123,112	157,402	94,595	136,698	148,866
Green gram	6,767	8,717	7,121	8,200	12,700
Black gram	7,332	7,891	6,939	7,597	NA
Chilies (dried)	23,364	25,898	25,337	27,686	24,323
Kurakkan (millet)	552	816	1,134	610	1,829

Source: Department of Census and Statistic

The tariff system, which is being followed as the main instrument of trade policy is based on quantitative restrictions on imports. The official import duty rates imposed on paddy and other commodities were changed from time to time with change in local production and under internal political pressures. According to **Table D 1.2.4**, the tariff structure has periodically changed since 1980s. It is expected to liberalize tariff structure further for all products in line with the agreement of the WTO. Until 1990, the Cooperative Wholesale Establishment (CWE), the main government marketing agency had a monopoly of import rice, wheat and wheat flour. After 1990, private traders were allowed to import and to maintain buffer stocks subject to the payment of import duties when stocks were released to the local market. Licenses and seasonal restrictions were followed with respect in Potatoes, Chilies and Onions.

Table D 1.2.4 Rates of Import tariff imposed on Selected Agricultural Commodities

Products	Tariff (%)			
	1986/88	1994	1996	1998-2005
Rice	25	35 or Rs 7/kg	35	35
Maize	5	45	35	35
Potato	100	35 or Rs12/kg	35	35
Red Onions	5	35 or Rs 9/kg	35	35
B Onions	5	35 or Rs 9/kg	35	35
Green gram	5	35 or Rs10/kg	35	35
Black gram	5	35 or Rs10/kg	35	35
Dried Chilies	5	35 or Rs20/kg	35	35

Source: Sri Lanka Custom Notifications, Department of Customs, (1986/88; 1996; 1998), Report of the Presidential Commission on Tariff and Trade- 1994.

Chapter 2 PADDY/RICE

2.1 Brief Overview of the Marketing and Problems

Table D 2.1.1 Productions and Marketable Surplus of Paddy in the Study Areas in Maha, 2004/2005

Crop	Total production (MT) in Maha 2004 /2005		Save for seed		Payment for labor		Self-consumption and other use		Marketable surplus (MT)	
	Nachch	Raja	Nachch	Raja	Nachch	Raja	Nachch	Raja	Nachch	Raja
Paddy	13,397	25,705	7%	5%	12%	10%	26%	20%	55% (7,370)	65% (16,700)

Note: Nachch=Nachchaduwa, Raja=Rajangana
Source: Department of Census and Statistics, Anuradhapura, District Agriculture Office, Anuradhapura and Agrarian Service Center Office, Rajangana.

Most of rice farmers sell their paddy immediately after harvesting, without adjusting delivery timing by checking the present market prices. And many of them do not have storage facility of paddy. Many farmers borrow cultivation funds in advance from middlemen or shop-owners in a village, who are called as Mudalali. For settlement of such loans, farmers normally rush to sell their paddy for cash after harvest though farmers know that the selling prices are in the lowest level. The quality factor of paddy is not much significant in the transaction, which causes poor quality control by farmers.

In the study area, paddy harvest is carried out in Feb/Mar for Maha and in August for Yara. The farmers' selling prices normally drop in Mar/Apr and rise from May/June. Most of commercial rice millers and paddy collectors keep stocks after the harvest season for Maha, paddy prices do not drop sharply in Sep/Oct after the harvest for Yara (See **Table D 2.1.2/3**).

In the Study area, two (2) different circumstances is observed, namely in Nachchaduwa Scheme including Thuruwila Scheme, there is a lot of commercial rice mills are actively in operation (25 commercial mills and 28 village mills/custom mills) but in Rajangana Scheme, there is only 2 small commercial rice mills are in operation but huge number of village mills are working (69 in right bank and 64 in left bank, totaling 133 mills). Most of farmers in Nachchaduwa and Thuruwila sell paddy directly to those commercial mills but farmers in Rajangana can only sell to collectors/middlemen. In Rajangana, local brokers are playing a mediator role in paddy marketing by linking buyers and sellers. When outside traders come to the area, brokers take them to farmers and local traders and charge Rs500~1,000 per lorry.

There is no wholesale market for paddy/rice in the study area unlike to OFC, vegetable, fruits, which commodities are actively dealt everyday by wholesalers/collectors and producers (farmers) in the economic centers (wholesale market). If open paddy/rice markets available for producers (farmers) and users (rice millers/collectors) same as in Thailand, farmers will know the market requirements in terms of prices and qualities and at the same time, users can purchase necessary amount and quality rice at once without costing for purchasing works such as relying on brokers in villages. Open paddy/rice

market enables all conditions in the transaction (price and quality) transparent to all stakeholders for the improvement similar to those economic centers in Dambulla or Thambuttegama for vegetable and fruits.

Table D 2.1.2 Average Monthly Producer price of Paddy in Sri Lanka 2000-2004 (Unit Price:Rs/Kg)

	2000	2001	2002	2003	2004	Aver
Jan	12.10	12.72	15.02	14.32	14.45	**13.72**
Feb	10.67	12.10	14.86	12.86	14.04	**12.91**
Mar	10.25	12.21	13.18	12.08	13.63	**12.27**
Apr	10.77	12.12	13.17	12.08	14.40	**12.51**
May	10.54	11.52	13.45	12.14	14.97	**12.52**
Jun	10.57	12.28	13.67	12.42	15.01	**12.79**
Jul	11.09	12.32	13.22	12.45	16.10	**13.04**
Aug	11.64	12.49	12.82	12.08	16.03	**13.01**
Sep	10.66	12.17	13.46	11.85	16.92	**13.01**
Oct	10.32	12.73	13.84	12.05	16.87	**13.16**
Nov	11.51	13.36	13.76	13.06	18.05	**13.95**
Dec	12.68	13.66	14.28	14.02	17.85	**14.50**
Annu Aver	11.08	12.47	13.76	12.60	15.66	**13.11**

Sources :Department of Census and Statistics

Table D 2.1.3 Average Monthly Producer price of Paddy in Anuradhapura district 2000-2004 (Unit Price:Rs/Kg)

	2000	2001	2002	2003	2004	Aver
Jan	12.25	12.19	14.44	15.26	15.32	**13.89**
Feb	10.93	12.26	13.38	11.15	14.79	**12.50**
Mar	7.94	11.98	12.38	11.08	13.23	**11.32**
Apr	10.83	10.75	12.71	10.95	11.88	**11.42**
May	9.54	11.68	13.02	10.45	13.64	**11.67**
Jun	10.50	11.53	12.76	12.05	14.14	**12.20**
Jul	10.43	12.09	12.25	11.01	15.23	**12.20**
Aug	12.75	12.24	12.54	10.71	15.80	**12.81**
Sep	10.06	11.77	11.99	10.87	18.01	**12.54**
Oct	10.48	12.49	12.25	11.42	15.47	**12.42**
Nov	10.38	12.24	13.65	13.37	15.25	**12.98**
Dec	11.59	12.88	15.00	14.10	16.30	**13.97**
Annu Aver	10.64	12.01	13.03	11.87	14.92	**12.49**

Sources :Department of Census and Statistics

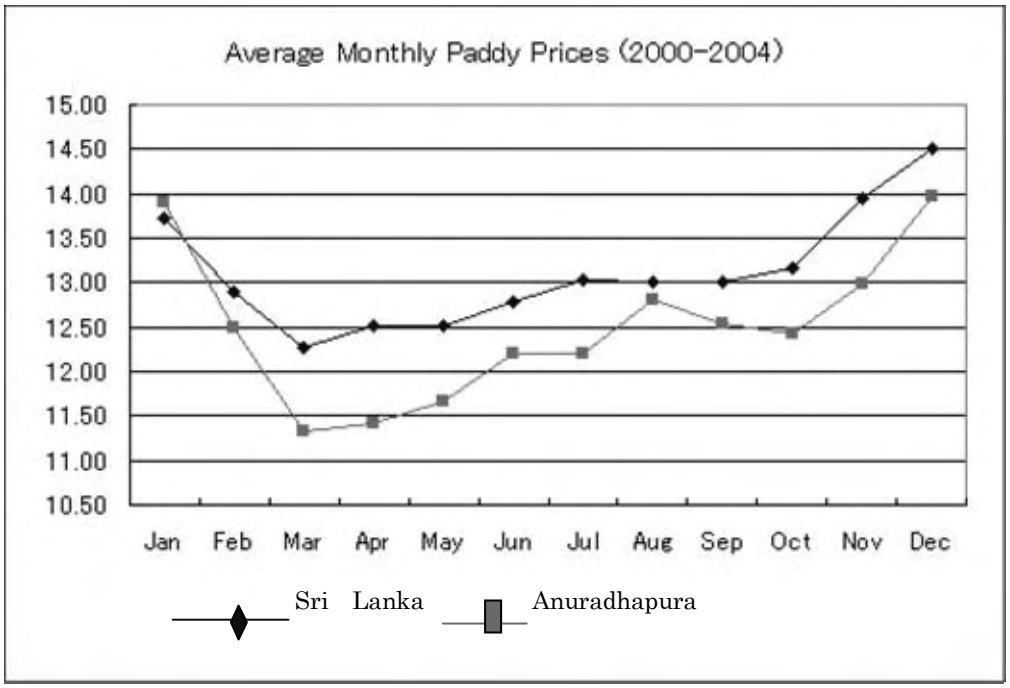


Figure D 2.1.1 Average Monthly Paddy Prices (2000-2004)
Source: Department of Census and Statistic

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Nachchaduwa	←	→	H/M		←		→	H/M		←		
Rajangana		→	H/M		←		→	H/M			←	

Note: ←→ means Cultivation Period including Land Preparation
H/M means H for Harvesting and M for Marketing

Figure D 2.1.2 Cropping Calendar of Paddy in the Study Area
Source: Study Team

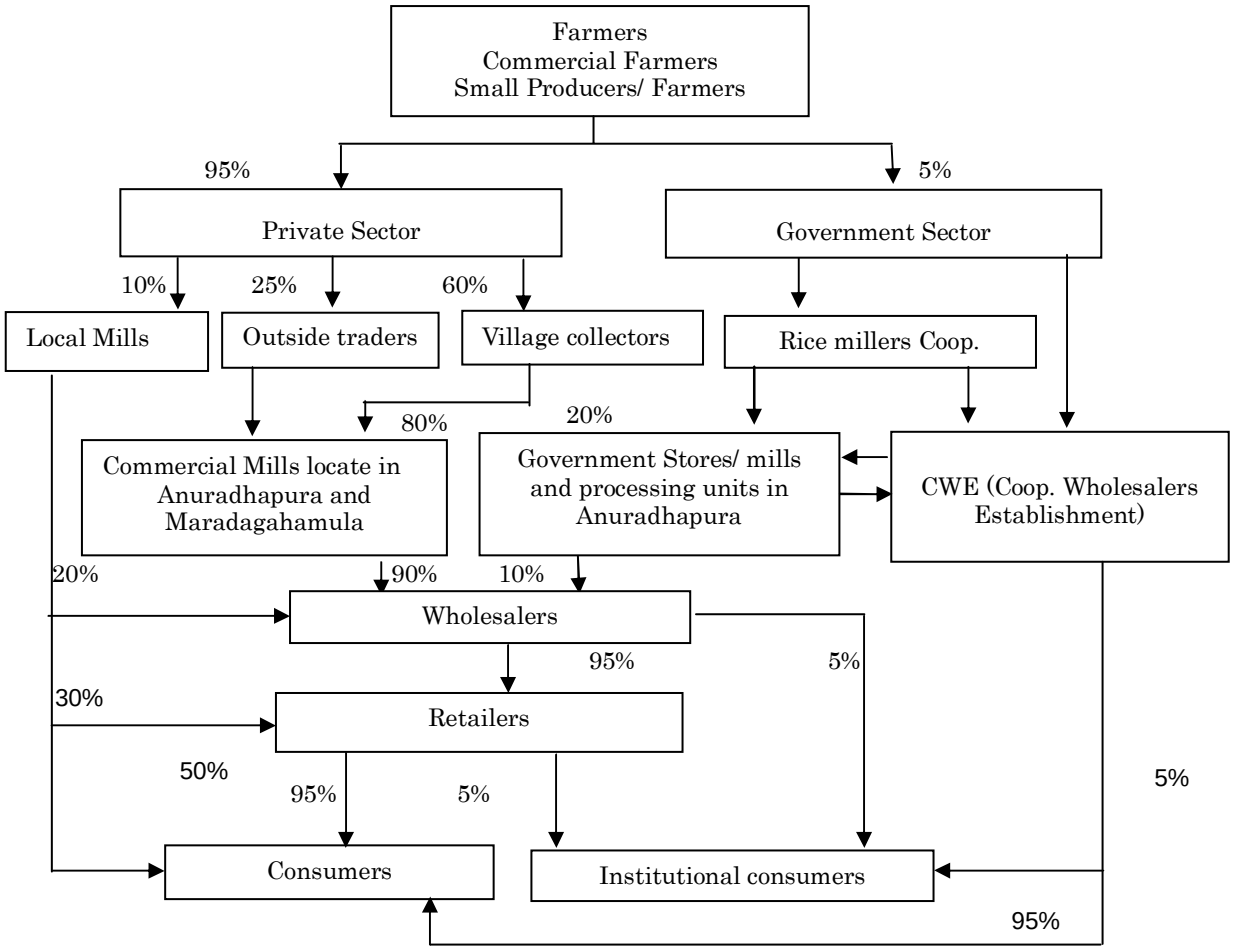


Figure D 2.1.3 The Marketing Flow and its approx. volume of Paddy/Rice in the Study Area
Source: Study Team

2.2 Activities in Rice Marketing for Increasing Farmers' Income

Commercial activities trying to increase sales prices or value addition of paddy by collective marketing, cooperating sales with rice millers/middlemen and rice sales instead of paddy sales can be observed. The following cases are samples:

(1) Differed payment system in Nachchaduwa

Between farmers and rice mills/middlemen, an agreement for differed payment which

enables farmers earn better prices can be observed in Nachchaduwa scheme. This agreement contains followings;

- A farmer delivers paddy to a rice mill or a middleman.
- The rice mill or middleman gets rice, raw or parboiled, after milled and rice is sold in wholesaler markets and/or retail shops within 1-2 months.
- After rice sale, the rice mill/middleman pays paddy cost to the farmers at the current price, normally Rs.5/kg higher than at the harvesting time (In case Samba variety, paddy price at harvesting time is Rs.12/kg but after 2 months the price goes up to Rs.17/kg in 2005 Yara).

The rice miller/middleman can enjoy business profits without cash funds to purchase paddy during harvesting season, if he is capable enough to have farmer' trusts. At the same time farmers can receive higher prices without storing paddy till the price goes up.

This trial is risky, if there is no tight confidence among farmers and the rice miller/middleman. In fact, as those farmers can participate this system have to wait cash income for 1-2 months after harvest, farmers who badly in need of cash immediately after the harvest cannot join this trial. At the FO interview it was revealed that only 5% out of 257 members could join this circle last year.

(2) Rice Processing Village

Institute of Post-Harvest Technology (IPHT, Anuradhapura) is promoting Rice Processing Village, coordinating the program with office of DOA. 14 villages have started this activity up to 2005. The background and main activities of this income generation trial are as follows.

Traditional parboiled rice producing practice in villages does not include soaking process but just put paddy into cold water in a cooking pan. Then they start boiling paddy until steam will come out from the cooking pan (working time requires only 45 minute for one batch). After that paddy is dried under sunshine and milled in a village rice mill.

Through this practice, the milling recovery can be significantly improved. A farmer says that 20 kg of paddy gives 16kg milled rice after parboiling process but 12 kg only if not parboiled. But though this processing, the quality of rice parboiled is not so good and cannot be compared with the one produced by commercial rice mill.

IPHT developed economical equipment covering soaking, steaming and drying processes and disseminated the technology to villages as part of income generation activity for farmers.

The idea of Rice Processing Village includes following frameworks.

To organize society in a village with 15 to 20 members and ask them to invest.

The investment covers soaking tank (normally a concrete tank), steaming pan, improved type stove and concrete yard for sun drying of paddy. Total cost is less than Rs10,000.

IPHT extends technical training to the participants as well as financing assistance for them to get bank loans.

One condition in forming this society is that a village rice mill needs to be a member.

IPHT also provides technical guidance to the village rice mill and ask the miller to improve the existing facility, mainly to equip a paddy cleaner and a stone-separating machine (De-Stoner), so that parboiled rice by the village mill will be stone free and marketable one.

Issues of this project are mainly following two points;

- Quality control of parboiled rice, especially when the group sells parboiled rice in bulk. It is very difficult to maintain certain level of quality by all members regularly and equally. They need a lot of awareness and training.
- Establishment of marketing channels to rice markets by strong linkage with buyers. As rice market opened to every stakeholder is not established in Sri Lanka yet, such market needs to be established. An activity to make a linkage with rural producers and urban consumers such as One Village One Products campaign will help development such commercial activities in villages.

Traditional style of parboiled rice making

Steaming pan with separating screen by IPHT

Soaking tank and firewood stove

2.3 Rice Mill Facilities and Issues

More than 7,000 rice millers are said to be operating with different types of equipment and capacities in Sri Lanka. 70% of them are small-scale village mill serving village farmers for their own rice consumption, so called “Custom Mill”. Some large-scale rice mills equip modern machines from abroad such as Water Mist Rice Polisher and Color Sorting Machine for milled rice from India, Japan and China. Most of commercial rice mills equip Parboiling Facility and Stone Separator (De-Stoner) nowadays. Following categorization of rice mills and their problems and issues can be made.

Table D 2.3.1 Categorization of Rice Mills

Category	Main activity	Equipment	Features & Issues
Custom mill (village mill)	Milling service provider at fee mainly for farmers. Normal fee is Rs1.25 ~ 1.50/kg/ paddy or Rs1.0 kg/ milled rice. Normally farmers (consumers) carry out parboiling process of paddy before milling. Small rice dealers utilize this Custom Mill for their business activities i.e. they purchase paddy and mill it at these rice mill paying milling fee and sell milled rice to retailers in towns.	Type 1: So called grinding mill using Engerberg type milling machine only, no husking machine equipped.	Type 1: Investment cost is very low. Only applicable to parboil rice not for raw rice milling due to excess breakage of milled rice resulting to low milling recovery. Milling recovery is low and appearance of milled rice is poor, not marketable in a shop. By-product is mixed with rice bran and chips of husk, almost no commercial value.
		Type 2: Rubber roll type husking machine and Friction type whitening machine, 1 unit each. IPHT promotes to equip De-stoner in the Rice Processing Village scheme.	Type 2: Better milling recovery and better rice appearance than of Type1. Normally De-stoner is not equipped so stone is mixed in milled rice. By-product (rice bran) is marketable and normally taken by rice mill owner.
Small/ Medium -Scale Commercial mill	Purchase paddy, mill it and sell milled rice both parboiled and raw. Operation costs vary between Rs200~400/100kgpaddy	Normally they equip 1 unit of Paddy Cleaner, Husker, Paddy Separator for raw rice, Friction type Whitener, Winnower, De-stoner, Table scale and Sewing machine. They equip open-air type steaming facility (non-boiler type) for parboiling process.	Operation capital is limited so normally they rush to sell milled rice at wholesale market at relatively low price. Paddy storage is not large capacity. Paddy drying after parboil process is carried out on concrete floor, so weather condition influence the operation. The rice quality faces tough competition among rice millers in markets.
Large-scale Commercial mill		Line-up of machines is similar to medium-scale mill but large size or plural numbers is installed. They equip boiler type steaming vessels and mechanical paddy dryer with husk furnace for parboiling. Some imported machines are also equipped for superior rice quality.	Fixed or random middlemen supply paddy in addition to own paddy collecting channel. They stock paddy as many as possible in their large warehouse. Some of them have own out-let or sales channel to retailers with retail bags of 1,5,10 and 50kg. They market share will be expanded gradually due to the better rice quality.

Source: The Study Team

Medium Scale Commercial Rice Mill (Parboiling facility and paddy sun drying yard

Mechanical Paddy drier, dried by water steam, generated by husk furnace

Chapter 3 OTHER FIELD CROP

Table D 3.1.1 Productions and Marketable Surplus of OFC in the Study Area

Crop (OFC)	Total production (MT) in Maha 2004 /2005		Save for seed		Payment for labor		Self-consumption and other use		Marketable surplus	
	Nachch	Raja	Nachch	Raja	Nachch	Raja	Nachch	Raja	Nachch	Raja
Kurakan	7.5	9.5	7%	5%	12%	10%	26%	20%	55%	65%
Maize	79.0	93.8	-	-	-	-	94%	20%	6%	80%
Blackgram	1.6	33.0	-	-	-	-	NA	5%	NA	95%
Greengram	14.4	84.0	-	-	-	-	10%	10%	90%	90%
Cowpea	4.5	17.2	1%	1%	-	-	10%	5%	89%	94%

Source: Department of Census and Statistics, Anuradhapura, District Agriculture Office, Anuradhapura and Agrarian Service Center Office, Rajangana.

3.1 Brief Overview of the Marketing

Government promotes crop diversification from paddy to OFC aiming at to shift subsistence farming to commercial farming as well as to decrease import of agricultural products such as Chile, Onion, Cowpea, Blackgram, Groundnuts, and etc. As shown in above **Table D 3.1.1**, OFC production in the Study area is small at present, but production of maize, soybean and groundnuts is in increasing in Anuradhapura District.

3.2 Problem

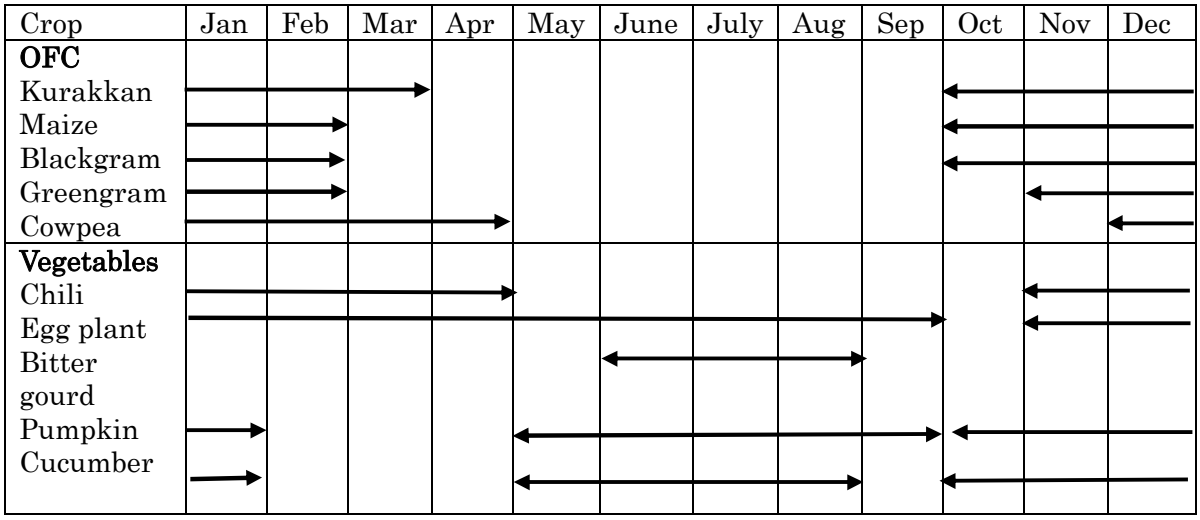
Unlike to Mahaweli System H nearby the study area, where FO works as a window to Companies (collectors) for farmers when Companies wish to enter into forward sales contracts of OFC such as Soybean, Onion and Maize, in study area farmers negotiate such agreement individually because the activity of FO in commercial sector is almost nil. As a result, farmers are normally put into weak position in the agreement.

A farmer in Rajangana complained that one day he carried Pumpkin to Thambuttegama wholesale market but he could not find any buyer then finally he was compelled to destroy it.

3.3 Activities in OFC for Increasing Farmers' Income

In the study area, warehouse for OFC or bulking activity of OFC cannot be observed yet. IPHT developed several types of processing equipment with appropriate technology for increasing farmers' income. Those equipments are Pulse processing machine, Chili flouring machine, grading machine of Onion and Potato and etc. but those adoptions by farmers group is rarely found. Dissemination of crop diversification by Government agencies shall include assistances in hardware and software such as construction of collecting/processing center, storage and maintenance of market roads as hardware and promotion of value addition by food processing, quality control, collective marketing activity and market development as software.

In Nachchaduwa Scheme



In Rajangana Scheme

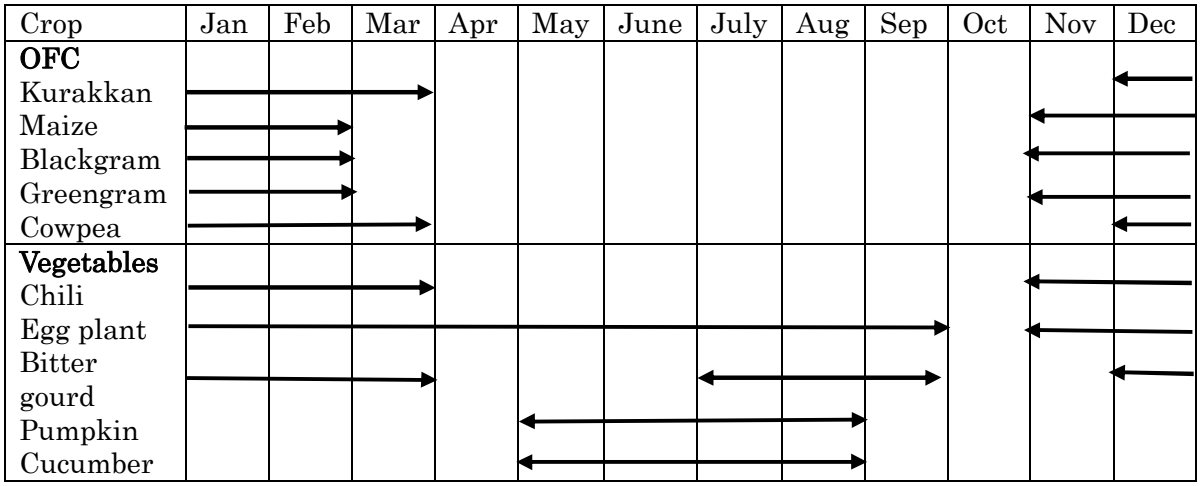
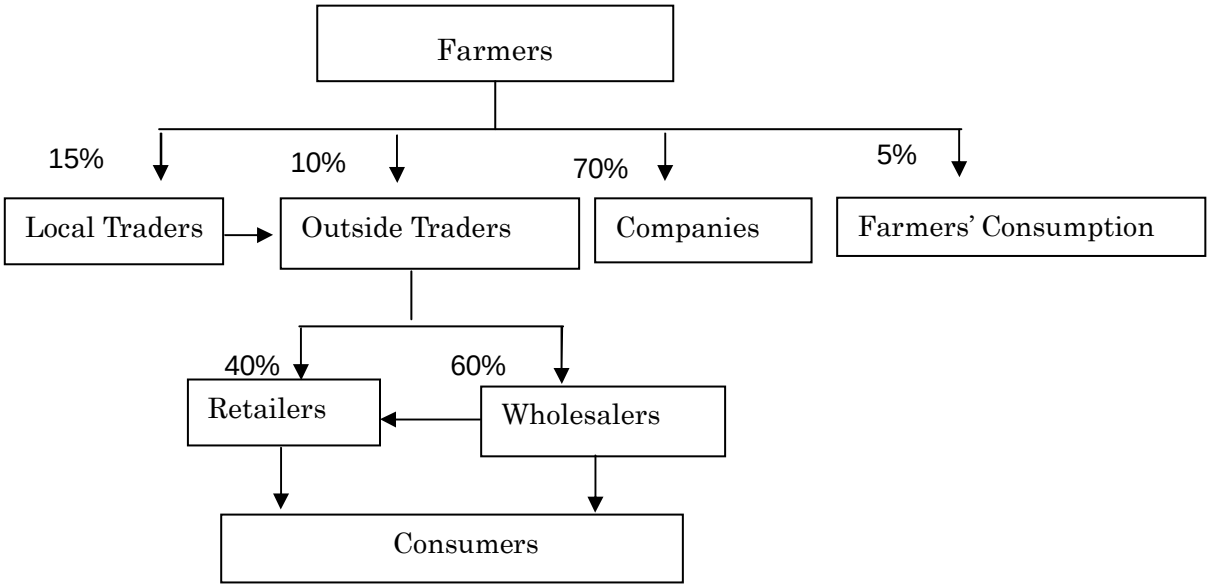


Figure D 3.3.1 Cropping-Calendars of OFC and Vegetable in Nachchaduwa & Rajangana

Source: Study Team

Marketing Flow of OFC in Nachchaduwa



Marketing Flow of OFC in Rajangana

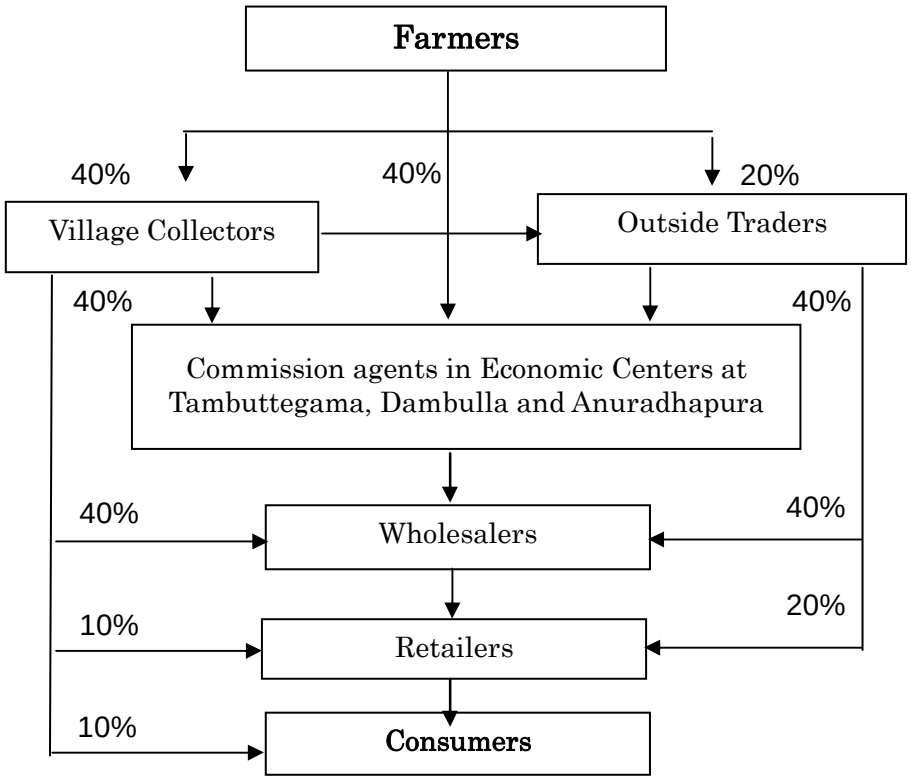


Figure D 3.3.2 Marketing Flow of OFC in Nachchaduwa & Rajangana

Source: Study Team

Chapter 4 VEGETABLE AND FRUITS

Table D 4.1.1 Productions and Marketable Surplus of Vegetable and Fruits in the Study Area

Crop (Vegetable & Fruits)	Total production (MT) in Maha 2004 /2005		Save for seed		Payment for labor		Self-consumption and other use		Marketable surplus	
	Nachch	Raja	Nachch	Raja	Nachch	Raja	Nachch	Raja	Nachch	Raja
Chili	60	178	NA	NA	NA	NA	-	2%	-	98%
Egg plant	198	1,351	NA	NA	NA	NA	-	1%	-	99%
Bitter gourd	135	360	NA	NA	NA	NA	2%	1%	98%	99%
Pumpkin	500	576	NA	NA	NA	NA	-	1%	-	99%
Cucumber	41	152	NA	NA	NA	NA	-	1%	-	99%
Banana	512	25,390	NA	NA	NA	NA	2%	1%	98%	99%
Papaya	108	38	NA	NA	NA	NA	-	1%	-	99%
Mango	-	78	NA	NA	NA	NA	-	5%	-	95%

Source: Department of Census and Statistics, Anuradhapura, District Agriculture Office, Anuradhapura and Agrarian Service Center Office, Rajangana.

4.1 Brief Overview of the Marketing and Problems

As reported above (refer to **Table D 1.2.3**), Maize, green gram, chili (dried) and kurakkan are major imports of agricultural commodities in Sri Lanka. In Anuradhapura District, chili occupies 35% of national production but the amount trends to decline. The production of vegetables in Anuradhapura District and its occupation in national production is in increase. Vegetables in increasing the production in Anuradhapura are tomato, brinjals (eggplant), cucumber, bitter gourd, snake gourd, beet-root (yam) and red-pumpkin.

The channels and methods of marketing vegetable and fruits in the study area are different. The significant points are:

- Farmers in Nachchaduwa and Thuruwila normally deliver and sell vegetable to Dambulla wholesale market by themselves but in Rajangana, many farmers sell vegetable at relatively low price to village collectors who deliver them mainly to Colombo market.
- At Pola, vegetable sale is mainly carried out by full-time salesmen/women who go around Pola to Pola everyday. They try to purchase vegetable in villages as many as possible. In case required products are not available in villages they source them at Dambulla. Village farmers sell own products at Pola nearby his residence are rare.
- There is no Pre-cooling facility or Cold storage for vegetable/fruits. There is no buffer function in the marketing channel from farm to consumers.

- Distribution of the products is carried out using polyethylene string bags, which causes considerable damages and losses (Source says the loss goes up to 30~40% of the total amount). In case Tomato, packaging in wooden boxes for the distribution is common.
- Group marketing of vegetable/fruits are very rare and most of farmers control his marketing by his own judgments and risks.
- Farmers aware of the price fluctuation through radio and by word of mouth.
- Transportation lorry services are available for all farmers in the Study area. A farmer, who wishes to sell his products at Dambulla, can use this lorry service by paying Rs.50/bag.
- Normally middlemen collect fruits at the farm gate or on the farm for delivering to wholesale market. Farmers explained they were not familiar with determination of proper harvest timing of fruits for delivery to markets and appropriate handling methods of fruits for minimizing losses during transportation to markets. Technical training for farmers in harvesting and marketing of fruits will be required.
- Huge numbers of sellers and buyers are concentrating with vitalities in Dambulla wholesale market everyday but not so many sellers and buyers are working in Thambuttegama wholesale market. The dealing prices are also low in Thambuttegama. The access fees (parking fee) are fixed at same rate in both wholesale markets (Rs.50 for trucks larger than 5 ton, Rs.20 for smaller trucks than 4.9 ton and Rs.10 for tricycle and two wheel tractor). Any incentives such as reducing the parking fee for users are not taken for Thambuttegama.

4.2 New Activity in Vegetable and Fruits Production and Purchasing

The supermarket chain, Cargill Food City having 76 blanch shops in Sri Lanka conducts consignment production with farmers for vegetable and fruits in verbal agreement basis. They have 4 collection and distribution centers in the county.

In the Study area, they operate Thambuttegama collection and distribution center. Their major activities are as follows:

- About 60 farmers around the center participate this verbal agreement.
- Collection service operates 365 days per year.
- Center discloses his purchasing plan every 2 months to farmers.
- The center purchases only quality products through sorting of products one by one. The center purchases at 18 to 20% higher price than that in Thambuttegama wholesale market for all products (farmers will sell those rejected products in another channels or just put into disposition).
- The center recommends farmers to use plastic boxes for the transportation instead of using ordinary string bags saying that plastic box causes less damages and more profits in long terms. In case of string bags, farmers normally choke up the bags with products as transportation cost is charged by numbers of bags, not by weight.

Further, a transportation service provider heaps up those bags on a lorry, which causes significant damages to fresh products.

- The center transships those products purchased from farmers' boxes to Cargill boxes for internal distribution. Government agencies advise farmers to shift from string bags to plastic boxes for reducing damages during delivery works but wholesalers in markets do not reload such products to their own boxes, just purchase a whole bag. Unless there is a system to return the box belonged to the farmer after the delivery, farmers are not in a position to start using plastic boxes though they understand the long-term benefits. The cost of a plastic box is Rs.400 and a string bag is Rs.14~15 only.

A remarkable point in this collection and distribution center is that Mahaweri System H constructed this facility and leased Cargill at relatively low leasing fee. This type of the Governmental indirect involvement in the market development is very important for assistance in crop diversification and farmers' income generation.

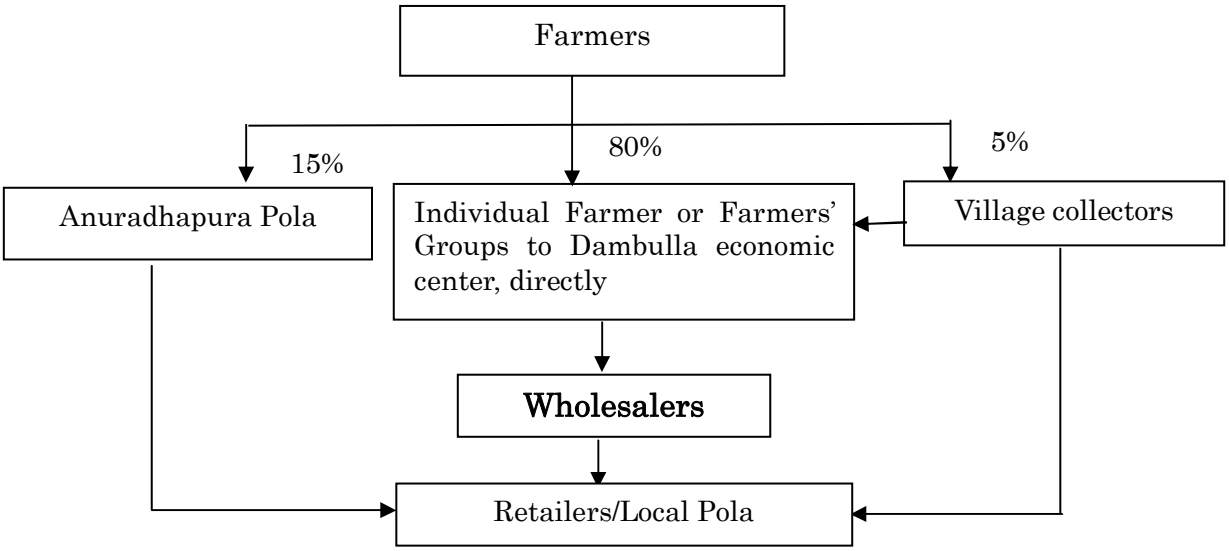
Similar delivery system of vegetable using plastic box from farmers to fixed wholesalers in Colombo can be observed in System H. In Japan, disposable carton box is common for vegetable marketing from the farm to the markets. If reasonable priced carton box is developed in this area, post harvest losses of vegetable and fruits can be significantly reduced contributing to increase of farmers' income.

Collection & delivery center operated by Cargill Food city in Thambuttegama

Plastic boxes with vegetable being used in the center

A scene in Dambulla, loading & unloading of string bags

Marketing Flow of Vegetables in Nachchaduwa



Marketing Flow of Vegetables in Rajangana

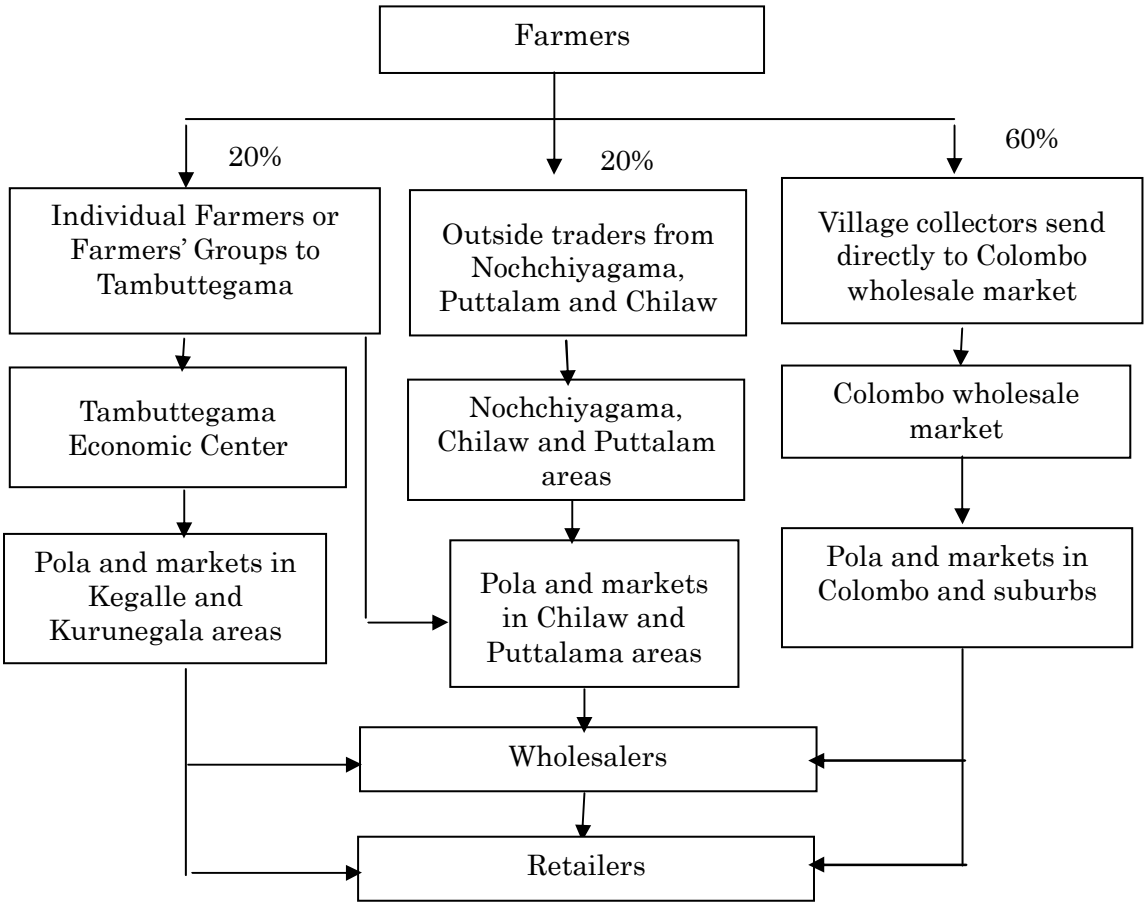


Figure D 4.2.1 Marketing Flow of Vegetable in Nachchaduwa & Rajangana

Source: Study Team

Chapter 5 PRICE FORMULATION

5.1 Price Formulation of Rice

Price formulation for agricultural products at each level is considered taking into account all the costs added to the product. This includes selling price, seller's profit margins, various processing and transport costs added from farm gate to retailer.

Cost of packing of products using gunny bags, polyethylene string bags and wooden boxes are borne by both farmers and consumers. Farmer uses polyethylene woven bags for selling paddy and they will take it back after selling to rice millers/traders or receive bags from them as a rental. For OFC also they practice the same method. But it is observed that OFC is not sold in such large quantities. In the case of vegetable marketing, the cost of a string bag is around Rs15/piece and farmers receive Rs10 for each bag after selling their products at Dambulla and Tambuttegama markets. Similarly farmers get Rs40 for wooden box though they spend Rs45-50 for each box.

Loading and unloading cost at the economic centers are borne by farmers or middlemen, who supply products to the market. Farmers or middlemen bear the transport cost to the economic centers and traders or retailers bear the transport cost from the economic centers to retail shops. The prevailing transport cost for transporting products from farm gate to markets or markets to markets vary according to weight, size and type of the package. According to the present rates, a charge of Rs65 is made for a sack of vegetables if it heavier than 65Kgs and Rs40 if it less than 50kg. However these rates vary from area to area, condition of roads and distance. Many farmers say that they have to pay Rs50-70 per one sack without considering its weight. Accordingly it can be estimated on an average Rs1.0 per kg. This cost goes up to R 2.0/kg in some areas. The cost of transporting paddy and OFC also estimated on the same basis.

Through various interview and survey on price formulation from farm gate till retailers of some commodities can be summarized in following Tables.

Table D 5.1.1 Price Formulation for two varieties of rice in Colombo, 2005

	Samba (Rs/kg)	Nadu (Rs/kg)
Paddy prices; Farmers' selling price to Mudarali	11.0~12.0	10.0~11.0
Paddy prices; Rice millers buying price including collectors' margin & trans. cost	14.0~17.0	13.0~14.5
Milling cost and margin	9.0~12.0	9.0~12.0
Rice prices; Ex-Rice mill	23.0~29.0	22.0~26.5
Wholesalers' buying prices including transport and handling cost	25.0~31.0	24.0~28.5
Wholesale price	37.0~41.0	28.0~30.0
Wholesalers' margin	10.0~12.0	2.0~4.0
Wholesalers' margin (%)	25~30 %	10~15 %
Retailers' buying prices including transport cost	39.0~42.0	29.0~31.0

	Samba (Rs/kg)	Nadu (Rs/kg)
Consumers' prices in Colombo	43.0~46.0	33.0~34.0
Retailers' margin	Approx. 10%	Approx. 10%

Source: Study team basing on price level of March 2006 in Anuradhapura for paddy and in Colombo for rice.

Milling cost of rice mills is different by its size. Their selling price to market also largely differs. Small-scale commercial mills say paddy price of Samba is Rs13.5/kg and rice price is Rs28.0/kg, Nadu is Rs11/kg/paddy and Rs20.0~22.0/kg/rice. Large-scale rice mills reported that paddy price of Samba is Rs15.0/kg and rice price is Rs35.0/kg.

Above **Table D 5.1.1** shows profit margin of wholesalers for samba is high. High demand for quality Samba and minimum cost at wholesale level would be the key factor for gaining high profit margin. But some large-scale rice millers is establishing their own brand such as Nipuna Rice in Polinaruwa, Ariya rice in Anuradhapura, Sunrice in Kalawewa and so on. These large-scale rice mills have their own outlets or direct sales route to retailers bypassing wholesale market.

Table D 5.1.2 Rice Price Comparison between Sri Lanka and Thailand

	Sri Lanka	Thailand
Paddy price ①	Rs11,000/ton [1] (US$108.90) Exchange rate: Rs101.0/US$	Baht6,597/ton [4] (US$169.20) Exchange rate: B39.0/US$
Wholesale price of milled rice ②	Rs32,300/ton [2] (US$319.80)	B11,070/ton [5] (US$283.80)
Consumers price at retail shops ③	Rs42.00/kg [3] (US$0.4158)	B13.40/kg [6] (US$0.344)
Margin Ratio Wholesale/Paddy (②÷①)	2.94	1.68
Margin Ratio Consumer/Paddy (③x1,000÷①)	3.82	2.03

Source: Sri Lanka by Weekly Food Commodities Bulletin, week 09, 24 Feb. – 02 Mar. 2005, HKARTI, Thailand by Ministry of Commerce, Average prices for Jan – Feb. 2006.

Note: 1. Farmers' selling price was to Mudarali in Rajangana in March 2006 for Samba.
2. Wholesale price is calculated basing on wholesale price of Rs2,100 for 65kg bag.
3. Consumers price is retailers' price in Colombo.
4. Farmers' selling price in Thailand is in Open Paddy Market for 5% paddy.
5. Wholesale price in Thailand is at Bangkok wholesale market.
6. Consumers price is retailers' price in Bangkok.

Above table shows farmers' low paddy price and consumers' high rice price in Sri Lanka and vice-versa condition in Thailand though additional costs are incurred for parboiling process in Sri Lanka. By modernization and rationalization of paddy/rice marketing channels and processing technologies, farmers paddy price or consumers rice prices would be improved. Further details study such as establishment of Open Paddy Market will be required for the improvement of the circumstances of rice farmers for their benefits.

5.2 Price Formation of OFC/Vegetable/Fruits

Tables D 5.2.1,2 and **3** below show examples of price formulation of some OFC, vegetable and fruits between stakeholders including transport cost sampled in November 2005. Fresh vegetable and fruits prices are always changing largely depending on the situation of supply and demand. It is very hard for farmers to predict market consumption (demand side) and competition among producers (supply side), systematic record keeping for the past trend of price fluctuation and disseminating system of such information to farmers should be established. As a buffering function against sharp price fluctuation, cold storage for perishable products also should be constructed in the marketing channel by some official supports in the near future.

Normally the margin ratio is in high side for perishable products and in low side for non-perishable products. However, **Table D 5.2.1** shows high margin for Maize and Black gram. Further study on this matter is required but probably this is caused by limited number of players especially by limited marketing routs to buyers from wholesalers. This table shows very high margin of wholesalers but they may spend additional expenses for bulking and stocking. If Open Grain Market will be established, this situation will be improved for farmers' benefits but it requires feasibility study on the requirement by stakeholders such as buyers (processors), wholesalers, collectors (middlemen) and farmers.

Table D 5.2.2 shows high margin for perishable products such as Eggplant, Bitter gourd and Cucumber in the marketing. This is reasonable under present condition of post-harvest practice and marketing transaction, which causes significant amount of damages and losses to be born by collectors, wholesalers and retailers. Some counter measurements for minimizing losses being caused by traders/sellers during marketing will improve the situation. Such measurements would be introduction of plastic/carton box for packaging and transport, gentle handling practice for loading and unloading and construction of cold-chain system starting at pre-cooling treatment by farmers.

Table D 5.2.1 Price Formulation of Some OFC in Colombo

Marketing channel	Kurakkan(millet) (Rs/kg)	Maize (Rs/kg)	Black gram (Rs/kg)	Green gram (Rs/kg)	Cowpea (Rs/kg)
Farmers	30	15	30	40	50
Collectors' margin and trans. Cost	10	10	10	15	12
Wholesalers buying cost	40	25	40	55	62
Wholesalers selling price	45	40	60	65	90
Wholesalers margin	5	15	20	10	28
Margin rate	11%	38%	33%	15%	31%
Retailers buying price	46	41	61	66	91
Retail price Colombo	48	45	65	70	92
Price difference between Farmers' and Consumers' in Colombo (times)	1.60	3.0	2.17	1.75	1.84

Source: Study Team, Data collected in November 2005.

Table D 5.2.2 Price Formulation of Some Vegetables in Colombo

Marketing channel	Chillies (Rs/kg)	Eggplant (Rs/kg)	Bitter gourd (Rs/kg)	Pumpkin (Rs/kg)	Cucumber (Rs/kg)
Farmers	70	20	30	13	5
Collectors' margin and trans. Cost	6	10	10	4	3
Wholesalers buying cost	76	30	40	17	8
Wholesalers selling price	85	33	46	19	9
Wholesalers margin	9	3	6	2	1
Margin rate	11%	9%	13%	10%	11%
Retailers buying price	86	34	47	20	10
Retail price Colombo	96	38	60	22	12
Price difference between Farmers' and Consumers' in Colombo (times)	1.37	1.90	2.00	1.69	1.84

Source: Study Team, Data collected in November 2005.

Table D 5.2.3 Price Formulation of Some Fruits in Colombo

Marketing channel	Banana (Rs/kg)	papaw (Rs/kg)	Mango (Rs/nut)	Coconut (Rs/nut)
Farmers	13	15	7	10
Collectors' margin and trans. cost	7	2	5	3
Wholesalers buying cost	20	17	12	13
Wholesalers selling price	21	24	15	15
Wholesalers margin	1	7	3	2
Margin rate	5%	29%	20%	13%
Retailers buying price	22	25	16	16
Retail price in Colombo	25	30	20	20
Price difference between Farmers' and Consumers' in Colombo (times)	1.92	2.00	2.86	2.00

Source: Study Team, Data collected in November 2005.

Chapter 6 MARKETING INFRASTRUCTURE

Marketing Facilities like in many other agricultural settlements schemes, most basic marketing facilities are available in the Study areas. They include weekly markets (Pola), marketing centers (townships) storage facilities and rice milling and food processing centers. (See **Table D 6.1.1**).

Table D 6.1.1 Marketing Facilities Available in Nachchaduwa and Rajangana Areas

Facility	Nachchaduwa	Rajangana
Weekly markets (Pola)	2	4
City Markets	2	3
Commercial Rice Mills*	24	4
Village Rice Mills	25	133
Paddy Storage**	2	3

* Some commercial mills in Nachchaduwa located near Kurunegala~Anuradhapura main road that provide services to Mahaweli H area mainly.

** Paddy Storages belong to Agrarian Service Center but the capacity is small, approx. 150ton of paddy each.

6.1 Marketing Institutions

As shown in **Table D 6.1.2**, both government and non-government organizations are involved in marketing activities. Under the liberal economic policy reforms in the government involvement in business and marketing activities are limited to facilitating, counseling and coordinating activities and the private sector play a main role in marketing all commodities concerned in the Study. However, the government intervenes paddy purchase trying to increase the floor price during harvesting seasons. The table D 6.1.2 presents functions of both public and private sector marketing institution.

The majority of farmer representatives were not happy with the services provided by the government marketing institutions mainly due to delays in payment for rice purchases done and rigid criteria followed to select quality paddy. Inefficiency of some officers and the system officers follow were also reported as key reasons for not being satisfied with the system.

Table D 6.1.2 Marketing Institutions

Institution	Type of Service
Department of Agrarian Service	Provide credit and production inputs and strengthen farmer organizations
Irrigation Management Division (IMD)	Prepare crop calendar and advice farmers to cultivate suitable products according to water supply conditions.
Cooperatives	Provide farm inputs and Purchase paddy
NGOs / Local organizations	Provide loans, credit and advice in Rajangana area
Regional Economic Centers at Dambulla and Tambuttegama	Create competitive and reasonable price structure for vegetables and fruits
Institute of Post Harvest Technology (Anuradhapura)	Provide post harvest processing technologies and minimize post harvest losses

Source: Study Team, Data collected in November 2005.

6.2 Road Network and Mode of Transportation Conditions

Road network, mode of transport and transport facilities in the Study area are not adequate. As the survey revealed the road network in the Study areas consisted of C, D, E and gravel roads and these have not repaired recently. Therefore, many farmers who lived at the tail end of these schemes suffer most due to poorly maintained roads resulting in high transport costs and lower prices for agricultural produce. Prices received by farmers living close to motor able roads are higher than those whose farm away from the road. It was reported that some farmers have to pay Rs70 per sack of 50kg instead of Rs50 per sack paid by farmers who live nearer to the road. Lorry, tractors, bus, three wheelers could be regarded as the most common mode of transport in both areas. Local traders mainly use tractors while outside traders use lorries. Small producers use busses and three-wheelers to transport produce.

Chapter 7 PROBLEM ANALYSIS

Problem analysis was conducted in 3 times through Work Shop. 1st work shop was held by Government officials (Counter parts) and 2nd and 3rd workshop was conducted with farmers representative from Rajangana scheme and Nachchaduwa/Thuruwila Scheme respectively.

The problem tree summarized through three workshops by all participants is shown in the figure below. Basing on the Problem Tree, the Problems and Issues categorized for paddy, OFC/vegetable/fruits and other income generation through marketing & processing is listed **Table D 7.1.1** in the following pages.

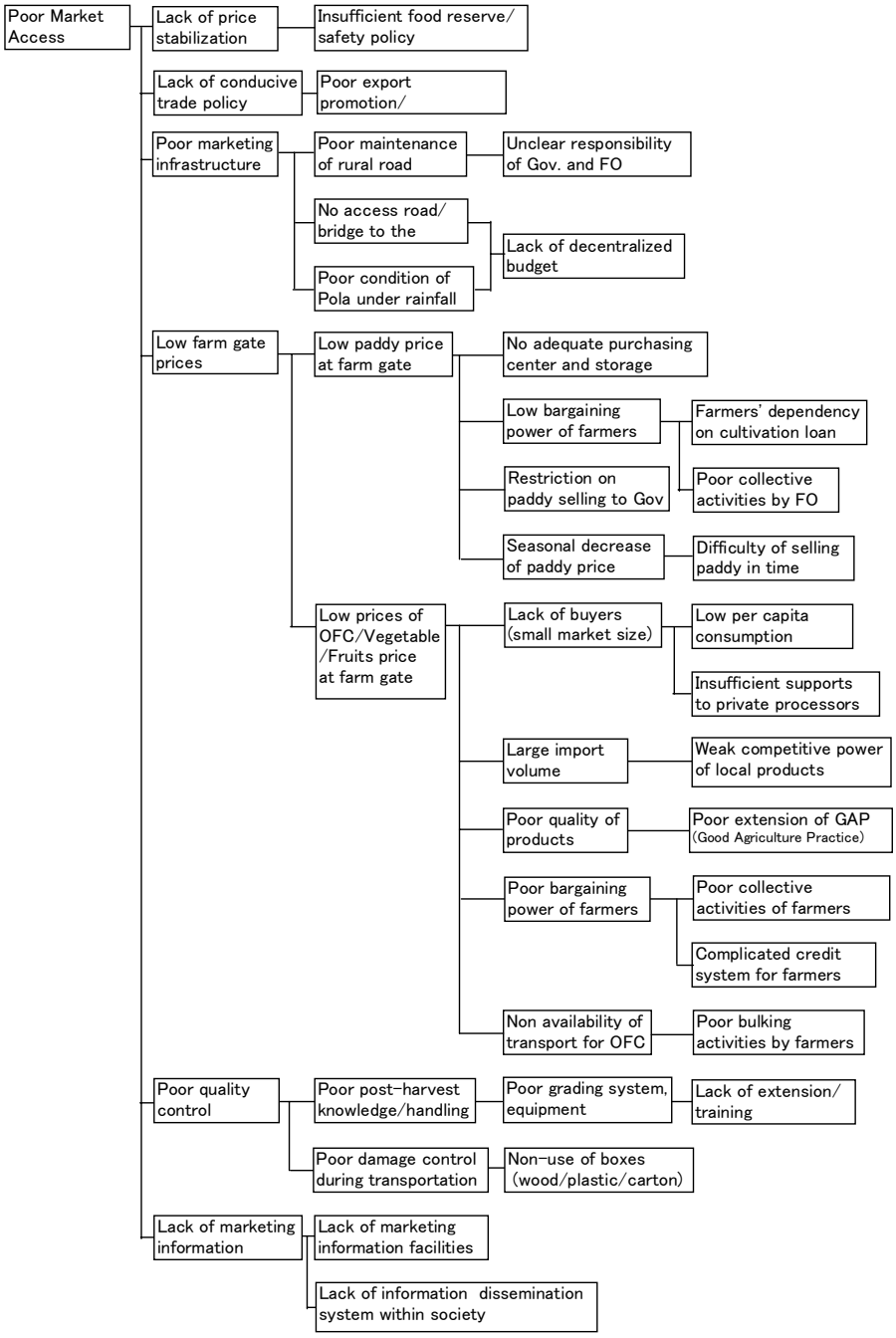


Figure D 7.1.1 Problem Tree of Marketing Sector

Table D 7.1.1 Problems from the Present Situation and Problem Analysis Workshop

Marketing

Category	Present Situation	Problems Description
1. Marketing and Processing of Paddy	Common Points	
1.1 Farmers sell paddy at low prices	・ Farm gate price of paddy in April was lowest. (Rs11.88/kg, while Ra13.23/kg in March and Rs13.63/kg in May in 2004 in Anuradhapura), See **Table D 2.1.2/3** & **Figure D 2.1.1**. ・ Many small-scale farmers have been fallen in a vicious circle of reiterate credit and its settlement by immediate sales at low prices though they know the price level is lowest. (About 80% of farmers in Rajangana sell paddy immediately after harvest, according to DO.)	・ Most of farmers sell paddy immediately after harvesting for cash at low price due to mainly settlement of cultivation credit.
1.2 Short of paddy storage	・ Farmers store paddy in polyethylene sacks in their house. 2 Large-scale storages are available in Nachchaduwa and 3 in Rajangana, both owned by ASC. Mudalali(s) have small-scale multiple storage and commercial rice mills have large-scale storages within their possession. But there is no paddy storage for table rice available for farmers in the Study area except seed paddy storage.	・ Paddy storage facilities are limited, which causes low sales price of paddy and makes it difficult to adjust adequate timing of paddy sales.
1.3 No market available for paddy/rice	・ There are 2 Pola in Nachchaduwa and 4 Pola in Rajangana (See **Table D 6.1.1**) but no body sells paddy/milled rice in Pola. Wholesale markets are available in Dambulla and Thambuttegama but no paddy/rice sales is carried out in the markets unlike to OFC, vegetable and fruits.	・ No open paddy/rice market is available for better market access and transparent rice market.
1.4 Inactive group activity	・ Local brokers play mediator role in paddy marketing by linking buyers and sellers with their commissions. ・ Price formulation surveyed (see **Table D 5.1.1**) shows wholesalers gain very high profit margin but no statistics are available.	・ Collective marketing by farmers group is very rare resulting in poor bargaining power of farmers due to inactive farmers group activity.
1.5 Poor quality control of paddy	・ The quality factor of paddy is not much significant in the transaction, which causes poor quality control by farmers.	・ Most of middlemen and some rice millers play speculation of paddy/rice sales rather than quality controllers.
1.6 Insufficient paddy purchase by Government	・ Government intervenes to regulate paddy price at relatively higher price than present market prices. But the amount is limited i.e. one family can sell 100 bushels (2.2 ton) only and her budget is also ceiling to approx. 5% of total surplus in Yara 2004. For Maha 2005, Government announced in Feb. to intervenes paddy market by purchasing 40,000 ton of paddy, which is equivalent to 1.5% of national production only at average price of Rs17.5/kg. The budget for this intervention was announced as Rs700Millions.	・ Farmer welcomes Government intervention for paddy purchase scheme because of its good prices but not satisfied with the amount they can sell due to the ceiling policy and not enough Gov. budget for this scheme. ・ Shortage of storage capacity causes Gov. intervention troublesome or inefficient in conducting paddy purchase.

Category	Present Situation	Problems Description
	・ ASC at RB of Rajangana revealed that due to shortage of storage capacity available, they could intervene paddy purchase only 150ton in Yara 2004, though the budget was allocated for 500ton.	
1.7 Deterioration of feeder roads	・ Large tractors or large size threshers are getting popular in the study area. Those farm machines deteriorate rural and feeder roads by its weight though roads are graveled.	・ Maintenance of rural and feeder roads should be done periodically otherwise the market accessibility will become difficult.
Particular Situation in Nachchaduwa Major Scheme and Thuruwila Medium Scheme		
	・ In Nachchaduwa scheme, 24 commercial rice mills are actively in operation mainly along with main road (number of village mill is 25 only). So farmer can sell paddy directly to rice mills without paying collectors' margin except those farmers who have informal loan/credit from local traders (Mudalali) or rice mills having no choice but selling to creditors.	・ Farmers in Nachchaduwa and Thuruwila have better chance in selling their paddy by direct negotiation with buyers (rice millers) or joining differed payment agreement system.
Particular Situation in Rajangana Major Scheme		
	・ Number of commercial rice mill within the Scheme is very limited. DO reports there are only two (2) commercial rice mills in the area. The reasons behind would be ① Power supply to this area was late, in early 1990s. ② Location is far from main national road ③ New settlers with less assets are majority The capacity of these commercial rice mills is low. ・ In Rajangana, many small village mills are in services: 69 mills in RB and 64 mills in LB totaling to 133 mills for mainly farmers' own consumption.	・ Farmers in this area have no choices but to sell paddy to middlemen/collectors who deduct their commission from farmers' price or transport to rice millers with certain transport fee for the distance. The selling price is lower than in Nachchaduwa in general, where farmers can sell paddy to commercial rice mills directly due to the availability of commercial rice mills. For increase paddy sales price, farmers in Rajangana should aim to group activities such as bulking with quality control or collective marketing of their paddy.
2. Marketing and Processing of OFC, Vegetables & Fruits	Common Points	
2.1 Price fluctuation	・ Farmers sometime suffer damages by price fluctuation of vegetable and fruits.	・ Fresh vegetable and fruits prices are always changing largely depending on the situation of supply and demand, however farmers are very hard to predict such situation. Systematic record keeping for the past price fluctuation and its disseminating system should be established.
2.2 Inactive group activity	・ Cultivation of other crops than paddy is on the increase because of better profitability. But farmers carry out marketing of those crops individually due to inactive group works which causes poor bargaining power, except one case of young farmers' group activity	・ Facilitation of farmers group for collective marketing should be pushed forward. ・ Bulking activity with quality control of OFC by farmers enables farmers to be in better market access and/or negotiation with buyers.

Category	Present Situation	Problems Description
2.3 Low prices of perishable products	・ **Table D 5.2.2/3** shows wholesales and retailers margin is high for perishable products. It is reasonable that they need margin to cover damages and losses during marketing under present conditions.	・ New technologies in post-harvest handling, packing, storing should be established and extended, such as use of plastic box or carton box, cold storage and cold chain and etc.
2.4 Lack of know-how on fruits harvesting products	・ Normally middlemen collect fruits at farm gate or on farm in stead farmers sell them at markets unlike the case of vegetable, because farmers lack know-how in determining appropriate harvest timing and minimizing damages of fruits in transporting and marketing.	・ IPHT developed parameter of proper harvest timing for various agricultural products but extension or dissemination of such technology is not successful yet. Further extension works in joint efforts of relevant Gov. agencies such as DOA, IMD and District Gov. is required. If fruits farmers can harvest and sell at wholesale market, they can earn better income.
2.5 Forward sales contract by individual farmers	・ Forward sales contract is made individually not through FO, which put farmers in a weak position during contract negotiation ・ The function of FO is not strong like Mahaweli system H, where FO works as a window to collectors (companies) for member farmers in entering into to forward sales agreement of OFC with collectors.	・ Individual negotiation by a farmer and a collector always put farmers in a weak position during contract negotiation. Group activity of farmers or negotiation through FO is required through appropriate supports from Gov. agencies. ・ Common pick-up points (consolidating stations) are not available for OFC such as maize, beans and kurakkan (millet) so farmers deal with collectors individually resulting to lower farm gate prices.
2.6 High post-harvest loss	・ Post-harvest losses of vegetable and fruits are reported as high as 30~40% which causes reduced income of farmers. ・ Polyethylene string-bag is common for packing and transport vegetable and fruits. The use of plastic box for minimizing damages/losses is very rare, it only can be observed at specific marketing route between farmers and buyers. But for tomato transport, wooden box is widely used.	・ Cost of packing material of products is borne by farmers and consumers. The cost of string-bag is Rs14-15/bag and farmers receive Rs10/bag for each bag after selling the products in markets. The cost of plastic box is Rs400/box. Unless there is a system to return the plastic box to farmers, the use of plastic box will not be popularized. ・ If carton box for fruit/vegetable transport is developed locally at very reasonable price level, it will help minimizing damages and losses during marketing and will benefit farmers and traders eventually consumers. It is recommended Gov. sector such as IPHT to study setting up cottage level Carton Box factory utilizing locally available material such as used newspaper, banana tree, bagasse, etc.
Particular Situation in Nachchaduwa Major Scheme and Thuruwila Medium Scheme		
	・ Farmers started imitating young farmers' group activities in vegetable cultivation. As most of those vegetable farmers sell products at Dambulla directly, oversupply and sharp price drop of vegetable might be happened.	・ There is no pre-cooling facility or cold storage for vegetable/fruits available in the Study area, no buffer function to those perishable products. It is necessary to study introducing such facility in near future for Government sector.
Particular Situation in Rajangana Major Scheme		
	・ As Thambuttegama wholesale market is not lively in business and farmers' selling prices are generally lower than those in Dambulla.	・ No special incentives such as reducing the parking fee or other assistances to buyers and sellers have been taken to activate

Category	Present Situation	Problems Description
	Many farmers sell vegetable to village collectors, who send about 60% of available vegetable in Rajangana Scheme to Colombo, which results lower farm gate prices. ・ The access fee (parking fee to sellers) in the market is fixed at same rate in Thambuttegama and Dambulla i.e. Rs50 per larger than 5 ton lorry, Rs20 per smaller than 4.9 ton lorry and Rs10 per 2 wheel tractor and 3 wheeler.	Thambuttegama wholesalers market.
3. Other income generation through Marketing & Processing	Common Points	
3.1 Value addition activity is not active	・ Value addition activities such as Pulse processing, Chili powder making, Rice flour making by farmers on commercial basis are not in active, which results poor opportunity for income generation.	・ Food processing activities by farmer/farmers group is not active due to ① Insufficient farmers' capacity/competence ② Inadequate technical and marketing skill training by Gov. sectors ③Messy application for bank loans and its high interest rate, etc. Comprehensive approach to strengthen food-processing activities including mobilization of farmers and holistic support system by Gov. sector should be studied and implemented.
3.2 Available resources are not utilized	・ Available resources in villages such as Coconuts fiber, Cow-dung and Rice straw are not utilized for additional income generation	・ Coconuts fiber can be sold at Rs0.35/piece if bulked. Farmers collect cow-dung as a material of organic fertilizer in Mahaweli system C area. Rice straw can be good nursery of mushroom, animal feed and organic fertilizer. These available resources should be utilized for additional farmers' income through appropriate training and group activities.

Chapter 8 BASIC APPROACH TO IMPROVE THE PRESENT CONSTRAINTS AND PROBLEMS FOR MARKETING & PROCESSING

The marketing structures in the Study areas are dominated by the private sector. The role of the government sector is limited to providing the necessary advice and facilitation of marketing channels, except the intervention in the national paddy-purchasing program. However there is a lot of activities and supports required to Government sector in the field of;

- Capacity development of farmers and farmers' group
- Provision (subsidies) of structures such as storage facility and consolidation station
- Improvement of Financial Condition of farmers
- Beneficial market information system to producers
- Development of appropriate technologies and its dissemination through various Training Programs

In the Study area, paddy and vegetable/fruits are main crops contributing to farmers' cash income. Most of farmers are not satisfied with the current situation saying "Low Prices & Less Profits". The present situation and problems are studied and summarized in Chapter 3 and basing on this studies and analysis, basic approach for the improvement is drafted as shown in the following tables (**Table D 8.3.1**).

8.1 Paddy

The self-sufficiency target of rice supply was practically achieved but sudden increase of rice import was observed such as in 1996, 1997, 1999 and 2004 (Refer to **Table D 1.2.1**), which was mainly caused by abnormal weather condition. Government intervenes paddy purchase aiming at lifting the floor price of farm-gate through national paddy purchasing program. Government should create a stockpile system against emergencies in conjunction with the paddy purchase program.

In this connection, technical assistance from donor agency including JICA would be a help to establish the management system of national stockpile and paddy purchase program in efficiency and effectiveness with Government bodies.

Farmers are not satisfied with current market prices of paddy. But the total demand for rice in Sri Lanka is saturated so the real rice price will not be increased though the apparent rice price may go up according to the inflation and foreign exchange rates. Further, rice is "inferior goods"; by improving the living standard of people, the consumption rate per capita decrease.

Under the circumstance mentioned above, what paddy farmers can take counter measurements for increase their income? Some farmers join the differed payment system involving rice millers and collectors as seen in Nachchaduwa aiming at earning better sales prices. But this system is totally individual and risky. IPHT (Institute of Post-Harvest Technology) promotes Rice Processing Village aiming at value addition by

selling milled rice at higher prices instead of selling paddy. Further efforts for the extension of this scheme are required to Government agencies, not only to IPHT alone. A farmer who didn't join this scheme reported that there is no rice market available after milling.

Farmers who have not many surplus of paddy should work together for bulking and quality control for strengthen the bargaining power. Multi-purpose storage facility for bulking and quality control of paddy and other products will facilitate these activities through proper supports and training from the officials. Some FOs in Mahaweli system C practices this activity.

When farmers sell their surplus of paddy, the market channel is very limited either to local commercial rice mills or collectors/middlemen by direct negotiation only. Under such limited sales route available, farmers have sense of stagnation resulting to inactive marketing efforts of their products. This situation was common in Thailand until Open Paddy Market was introduced for the benefits of farmers, middlemen and rice millers. Study on the Open Paddy Market in Thailand in order to establish similar one in Sri Lanka will be informative and helpful. This Market can include the function of Open Rice Market to anybody; farmers, small village rice millers, rice wholesalers and retailers. Through marketing of paddy/rice in this Market, farmers will eventually improve their post-harvest practices and quality control for their own benefits. Study on price formulation of rice (refer to **Table D 5.1.1**) shows high margin of wholesalers. Through the operation of Open Paddy/Rice Market, efficiency and transparency for fair trade of paddy/rice will be achieved.

Approach to improve financial condition of farmers who have fallen into debts cycle is also important.

8.2 OFC, Vegetable and Fruits

The self-sufficiency target of rice production was achieved resulting in a call for the diversification of agricultural products instead of heavy concentration on rice farming. However the diversification of agricultural products cannot progress unless producers have access to markets with reasonable earnings.

In the Study area, OFC production is not active as compared with neighboring Mahaweli system H, where many farmers enter into forward sales contract with feed companies/collectors through FO as a window. In Rajangana and Thuruwila scheme, farmers produce maize responding to verbal requests by collectors. No efforts to increase their bargaining power for prices negotiation through group activity is observed. Bulking works by farmers using multi-purpose storage will improve the situation. Participatory construction approach to such storages by farmers will strengthen their ownership, operation and maintenance.

In case vegetable and fruits, biggest issues to be overcome for farmers' benefits are price fluctuation and high margin to wholesalers/retailers. Price fluctuation is caused by the situation of supply and demand. Free competition among producers/suppliers of

vegetable and fruits generate such unbalancing. Improvement of market information system, which enable farmers to predict the situation of demand and supply more accurately should be studied and established. Zoning policy for proper production area for specific vegetable/fruits may create better production condition for farmers. In this connection, technical assistance from donor agencies including JICA would be able to contribute it.

Another issue in perishable products is high margin to wholesalers and retailers as compared with producers' farm gate prices. It is reasonable because under present handling practices of such products, damages and losses are quit high. Sellers need certain margin to cover such marketing losses. Measures for minimization of damages and losses during handling and marketing should be introduced such as systematic usage of plastic boxes or carton boxes instead of current string-bags being used. Buffer function and cold storage facility will be challenging matters in near future.

Thambuttegama Economic Center should be more activated for the benefits of farmers and collectors.

8.3 Other Income Generation

IPHT has developed various equipments for value addition through simple processing of products. Comprehensive mobilization and facilitation is required. Bulking and quality controlling activity for utilization of locally available resources should be activated for the benefits of farmers.

Table D 8.3.1 Problems and Approach for Marketing Sector

Category	Problem Description	Approach	Target Group
1. Marketing and Processing of Paddy	Common Points		
1.1 Farmers sell paddy at low prices	・ Many farmers sell paddy at low price for settlement of credit	(i) Improve the situation by farmers' own efforts and supports from outside.	(i) Farmers with debits (ii) Women group
1.2 .Short of paddy storage	・ Short of paddy storage ・ Brokers playing mediator role in paddy market	Construct storages and capacity development for operation and management of those storages. (i) Multipurpose storage for Agrarian Service Center for storing paddy/fertilizer/etc. (ii) Multipurpose storage for Farmers group (FO) for storing paddy, paddy seed, other grain and salable resources like coconuts fibers. (Participatory construction approach will enforce farmers' ownership)	(i) Gov. agencies (DOA, IMD, District Gov., etc) (ii) Farmers groups (FOs)
1.3 No market available for paddy and rice	・ No market available for paddy and rice	Study on setting up Open Paddy/Rice Market (OPM) in its necessity and effectiveness for increasing farmers' income. (i) To arrange study tour in Thailand where OPM is effectively functioning for the benefits of farmers, rice millers and collectors/middlemen. (ii) To apply donor agencies including JICA to conduct feasibility study. (iii) To introduce auction system in paddy sales by farmer groups to rice millers/brokers	(i) Gov. agencies (DOA, IMD, Bank, etc) and Rep. of FOs. (ii) Ditto (iii) Gov. agencies (DOA, IMD, District Gov., Farmers, Wholesalers)
1.4 Inactive group activity	・ Inactive group marketing for stronger bargaining power by farmers	Facilitation of farmers group for collective activities (i) Capacity development of Gov. officers for the facilitation of group activity to farmers. (ii) Extension of awareness training of the benefits by group activities to farmers. (iii) Training of management skill for group activity.	(i) Officers (DOA, IMD, etc) (ii) FO and Farmers (iii) FO and farmers group
1.5 Poor quality control of paddy	・ Poor quality control of paddy	Improve post harvest-processing technologies of farmer. (i) Extension of post-harvest technologies (ii) Awareness training to farmers,	(i) Gov. agencies (IPHT, DOA, IMD, etc) (ii) FO, Farmers group, rice

Category	Problem Description	Approach	Target Group
		rice millers and middlemen for the benefits of high quality paddy.	millers group and middlemen group
1.6 Insufficient paddy purchase by Goverm,emt	・ Insufficient paddy purchase by Gov. ・ No consolidated policy of national paddy purchase and stockpile for the emergency	(i) To approach Gov. to increase the budget and study effective policy (ii) To approach local ASC to increase purchasing and storage capability.	・ Gov. agencies
1.7 Deterioration of Feeder roads	・ Deterioration of Feeder roads	Planning of road maintenance and its execution. (i) Increase Gov. budgets. (ii) Communal repair works	 (i) Gov. agencies (ii) FO and residents
	Particular Situation in Nachchaduwa Major Scheme and Thuruwila Medium Scheme		
	・ Farmers in these Scheme have better chance to sell paddy directly to rice millers	・ Facilitation of differed payment agreement system and secure the transparency of the agreement	・ Gov. agencies and FO, Rice Millers and Middlemen
	Particular Situation in Rajangana Major Scheme		
	・ Selling prices of paddy is low due to limited direct access to rice mills.	(i) Direct sale to large-scale rice millers at better price through bulking and quality control of paddy. (ii) Awareness training to farmers for the benefits of bulking and collective sales. (iii) Construct paddy storage and quality control training and machine input. (Participatory construction approach will enforce farmers enrollment for the scheme) (iv) Facilitation of farmers' group activity by Gov. agencies.	(i) FO and Farmers groups (ii) FO and Farmers group (iii) FO/Farmers group and Gov. agencies for subsidy. (iv) Gov. agencies (DOA, IMD, etc)
	・ Number of commercial rice mill is so little.	(i) To facilitate commercial sector to invest new commercial rice mill by some incentives.	(i) Rice mills, Bank, Rice brokers & Gov.
2. Marketing and Processing of OFC, Vegetable & Fruits	Common Points		
2.1 Price fluctuation	・ Price fluctuation of vegetable and fruits ・ Free competition among suppliers	(i) Systematic recording of such fluctuation and its dissemination to farmers for their benefits. (ii) Zoning policy for specified products	(i) Gov. agencies and FO (ii) Policy makers in Central Gov.
2.2 Inactive group activity	・ Group marketing activity is rare	(i) Facilitation of farmers group for collective activity. (ii) To construct consolidating station.	・ Gov. agencies and FO
2.3 Low prices of perishable	・ Farm gate prices are low but wholesalers and retailers'	(i) Extension of gentle post-harvest handling practice for minimizing	・ Gov. agencies, farmers, wholesalers, retailers and

Category	Problem Description	Approach	Target Group
products	margin is high on perishable products due to very high post-harvest losses	damages to perishable products (ii) Introduction of plastic box, carton box and cold storage into practice	transporters
2.4 Lack of know-how on fruits harvesting products	・ Farmers lack know-how in appropriate fruits harvesting	(i) Dissemination of appropriate technologies and training	(i) IPHT, DOA, IMD, Farmers and FO
2.5 Forward sales contract in made by individual farmers	・ Forward sales contract in made by individual farmers	Facilitation of farmers group for collective activities (i) Capacity development of Gov. officers for the facilitation of group activity to farmers. (ii) Extension of awareness training of the benefits by group activities to farmers. (iii) Training of management skill for farmers group.	(i) Officers (DOA, IMD, etc) (ii) FO and Farmers (iii) FO and farmers group
2.6 High post-harvest loss	・ Post-harvest loss is very high	(i) Extension of post-harvest technologies to farmers and traders. (ii) To extend plastic boxes in the marketing with returning system to suppliers. (iii) To construct carton box factory for low cost box production utilizing local available materials.	(i) IPHT, DOA, IMD, Farmers and FO (ii) Ditto (iii) IPHT for study
	Particular Situation in Nachchaduwa Major Scheme and Thuruwila Medium Scheme		
	・ Many farmers started vegetable cultivation and supply it to Dambulla directly and there is no cooling facility and buffering function	(i) Study pre-cooling facility and cold storage (ii) Study the buffering function	(i) IPHT and Gov. agencies (ii) Ditto
	Particular Situation in Rajangana Major Scheme		
	・ Thambuttegama Economic Center (wholesale market) is not lively in business, resulting relatively low trade prices	(i) Incentives should be applied for active transaction to all stakeholders, who use this facility	(iii) Min. of Rural Industries and District Gov.
3. Other income generation through Marketing & Processing	Common Points		
3.1 Value addition activity is not active	・ Value addition activities on agricultural products is not active	(i) Comprehensive approach by technical, financial and social supports are required.	(i) IPHT, DOA, IMD, Farmers and FO
3.2 Available resources are not utilized	・ Available resources are not properly utilized	(i) To construct storing facility and marketing activities by group.	(i) IPHT, DOA, IMD, Farmers and FO

CHAPTER 9 FORMUALATION OF PLAN TO INCREASE THE CAPACITY OF INTEGRATED MANAGEMENT

Basing on the analysis on the problems and approach for the marketing sector, following training programs in **Table D 9.1.1** are listed.

Table D 9.1.1 Marketing: Program Contents of Training Courses

Title	Program Contents	Target Group
Marketing and Processing of Paddy		
Facilitation of money saving	- Importance of account - Introduction of activities by farmers (farmers group, women's activity, etc.) in Sri Lanka - Various Gov. scheme - Micro Credit scheme - Family budget planning and its control - (Income/expenditure, Balance sheet, Stock book) - Study tour to developed area	Farmers
Operation and maintenance of warehouse	- Planning and designing of Storage (including Participatory construction system) - Quality control in grains - Scientific methods of storage of grains - Pest damage in grain stores and integrated pest control - Improvement of storage facilities - Grain quality management (methods of sampling) - Study tour to developed area. (Pilot project by Technical Corporation Project by JICA)	Government officials and FOs
Open Paddy Market (OPM), Operation and maintenance	- Function and operation of OPM - Management of OPM - Paddy/rice quality and its control - Auction system for paddy and rice - Accounting and book-keeping for OPM - Study tour to Thailand (Pilot project by Technical Corporation Project by JICA)	FO/FCG, Rice millers and Paddy collectors
Marketing & Processing of OFC, Vegetables & Fruits		
Market information and dissemination	- Price fluctuation and its background - Supply and demand situation - Record keeping of its analysis - Public Relation for information dissemination - Dissemination system within the Society (Technical Corporation by JICA Expert)	Farmers, FO/FCG, collectors, wholesalers
Zoning policy for vegetable and fruits	- Policy on the zoning and its regulation system - Buffer system and facilities - Overseas training at FAO, JICA, etc. (Technical Corporation by FAO, JICA, etc.)	Government officials
Minimization of post-harvest loss	1. Post-harvest technology of Grains - Post-harvest wastage of grain in Quality & Quantity - Principals & practical methods in harvesting & threshing - Drying (control of moisture control) and Storage - Quality controlling of grains 2. Post-harvest technology of Vegetable/Fruits - Awareness of post-harvest losses from farm gate till consumers - Principals & practical methods in harvesting - Gentle-handling 3. Plastic box - Circulation system - Subsidies policy for plastic box	Farmers, collectors, wholesalers, transporters & retailers

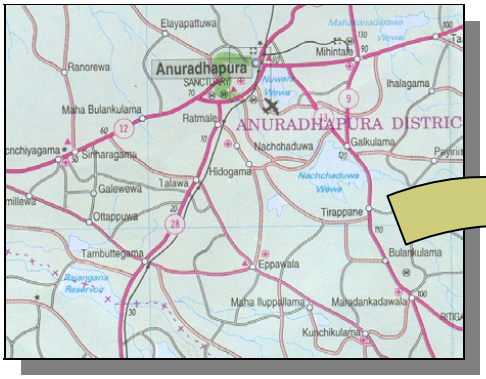
	- Transportation 4. Carton box - Technology of carton box manufacturing locally - Factory management - Marketing of carton box - Recycle system (Pilot project by Technical Corporation Project by JICA)	
Management of Economic Center	- Activation skill of Wholesales Market - Incentive application for the activation	Thambuttegama E.C. Farmers, FCG, FO, Buyers
Other Income Generation		
Value addition and food processing	- Bulking and marketing - Management of group activity - Value addition of OFC - Food processing technologies - Food hygiene and quality control of products	FO, FCG
Common in three (3) categories		
Group activity	- Importance of group activity - Facilitation of group activity - Participatory action plan of activities - Management of group activity including book keeping practices - Study tour to developed area	Farmers, FCG, FO, wholesalers

Attachment

Attachment D1

Marketing Flows of Main Agricultural Crops in the Study Area

Main Marketing Channels and approx. volume of each crops in Nachchaduwa Area



80% Milco/Nestle

20% Project Area

40% Project Area

90% Local Traders

10%Pola Roads

60%Anuradhapura/ Mihintale

70% Local Mills & village

40% Anuradhapura

25% Out Side Millers

60% Project Area

5%Government Sector

80% Dambulla

15% Anuradhapura Pola

5% Village Collectors

10% Roads Pola

15%Local Traders

30% Outside Traders

10% Outside Traders

60% Local Collectors

70% Companies

5% Own Consumption

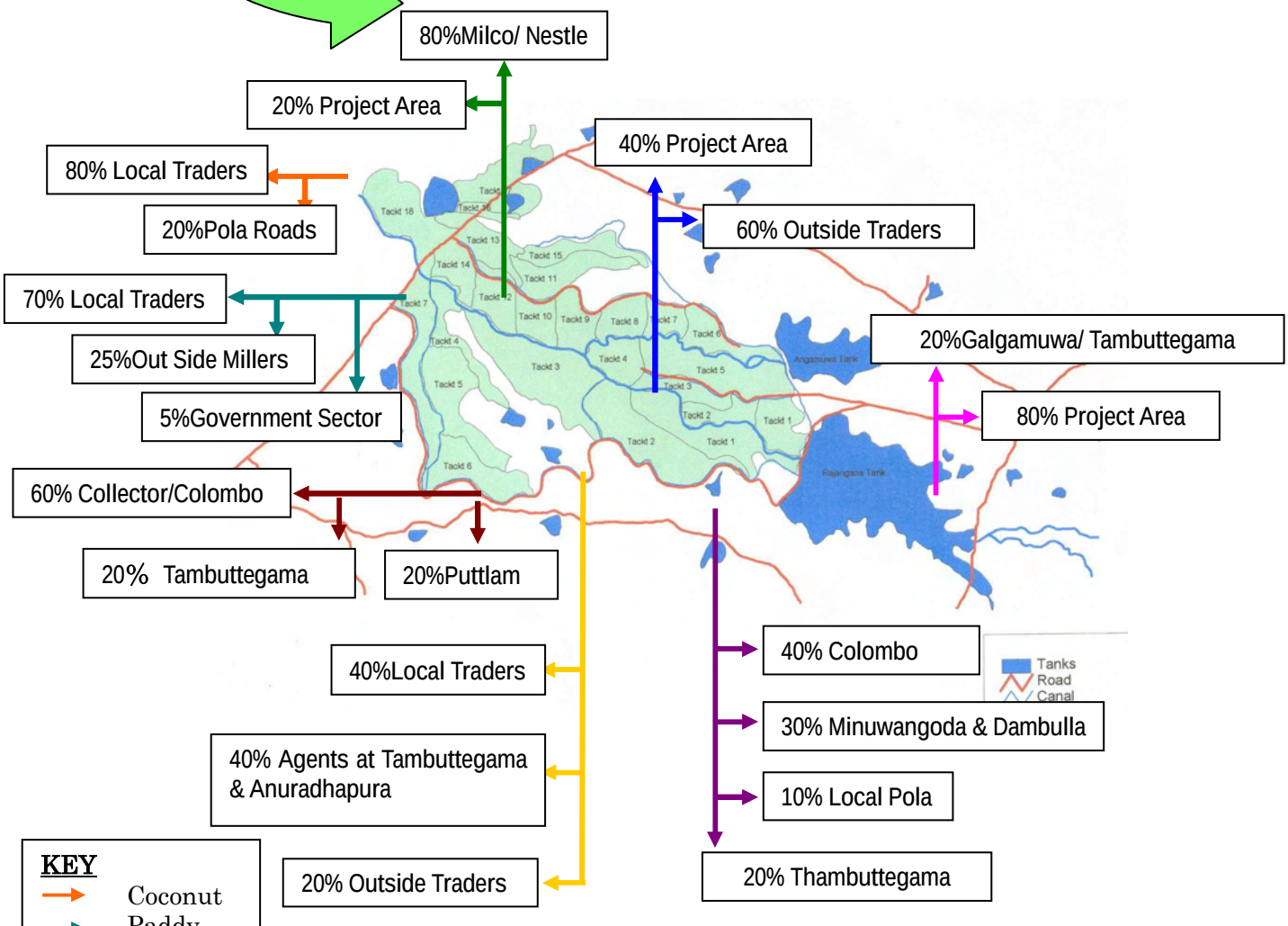
KEY

- Coconut
- Paddy
- Vegetable
- OFC
- Fruits
- Fish
- Poultry
- Milk

Attachment D2

Marketing Facilities

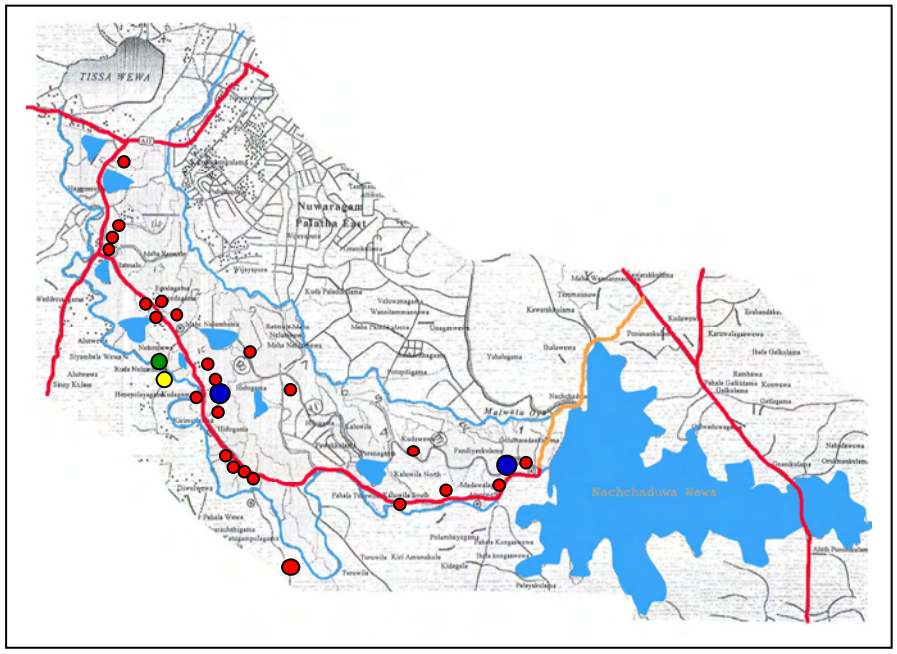
Main Marketing Channels and approx. volume of each crops in Rajangana Area



Attachment D3

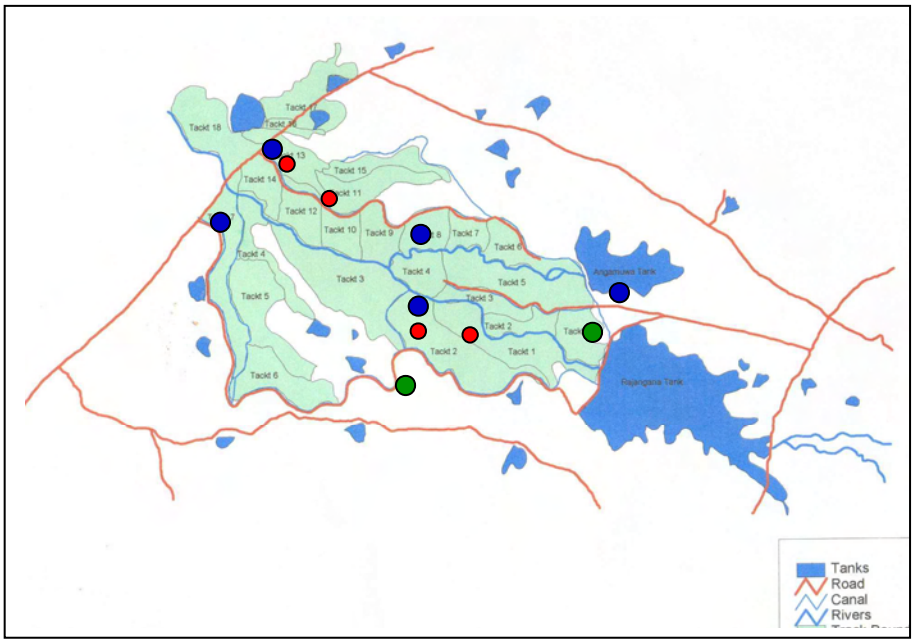
Production and Price Fluctuation of Agricultural Products

Marketing Facilities in Nachchaduwa Area



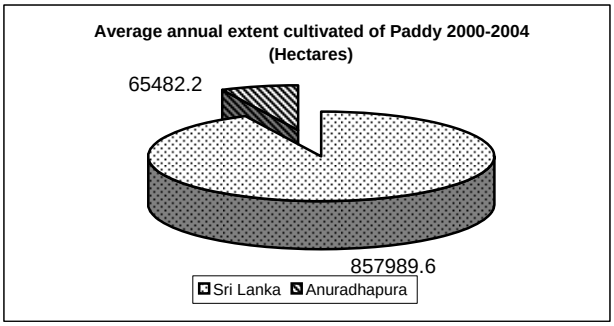
- D S Office, IMD Office
- D A S Office
- Commercial Rice Mills
- Village Pola

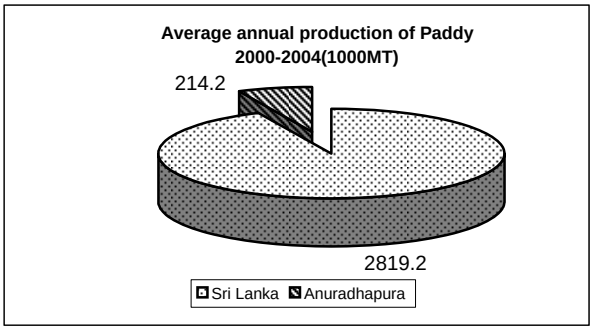
Marketing Facilities in Rajangana Area

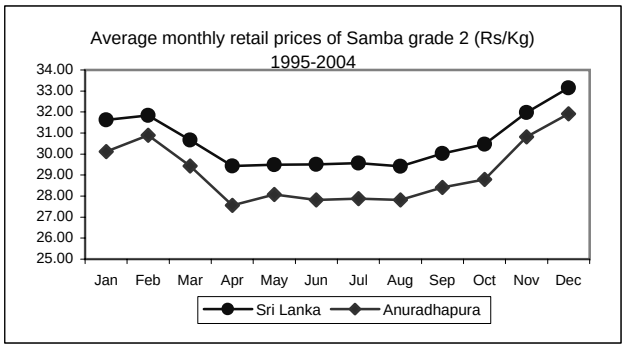


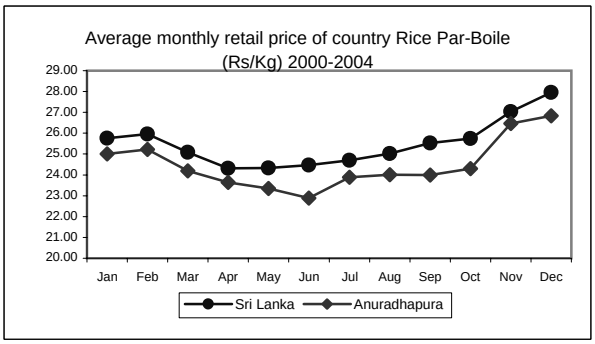
- D S Office, IMD Office
- Commercial Rice Mills
- Village Pola

1. PADDY









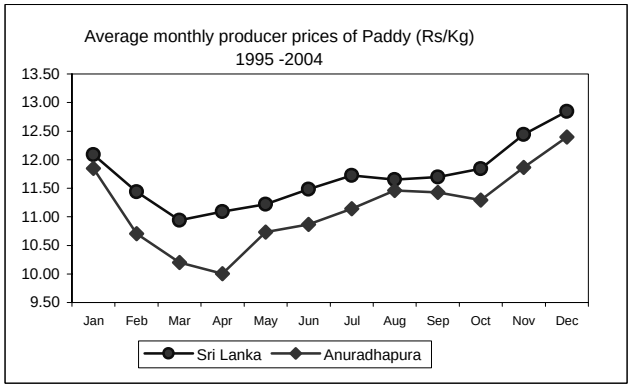


Table 1.1 Extent cultivated & Production of Paddy in Anuradhapura district as compare to Sri Lanka

Season/Year	Sri Lanka		Anuradhapura	
	Extent Cultivated (hectares)	Production (1000 MT)	Extent Cultivated (hectares)	Production (1000 MT)
2000 Maha	549246	1781	56543	192
2000 Yala	328748	1079	21213	68
Total	877994	2860	77756	260
2001 Maha	478986	1613	40799	146
2001 Yala	319273	1082	17507	62
Total	798259	2695	58306	208
2002 Maha	510403	1774	47191	164
2002 Yala	342126	1086	12347	40
Total	852529	2860	59538	204
2003 Maha	601584	1895	66055	219
2003 Yala	381033	1177	23570	68
Total	982617	3072	89625	287
2004 Maha	520662	1670	39098	102
2004 Yala	257887	939	3088	10
Total	778549	2609	42186	112
Average Maha	532176	1747	49937	165
Yala	325813	1073	15545	50
Annual	857990	2819	65482	214

Sources :Department of Census and Statistics

Table1.2 Average Monthly Producer price of Paddy in Sri Lanka 1995-2004 (Unit Price:Rs/Kg)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver
January	8.45	8.22	11.27	12.48	11.84	12.10	12.72	15.02	14.32	14.45	12.09
February	8.07	8.49	10.59	10.02	12.66	10.67	12.10	14.86	12.86	14.04	11.44
March	7.38	8.14	10.06	9.98	12.50	10.25	12.21	13.18	12.08	13.63	10.94
April	7.44	8.54	10.08	9.74	12.59	10.77	12.12	13.17	12.08	14.40	11.09
May	7.78	8.79	10.11	9.99	12.90	10.54	11.52	13.45	12.14	14.97	11.22
June	7.95	9.59	10.13	10.32	12.90	10.57	12.28	13.67	12.42	15.01	11.48
July	8.20	10.16	10.41	10.21	13.09	11.09	12.32	13.22	12.45	16.10	11.73
August	7.33	10.60	10.83	9.90	12.80	11.64	12.49	12.82	12.08	16.03	11.65
September	7.83	11.08	10.97	9.60	12.40	10.66	12.17	13.46	11.85	16.92	11.69
October	7.42	10.99	11.46	9.97	12.77	10.32	12.73	13.84	12.05	16.87	11.84
November	7.85	11.59	12.03	10.61	12.60	11.51	13.36	13.76	13.06	18.05	12.44
December	8.18	11.84	11.96	11.12	12.83	12.68	13.66	14.28	14.02	17.85	12.84
Annu Aver	7.83	9.95	10.80	10.25	12.66	11.08	12.47	13.76	12.60	15.66	11.71

Sources :Department of Census and Statistics

Table1.3 Average Monthly Producer price of Paddy in Anuradhapura district 1995-2004 (Unit Price:Rs/Kg)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver
January	7.00	8.42	9.98	12.02	11.60	12.25	12.19	14.44	15.26	15.32	11.85
February	6.60	7.52	8.78	9.37	12.27	10.93	12.26	13.38	11.15	14.79	10.71
March	6.75	7.73	9.42	9.11	12.39	7.94	11.98	12.38	11.08	13.23	10.20
April	6.46	7.87	9.41	8.92	10.25	10.83	10.75	12.71	10.95	11.88	10.00
May	7.46	7.98	10.30	10.67	12.58	9.54	11.68	13.02	10.45	13.64	10.73
June	6.98	8.70	10.25	10.16	11.62	10.50	11.53	12.76	12.05	14.14	10.87
July	7.12	10.05	10.67	10.64	11.91	10.43	12.09	12.25	11.01	15.23	11.14
August	6.78	10.39	10.79	10.55	12.07	12.75	12.24	12.54	10.71	15.80	11.46
September	6.81	11.89	10.54	10.10	12.25	10.06	11.77	11.99	10.87	18.01	11.43
October	6.63	10.08	11.66	10.19	12.23	10.48	12.49	12.25	11.42	15.47	11.29
November	7.00	11.59	12.09	10.70	12.38	10.38	12.24	13.65	13.37	15.25	11.87
December	7.30	10.85	12.04	11.34	12.55	11.59	12.88	15.00	14.10	16.30	12.40
Annu Aver	6.91	9.42	10.49	10.31	12.01	10.64	12.01	13.03	11.87	14.92	11.16

Sources :Department of Census and Statistics

Table1.4 Average Monthly Retail price of Rice - Par Boile in Sri Lanka 1995-2004 (Unit Price:Rs/Kg)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver
Jan	16.17	17.38	23.81	25.61	27.68	26.56	26.00	31.98	31.76	30.65	25.76
Feb	16.08	17.72	22.52	23.78	28.71	26.36	26.70	35.13	30.96	31.67	25.96
Mar	15.73	17.72	21.79	22.06	27.70	25.54	26.49	33.58	28.72	31.44	25.08
Apr	15.09	17.58	20.56	21.19	26.17	25.18	26.31	31.47	27.21	32.41	24.32
May	15.14	18.79	21.02	21.25	26.45	24.59	25.59	31.07	26.40	33.07	24.34
Jun	15.37	19.93	20.78	21.56	26.25	23.33	26.37	30.66	26.69	33.80	24.47
Jul	15.56	21.73	21.28	21.67	25.92	22.81	26.54	30.05	26.29	35.19	24.70
Aug	15.37	23.46	21.97	21.78	25.46	22.65	26.81	30.01	25.85	36.93	25.03
Sep	15.15	24.04	22.37	21.54	26.04	23.09	27.33	29.22	25.39	41.18	25.54
Oct	15.35	23.91	23.67	22.02	25.15	22.95	27.99	29.68	25.24	41.46	25.74
Nov	17.14	24.41	26.28	23.38	25.90	24.36	29.58	30.79	27.23	41.27	27.03
Dec	17.81	24.61	25.99	24.53	26.15	26.17	31.18	31.64	28.70	42.77	27.96
An Av	15.83	20.94	22.67	22.53	26.47	24.47	27.24	31.27	27.54	35.99	25.49

Sources :Department of Census and Statistics

Table1.5 Average Monthly Retail price of Rice - Par Boile in Anuradhapura district 1995-2004 (Unit Price:Rs/Kg)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver
Jan	14.50	16.80	20.05	25.75	28.50	25.75	25.50	32.13	31.23	29.83	25.00
Feb	14.50	17.00	21.33	24.00	29.25	25.00	25.75	35.32	29.41	30.66	25.22
Mar	14.83	16.00	19.63	20.00	28.25	25.50	25.75	32.29	29.41	30.33	24.20
Apr	14.75	16.00	20.00	21.50	27.50	23.50	26.00	30.05	26.55	30.50	23.64
May	14.79	19.00	20.38	20.00	26.09	21.25	26.00	30.25	24.71	31.04	23.35
Jun	14.58	17.33	19.38	19.06	26.00	21.00	26.50	29.06	26.07	29.87	22.89
Jul	14.66	21.35	20.59	22.31	25.56	20.71	26.50	29.09	25.64	32.50	23.89
Aug	14.43	21.25	21.44	21.50	25.49	21.50	27.00	29.00	25.58	32.96	24.02
Sep	13.88	22.00	22.00	19.25	25.50	21.00	27.25	28.59	25.18	35.30	24.00
Oct	13.50	23.08	23.25	21.42	24.75	22.13	27.75	28.00	24.86	34.33	24.31
Nov	16.63	23.70	25.00	23.70	25.67	23.67	29.00	29.82	28.67	38.75	26.46
Dec	16.50	24.67	25.75	25.07	23.13	24.75	30.50	30.30	29.48	38.13	26.83
An Av	14.80	19.85	21.57	21.96	26.31	22.98	26.96	30.33	27.23	32.85	24.48

Sources :Department of Census and Statistics

Table1.6 Average Monthly Retail price of Rice - Samba Grade 2 in Sri Lanka 1995-2004 (Unit Price:Rs/Kg)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver
Jan	23.37	24.45	30.14	30.23	31.86	31.33	32.91	35.21	43.01	33.77	31.63
Feb	23.00	24.70	28.31	29.34	33.09	30.52	34.11	37.06	42.70	35.52	31.84
Mar	22.76	24.80	26.34	27.79	32.80	29.41	34.00	35.61	38.79	34.30	30.66
Apr	21.27	24.43	25.61	25.75	32.58	28.96	32.67	34.47	34.01	34.53	29.43
May	20.83	24.51	26.88	27.14	32.14	28.75	32.18	34.21	31.88	36.39	29.49
Jun	20.53	24.88	27.25	27.70	31.92	27.87	32.07	33.82	31.93	37.17	29.51
Jul	21.86	25.38	27.25	27.38	31.27	27.73	31.94	32.60	31.82	38.38	29.56
Aug	21.11	26.62	27.03	27.45	30.07	28.04	31.52	32.43	30.90	39.00	29.42
Sep	20.85	27.55	27.24	27.47	29.58	28.70	31.16	33.02	30.51	44.19	30.03
Oct	21.30	27.92	27.92	27.96	29.58	28.91	31.86	33.91	30.55	44.73	30.46
Nov	24.14	29.05	30.11	29.75	29.56	30.44	32.84	36.96	31.66	45.31	31.98
Dec	24.50	30.41	30.14	30.36	30.31	32.78	33.90	39.67	33.08	46.29	33.14
An Av	22.13	26.23	27.85	28.19	31.23	29.45	32.60	34.91	34.24	39.13	30.60

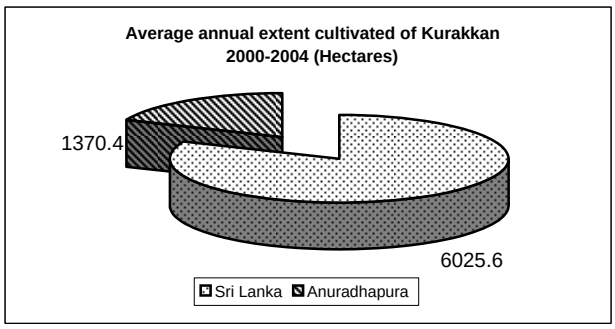
Sources :Department of Census and Statistics

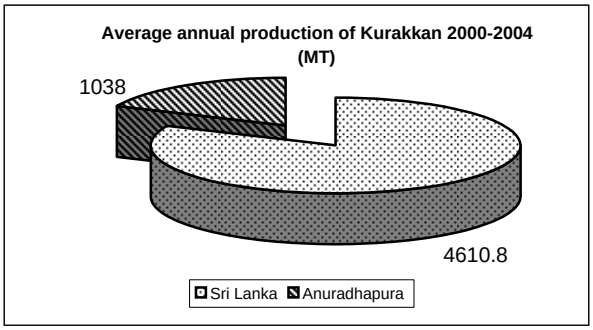
Table1.7 Average Monthly Retail price of Rice - Samba Grade2 in Anuradhapura district 1995-2004 (Unit Price:Rs/Kg)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver
Jan	22.00	23.56	28.90	30.00	32.50	30.42	26.00	33.47	42.25	32.00	30.11
Feb	22.50	23.17	26.24	29.00	33.34	29.17	33.09	37.00	42.50	33.00	30.90
Mar	22.00	23.75	25.79	27.00	31.50	28.50	33.00	32.84	38.87	31.00	29.43
Apr	20.87	22.00	25.75	25.50	31.50	27.50	26.41	32.83	31.50	31.66	27.55
May	22.00	23.50	26.25	26.50	31.49	27.25	30.50	31.16	29.00	33.04	28.07
Jun	18.66	24.33	26.50	25.81	30.00	27.75	30.50	31.75	29.57	33.33	27.82
Jul	19.72	24.40	26.13	26.33	30.92	25.38	30.50	31.54	29.00	34.83	27.88
Aug	19.66	25.00	26.44	26.50	29.24	25.71	30.00	32.00	28.66	35.00	27.82
Sep	19.08	25.50	26.00	25.50	29.10	27.25	30.50	32.62	27.62	41.00	28.42
Oct	20.00	27.25	27.00	25.08	28.31	27.50	31.13	33.66	27.62	40.39	28.79
Nov	23.38	27.50	28.25	29.00	28.31	29.25	31.75	35.91	30.83	44.00	30.82
Dec	23.00	30.33	29.63	29.07	28.50	31.50	33.00	38.60	32.50	43.00	31.91
An Av	21.07	25.02	26.91	27.11	30.39	28.10	30.53	33.62	32.49	36.02	29.13

Sources :Department of Census and Statistics

2. KURAKKAN





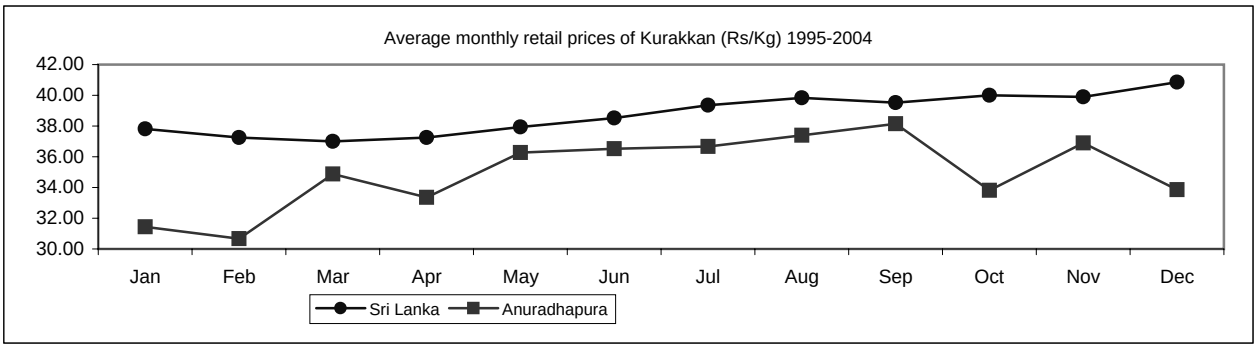


Table 2.1 Extent cultivated & Production of Kurakkan in Anuradhapura district as compare to Sri Lanka

Season/Year	Sri Lanka		Anuradhapura	
	Extent Cultivated (hectares)	Production (MT)	Extent Cultivated (hectares)	Production (MT)
2000 Maha	5667	4285	1282	863
2000 Yala	877	564	42	27
Total	6544	4849	1324	890
2001 Maha	4986	3774	1183	835
2001 Yala	650	422	38	25
Total	5636	4196	1221	860
2002 Maha	4830	3663	1472	1002
2002 Yala	647	408	37	25
Total	5477	4071	1509	1027
2003 Maha	6235	4544	1721	1270
2003 Yala	1123	725	79	52
Total	7358	5269	1800	1322
2004 Maha	4226	4026	921	1037
2004 Yala	887	643	77	54
Total	5113	4669	998	1091
Average Maha	5189	4058	1316	1001
Yala	837	552	55	37
Annual	6026	4611	1370	1038

Sources :Department of Census and Statistics

Table 2.2 Average Monthly Retail price of Kurakkan in Sri Lanka 1995-2004 (Unit Price:Rs/Kg)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver
January	17.79	21.47	31.88	30.50	38.35	31.83	41.43	45.09	45.18	74.70	37.82
February	20.52	22.67	29.05	31.63	35.27	31.21	42.32	46.73	38.63	74.53	37.26
March	16.93	22.97	28.75	33.87	35.38	35.24	41.11	44.98	36.27	74.43	36.99
April	17.30	25.11	29.22	35.40	35.62	31.73	42.94	43.11	38.32	73.75	37.25
May	17.98	24.39	30.92	35.52	38.69	34.04	43.13	43.07	37.86	73.75	37.94
June	15.01	26.14	30.31	36.88	37.68	38.50	44.19	43.26	38.83	74.32	38.51
July	19.65	26.64	28.54	36.33	38.38	41.25	44.53	44.50	39.43	74.33	39.36
August	21.74	26.95	29.48	36.48	38.70	41.19	45.04	43.78	40.39	74.56	39.83
September	21.69	29.32	31.37	33.10	41.19	41.51	42.57	42.51	37.10	74.78	39.51
October	20.80	33.20	32.72	32.53	38.97	41.37	42.27	41.96	40.92	75.16	39.99
November	20.04	33.39	34.48	31.89	39.10	40.17	43.99	41.31	38.42	76.16	39.90
December	20.03	34.09	34.86	33.47	39.53	43.55	44.47	42.98	39.33	76.20	40.85
Annu Aver	19.12	27.20	30.97	33.97	38.07	37.63	43.17	43.61	39.22	74.72	38.77

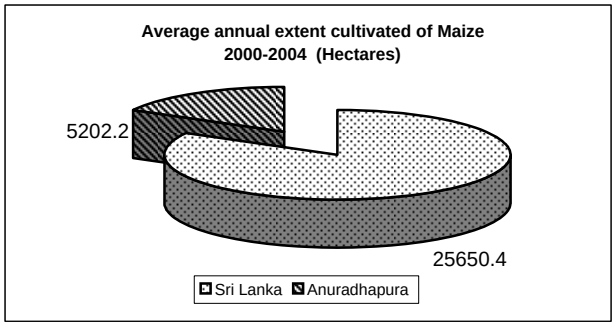
Sources :Department of Census and Statistics

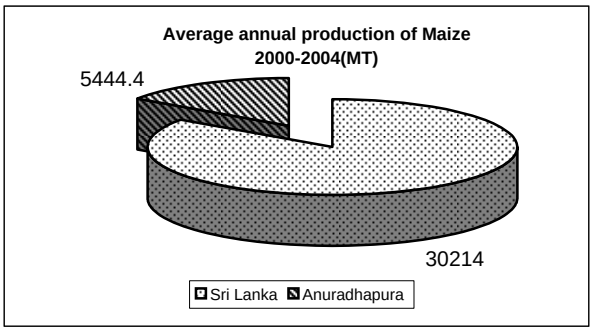
Table 2.3 Average Monthly Retail price of Kurakkan in Anuraddhapura district 1995-2004 (Unit Price:Rs/Kg)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver
January	20.00	30.00	36.00	20.00	40.00	20.67	44.00			40.75	31.43
February	16.75	31.00	24.17	25.00	25.00	25.00	44.00	45.00		40.00	30.66
March		31.00	24.17	33.00	28.00		44.00	45.00		39.00	34.88
April		30.50	20.28	38.00	30.00	21.00	45.00	40.00		42.00	33.35
May		32.75	17.92	40.00	35.00		45.00	40.00	40.00	39.50	36.27
June		31.00	17.17	40.00	40.00		45.00	40.00	40.00	39.00	36.52
July	37.50	30.00	27.50	30.00	40.00		45.00	40.00	40.00	40.00	36.67
August	42.73	30.00	20.00	37.67	40.00		45.00	40.00	40.00	41.25	37.41
September	40.00	30.00	26.00	48.00	40.00		40.00	40.00		41.25	38.16
October	32.00	33.25	34.00	30.00	20.00		40.00	40.00		41.25	33.81
November		32.75	34.00	37.00	20.00		42.00	40.00		52.50	36.89
December		33.00	28.00	34.00	20.00		42.00	40.00		40.00	33.86
Annu Aver	31.50	31.27	25.77	34.39	31.50	22.22	43.42	40.91	40.00	41.38	34.99

Sources :Department of Census and Statistics

3. MAIZE





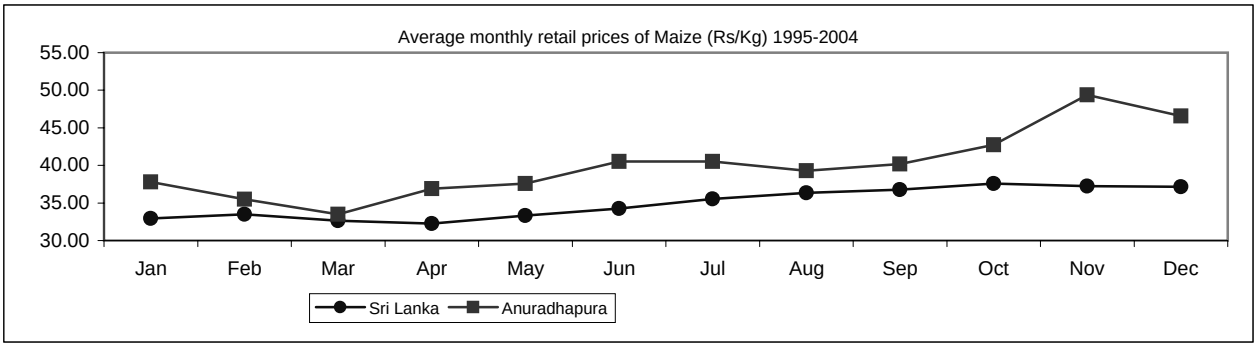


Table 3.1 Extent cultivated & Production of Maize in Anuradhapura district as compare to Sri Lanka

Season/Year	Sri Lanka		Anuradhapura	
	Extent Cultivated (hectares)	Production (MT)	Extent Cultivated (hectares)	Production (MT)
2000 Maha	26344	28540	6647	5682
2000 Yala	2302	2512	223	246
Total	28646	31052	6870	5928
2001 Maha	23734	26661	5682	5088
2001 Yala	1978	2094	222	248
Total	25712	28755	5904	5336
2002 Maha	20329	23244	3469	3130
2002 Yala	3084	3173	264	306
Total	23413	26417	3733	3436
2003 Maha	23449	25745	5480	5081
2003 Yala	3611	3900	270	320
Total	27060	29645	5750	5401
2004 Maha	20275	31449	3488	6802
2004 Yala	3146	3752	266	319
Total	23421	35201	3754	7121
Average Maha	22826	27128	4953	5157
Yala	2824	3086	249	288
Annual	25650	30214	5202	5444

Sources :Department of Census and Statistics

Table3.2 Average Monthly Retail price of Maize in Sri Lanka 1995-2004 (Unit Price:Rs/Kg)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver
January	13.30	17.18	24.05	19.66	22.01	24.12	30.13	35.50	41.68	44.30	32.96
February	13.25	17.30	22.08	14.98	23.08	24.94	29.71	38.06	41.17	43.88	33.47
March	13.54	18.05	21.47	16.15	22.21	23.30	27.30	38.59	40.46	43.95	32.64
April	15.16	20.13	19.84	17.21	21.60	21.90	27.57	39.17	39.14	44.16	32.26
May	14.42	20.21	18.52	17.33	22.89	20.39	29.15	40.95	39.51	47.16	33.34
June	13.94	20.27	21.36	17.13	24.24	21.04	32.50	41.34	38.31	48.10	34.26
July	13.80	20.57	20.75	16.92	24.95	22.41	33.95	42.97	40.17	48.79	35.54
August	15.06	21.73	22.08	16.99	25.43	27.28	34.17	40.79	41.28	49.20	36.36
September	18.81	22.06	22.36	17.97	25.81	27.68	34.56	41.21	42.68	48.68	36.77
October	18.14	24.33	22.45	18.01	25.75	27.87	34.30	43.08	43.38	51.15	37.59
November	20.40	23.66	22.75		27.03	23.58	35.89	41.25	44.54	51.05	37.22
December	20.07	24.58	21.40		27.55	27.13	34.99	39.18	43.56	50.50	37.15
Annu Aver	15.82	20.84	21.59	17.24	24.38	24.30	32.02	40.17	41.32	47.58	34.96

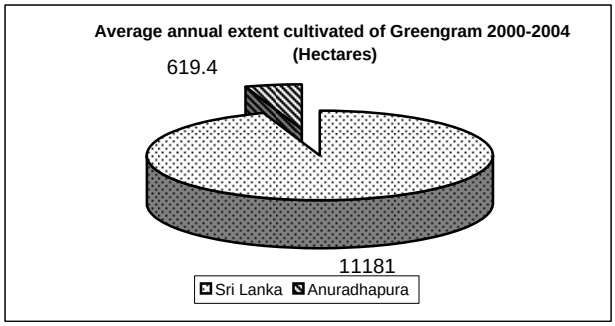
Sources :Department of Census and Statistics

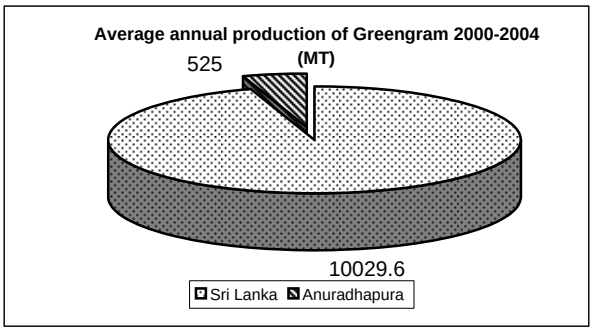
Table3.3 Average Monthly Retail price of Maize in Anuradhapura district 1995-2004 (Unit Price:Rs/Kg)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver
January					30.00		30.00		36.25	55.00	37.81
February							30.00		34.00	42.50	35.50
March					26.50		30.00		35.00	42.50	33.50
April					27.00				38.75	45.00	36.92
May					29.00				38.75	45.00	37.58
June					29.00			48.00	40.00	45.00	40.50
July					29.00			48.00	40.00	45.00	40.50
August					29.00	30.00		50.00	42.50	45.00	39.30
September					30.00	30.00		51.00	45.00	45.00	40.20
October					30.00	30.00		60.00	48.75	45.00	42.75
November					30.00			60.00	52.50	55.00	49.38
December					30.00			51.25	55.00	50.00	46.56
Annu Aver					29.05	30.00	30.00	52.61	42.21	46.67	40.04

Sources :Department of Census and Statistics

4. GREENGRAM





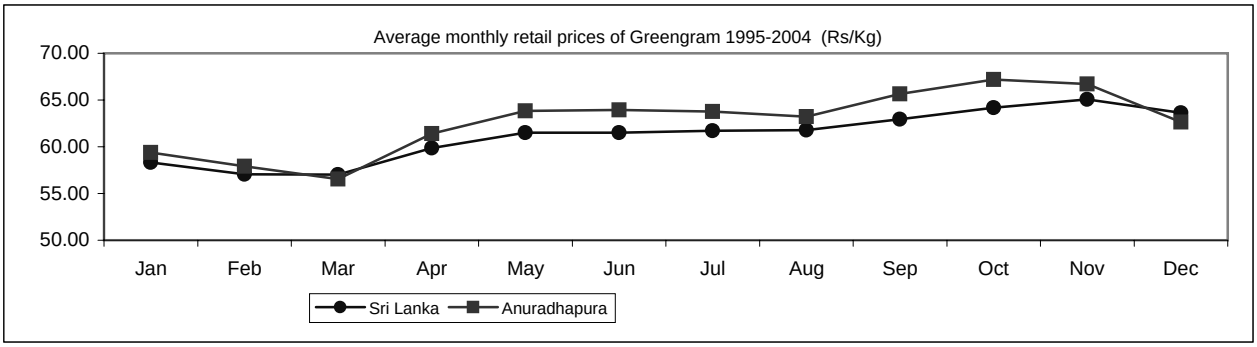


Table 4.1 Extent cultivated & Production of Greengram in Anuradhapura district as compare to Sri Lanka

Season/Year	Sri Lanka		Anuradhapura	
	Extent Cultivated (hectares)	Production (MT)	Extent Cultivated (hectares)	Production (MT)
2000 Maha	9716	8904	738	620
2000 Yala	3253	2791	75	53
Total	12969	11695	813	673
2001 Maha	8438	7589	652	547
2001 Yala	2627	2127	74	53
Total	11065	9716	726	600
2002 Maha	8501	7881	460	378
2002 Yala	2747	2443	81	61
Total	11248	10324	541	439
2003 Maha	9603	8560	542	459
2003 Yala	2413	2045	81	57
Total	12016	10605	623	516
2004 Maha	6438	5881	316	338
2004 Yala	2169	1927	78	59
Total	8607	7808	394	397
Average Maha	8539	7763	542	468
Yala	2642	2267	78	57
Annual	11181	10030	619	525

Sources :Department of Census and Statistics

Table 4.2 Average Monthly Retail price of Greengram in Sri Lanka 1995-2004 (Unit Price:Rs/Kg)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver
January	42.46	46.46	46.86	49.72	61.25	49.33	74.16	75.50	67.51	70.05	58.33
February	44.64	44.19	44.71	46.81	58.11	49.36	75.92	69.08	66.33	71.53	57.07
March	47.19	43.09	43.97	46.54	54.92	51.51	77.33	67.56	65.42	72.79	57.03
April	51.24	43.66	46.05	51.55	55.12	56.27	79.55	71.98	66.71	76.42	59.86
May	52.66	43.97	49.34	55.24	53.61	65.94	79.01	72.69	67.14	75.39	61.50
June	51.91	44.10	50.53	54.55	52.51	64.88	78.16	74.72	68.70	74.95	61.50
July	50.71	44.19	56.54	54.15	52.62	64.86	75.94	74.38	69.40	74.27	61.71
August	47.98	46.75	62.11	54.52	52.40	62.21	76.18	75.31	66.78	73.40	61.76
September	49.56	47.08	66.89	54.86	53.67	61.65	79.76	74.11	66.80	75.08	62.95
October	50.10	46.60	64.75	56.30	53.66	62.97	80.87	79.23	68.85	78.34	64.17
November	52.27	46.26	62.37	61.32	53.24	66.14	79.24	81.11	70.70	78.15	65.08
December	51.47	46.35	57.33	61.94	53.02	68.13	75.67	71.68	71.35	79.38	63.63
Annu Aver	49.35	45.23	54.29	53.96	54.51	60.27	77.65	73.95	67.97	74.98	61.22

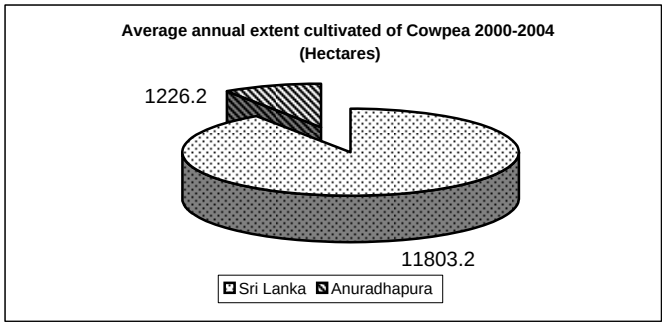
Sources :Department of Census and Statistics

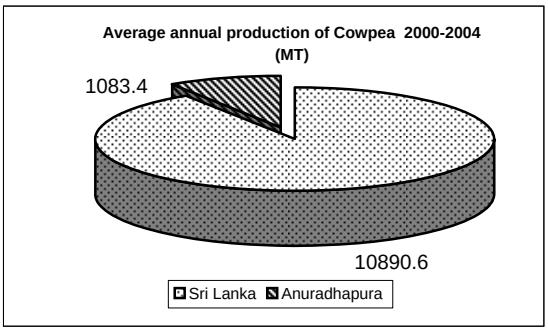
Table 4.3 Average Monthly Retail price of Greengram in Anuradhapura district 1995-2004 (Unit Price:Rs/Kg)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver
January	49.50	49.46	47.20	50.00	60.00	48.06	72.50	84.00	63.58	69.41	59.37
February	50.00	46.33	46.00	44.25	60.11	44.17	75.75	70.00	70.00	72.44	57.91
March	49.00	46.25	45.67	45.00	57.00	49.17	75.75	60.00	68.75	68.75	56.53
April	54.69	49.33	44.75	50.00	57.00	55.00	80.00	72.78	76.35	74.22	61.41
May	55.00	49.00	45.00	60.66	59.89	59.76	80.33	83.33	69.33	76.16	63.85
June	54.41	48.67	45.00	60.00	60.00	67.50	76.83	80.00	72.92	74.00	63.93
July	50.66	50.20	50.00	60.00	60.00	70.00	72.66	80.00	70.83	73.33	63.77
August	47.30	49.60	50.00	55.00	60.00	69.81	80.00	80.00	70.55	69.87	63.21
September	51.50	49.67	60.00	60.00	60.00	63.33	83.33	80.00	73.83	74.94	65.66
October	53.83	49.00	55.00	61.00	60.00	68.33	81.67	85.00	73.11	85.00	67.19
November	50.05	45.00	55.00	60.00	60.83	70.00	89.17	85.00	72.83	79.33	66.72
December	50.88	45.00	55.00	59.86	56.25	70.00	80.00	60.00	71.33	78.00	62.63
Annu Aver	51.40	48.13	49.89	55.48	59.26	61.26	79.00	76.68	71.12	74.62	62.68

Sources :Department of Census and Statistics

5. COWPEA





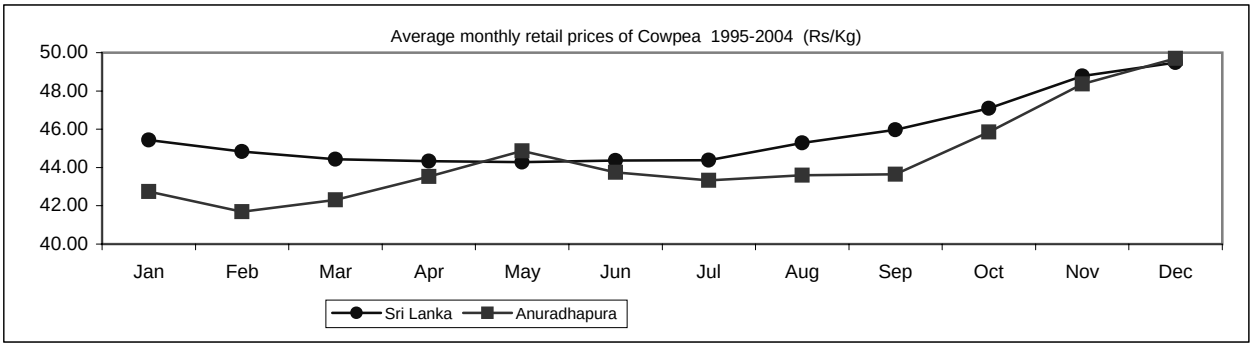


Table 5.1 Extent cultivated & Production of Cowpea in Anuradhapura district as compare to Sri Lanka

Season/Year	Sri Lanka		Anuradhapura	
	Extent Cultivated (hectares)	Production (MT)	Extent Cultivated (hectares)	Production (MT)
2000 Maha	9347	8673	1843	1495
2000 Yala	3600	3448	149	150
Total	12947	12121	1992	1645
2001 Maha	7762	7098	1123	870
2001 Yala	3030	2741	157	159
Total	10792	9839	1280	1029
2002 Maha	8828	7868	879	679
2002 Yala	2948	2568	136	143
Total	11776	10436	1015	822
2003 Maha	10128	9129	1017	880
2003 Yala	3708	3771	151	151
Total	13836	12900	1168	1031
2004 Maha	6592	6105	529	693
2004 Yala	3073	3052	147	197
Total	9665	9157	676	890
Average Maha	8531	7775	1078	923
Yala	3272	3116	148	160
Annual	11803	10891	1226	1083

Sources :Department of Census and Statistics

Table 5.2 Average Monthly Retail price of Cowpea in Sri Lanka 1995-2004 (Unit Price:Rs/Kg)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver
January	30.74	37.87	35.88	36.71	42.86	40.82	54.69	61.49	58.81	54.50	45.44
February	30.42	36.75	35.30	36.07	42.60	39.67	56.61	59.25	57.31	54.38	44.84
March	29.94	37.04	33.68	35.11	42.48	40.18	57.90	55.06	57.46	55.49	44.43
April	30.85	36.96	34.64	34.54	42.24	40.26	56.46	55.51	55.77	56.09	44.33
May	31.08	36.72	34.94	34.65	38.75	41.44	58.31	54.82	55.34	56.84	44.29
June	31.49	36.45	34.94	35.43	39.33	42.03	59.83	55.23	52.45	56.50	44.37
July	32.90	34.40	33.50	37.03	38.78	42.88	59.65	57.38	51.56	55.81	44.39
August	32.22	35.56	34.44	38.31	38.90	45.62	59.98	57.51	52.57	57.77	45.29
September	32.50	35.40	35.67	38.55	38.60	47.04	61.08	55.65	52.78	62.35	45.96
October	34.77	32.52	36.08	39.91	38.84	48.98	61.77	58.00	53.57	66.52	47.10
November	37.10	35.43	37.15	42.74	40.29	50.43	61.51	61.85	53.31	67.93	48.77
December	37.91	36.95	37.85	44.07	41.45	51.50	61.89	60.67	53.25	69.20	49.47
Annu Aver	32.73	36.25	35.34	37.72	40.41	44.16	59.16	57.63	54.36	59.45	45.72

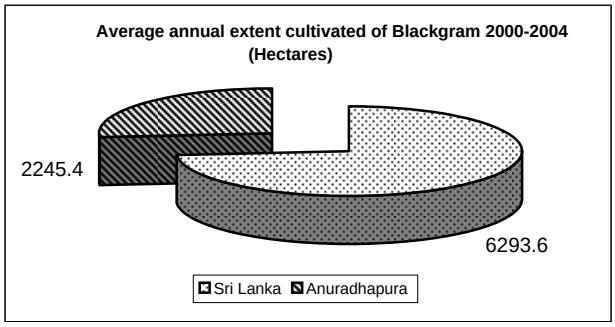
Sources :Department of Census and Statistics

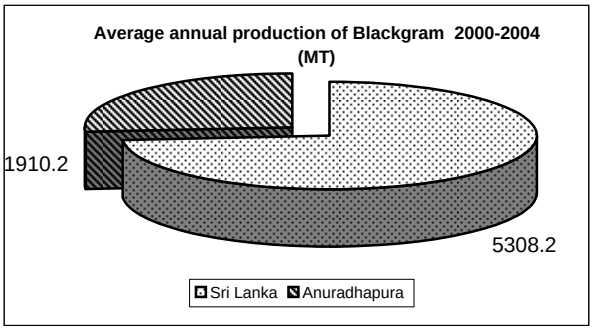
Table 5.3 Average Monthly Retail price of Cowpea in Anuraddhapura district 1995-2004 (Unit Price:Rs/Kg)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver
January	32.00	43.51	38.40	32.00	40.00	35.00	47.50	49.00	55.00	55.00	42.74
February	29.50	32.00	34.56	32.00	40.00	36.67	56.67	50.00	52.50	53.00	41.69
March	28.55	31.88	36.22	32.00	42.00	36.50	56.00	50.00	57.50	52.50	42.32
April	30.24	31.00	36.57	35.00	44.00	36.67	51.75	60.00	55.00	55.00	43.52
May	34.41	31.33	32.92		35.08	41.00	56.50	55.00	57.50	60.00	44.86
June	37.93	32.00	32.50		36.67	40.00	53.33	52.50	51.25	57.50	43.74
July	48.50	30.75	32.50	30.75	35.00	40.00	55.00	55.00	52.50	53.25	43.33
August	46.03	30.00	32.50	33.40	35.00	41.21	55.00	52.50	52.50	57.75	43.59
September	45.65	30.00	32.50	35.83	35.00	40.00	55.00	50.00	52.50	60.00	43.65
October	49.25	29.67	37.50	36.40	34.67	44.50	55.00	51.00	52.50	68.00	45.85
November	48.75	31.80	35.00	37.80	36.50	42.50	58.00	62.50	55.75	75.00	48.36
December	50.00	37.83	40.00	37.00		42.50	55.00	50.00	55.00	80.00	49.70
Annu Aver	40.07	32.65	35.10	34.22	37.45	39.71	54.56	53.13	54.13	60.58	44.16

Sources :Department of Census and Statistics

6. BACKGRAM





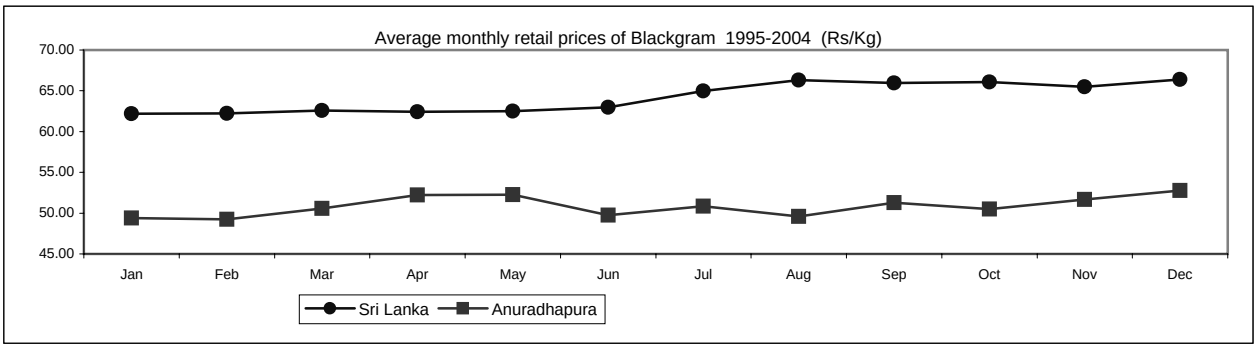


Table 6.1 Extent cultivated & Production of Blackgram in Anuradhapura district as compare to Sri Lanka

Season/Year	Sri Lanka		Anuradhapura	
	Extent Cultivated (hectares)	Production (MT)	Extent Cultivated (hectares)	Production (MT)
2000 Maha	6013	4807	2879	2378
2000 Yala	690	613	183	182
Total	6703	5420	3062	2560
2001 Maha	5642	4476	1819	1461
2001 Yala	719	651	242	243
Total	6361	5127	2061	1704
2002 Maha	5492	4185	2009	1605
2002 Yala	992	909	219	223
Total	6484	5094	2228	1828
2003 Maha	6245	4959	2337	1880
2003 Yala	935	982	167	168
Total	7180	5941	2504	2048
2004 Maha	4303	4448	1208	1214
2004 Yala	437	511	164	197
Total	4740	4959	1372	1411
Average Maha	5539	4575	2050	1708
Yala	755	733	195	203
Annual	6294	5308	2245	1910

Sources :Department of Census and Statistics

Table 6.2 Average Monthly Retail price of Blackgram in Sri Lanka 1995-2004 (Unit Price:Rs/Kg)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver
January	36.01	58.72	63.37	52.63	51.51	57.96	70.66	79.41	78.09	73.36	62.17
February	35.80	61.97	64.89	53.64	51.20	56.52	69.79	76.13	79.38	72.92	62.22
March	40.42	62.68	59.03	56.06	53.82	56.31	71.66	76.86	78.60	70.44	62.59
April	38.44	63.39	57.83	57.32	53.44	58.95	71.51	76.28	77.49	69.72	62.44
May	40.08	64.99	59.58	54.50	52.07	57.94	72.46	76.19	77.63	69.60	62.50
June	44.68	67.25	52.86	54.37	53.57	57.69	73.53	78.27	76.86	70.49	62.96
July	50.41	70.26	55.72	55.11	53.88	64.12	73.76	79.08	76.13	71.27	64.97
August	56.96	70.92	58.91	55.35	54.82	66.78	75.97	78.23	74.04	71.28	66.33
September	59.88	67.97	58.78	51.20	56.66	65.81	75.75	77.67	72.29	73.44	65.95
October	57.74	67.02	60.72	49.74	56.93	66.39	76.10	79.37	71.63	75.06	66.07
November	59.98	65.33	56.57	48.47	57.27	66.80	75.45	78.26	70.65	76.18	65.50
December	60.17	66.24	55.47	51.26	58.04	69.73	77.14	79.46	69.82	76.39	66.37
Annu Aver	48.38	65.56	58.64	53.30	54.43	62.08	73.65	77.93	75.22	72.51	64.17

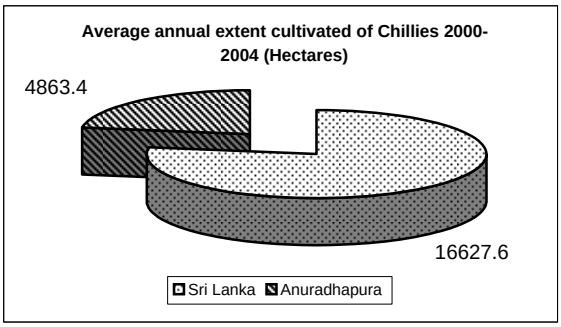
Sources :Department of Census and Statistics

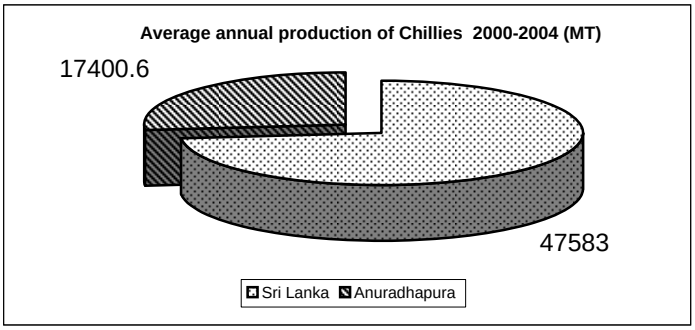
Table 6.3 Average Monthly Retail price of Blackgram in Anuraddhapura district 1995-2004 (Unit Price:Rs/Kg)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver
January	22.67	62.68	55.00			50.00	50.00	51.75		53.75	49.41
February	22.77	62.50	55.00			50.00	50.00	52.00		52.50	49.25
March	26.16		58.00	55.00		50.00	55.00	56.25		53.50	50.56
April	23.46	61.67	58.00	55.00	50.00	52.00	50.00	55.00		65.00	52.24
May	33.55	62.50	65.00	55.00	39.75	49.44	55.00	55.00		55.00	52.25
June	27.00	65.00		51.00	40.00	50.00	55.00	55.00		55.00	49.75
July	27.08	65.00		55.00	50.00	50.00	53.33	55.00		51.25	50.83
August	28.88	58.75		45.50	50.00	50.00	60.00	52.50		51.25	49.61
September	50.55	55.75		35.50	55.00	50.00	49.67	53.75		60.00	51.28
October	55.00	50.33		35.50	50.00	50.00	50.00	53.00		60.00	50.48
November	62.50	46.00		29.50	50.67	50.00	50.00	54.75		70.00	51.68
December	61.67	46.38	52.00	27.33	50.00	50.00	50.00	52.50		85.00	52.76
Annu Aver	36.77	57.87	57.17	44.43	48.38	50.12	52.33	53.88		59.35	50.84

Sources :Department of Census and Statistics

7. CHILLIES





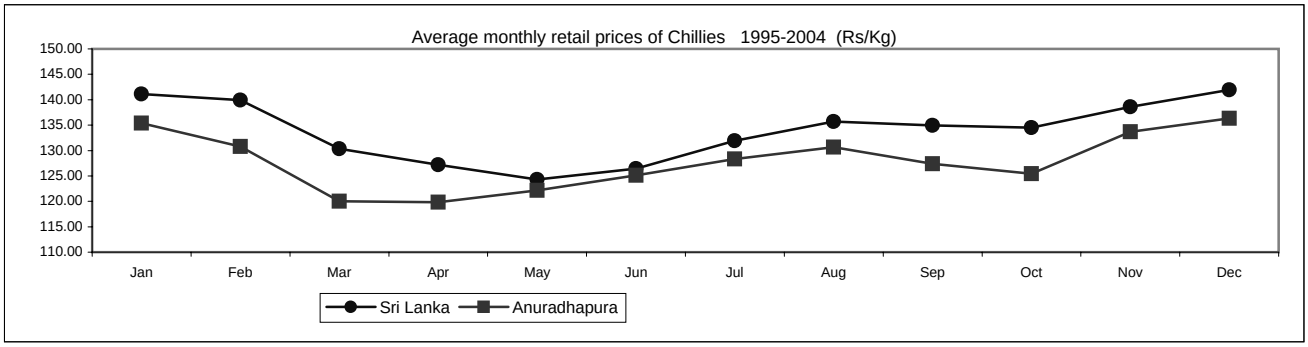


Table 7.1 Extent cultivated & Production of Chillies in Anuradhapura district as compare to Sri Lanka

Season/Year	Sri Lanka		Anuradhapura	
	Extent Cultivated (hectares)	Production (MT)	Extent Cultivated (hectares)	Production (MT)
2000 Maha	13629	39854	5540	18541
2000 Yala	6203	16006	751	2947
Total	19832	55860	6291	21488
2001 Maha	11773	34698	4291	14950
2001 Yala	5580	14344	757	2898
Total	17353	49042	5048	17848
2002 Maha	10978	31969	3842	13339
2002 Yala	5309	14380	708	2717
Total	16287	46349	4550	16056
2003 Maha	11096	33340	4180	15033
2003 Yala	4822	12850	528	2065
Total	15918	46190	4708	17098
2004 Maha	9623	29258	3186	12767
2004 Yala	4125	11216	534	1746
Total	13748	40474	3720	14513
Average Maha	11420	33824	4208	14926
Yala	5208	13759	656	2475
Annual	16628	47583	4863	17401

Sources :Department of Census and Statistics

Table 7.2 Average Monthly Retail price of Chillies in Sri Lanka 1995-2004 (Unit Price:Rs/Kg)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver
Jan	124.62	160.04	132.44	97.43	168.46	127.14	120.90	149.84	155.47	175.01	141.14
Feb	122.70	151.26	124.12	107.16	173.77	123.56	124.09	141.41	157.59	173.45	139.91
Mar	117.16	132.22	112.46	111.55	145.29	116.75	121.79	133.70	158.35	154.33	130.36
Apr	111.94	127.41	105.62	122.79	126.33	116.72	121.10	132.32	159.41	148.58	127.22
May	108.11	128.56	94.05	119.38	124.47	116.69	119.73	132.33	157.20	142.78	124.33
Jun	107.69	138.16	84.28	122.62	118.81	118.49	130.58	139.47	162.26	141.91	126.43
Jul	126.14	143.32	84.28	128.97	127.14	123.84	138.64	139.28	165.04	142.58	131.92
Aug	133.76	148.43	87.34	133.34	126.62	121.91	155.03	140.79	166.18	143.38	135.68
Sep	124.26	141.88	91.63	133.71	124.66	121.05	157.56	141.67	164.04	148.69	134.92
Oct	119.50	133.94	93.43	137.26	124.50	121.15	158.99	147.04	163.36	145.93	134.51
Nov	132.99	134.33	93.99	155.02	125.78	119.49	157.51	152.70	167.01	147.09	138.59
Dec	139.78	136.23	96.79	164.96	129.24	120.51	156.24	154.45	170.24	151.03	141.95
Annu	122.39	139.65	100.04	127.85	134.59	120.61	138.51	142.08	162.18	151.23	133.91

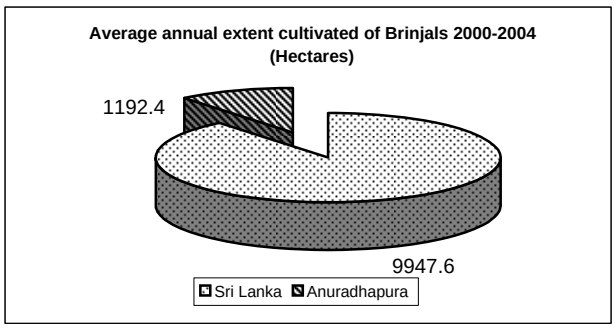
Sources :Department of Census and Statistics

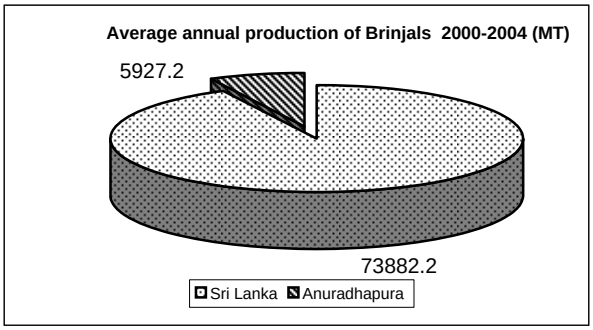
Table7.3 Average Monthly Retail price of Blackgram in Anuraddhapura district 1995-2004 (Unit Price:Rs/Kg)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver
Jan	117.50	153.66	121.00	80.00	166.00	125.83	115.00	145.00	160.00	169.58	135.36
Feb	128.00	133.33	95.20	100.00	160.00	117.50	118.75	125.00	160.00	170.00	130.78
Mar	98.75	96.67	93.33	110.00	140.00	110.00	130.00	110.00	161.25	150.00	120.00
Apr	102.50	106.67	88.33	120.00	130.00	107.50	120.00	113.33	160.00	150.00	119.83
May	104.99	118.33	83.75	125.00	120.83	112.50	116.25	130.00	158.75	151.25	122.17
Jun	103.33	131.67	70.00	122.50	120.00	120.00	130.00	140.00	163.75	150.00	125.13
Jul	109.03	128.50	70.00	120.00	130.00	125.00	140.00	137.50	168.33	155.00	128.34
Aug	133.12	127.42	70.00	122.08	116.00	120.83	160.00	140.00	168.33	148.75	130.65
Sep	100.94	128.33	80.00	120.83	116.00	120.00	160.00	140.00	162.50	145.00	127.36
Oct	102.50	118.75	85.00	120.00	118.33	115.00	155.00	145.00	155.00	140.00	125.46
Nov	122.25	124.50	80.00	140.00	121.67	120.00	155.00	156.66	166.67	150.00	133.68
Dec	128.75	127.50	90.00	151.43	123.75	117.50	150.00	160.00	169.57	145.00	136.35
Annu	112.64	124.61	85.55	119.32	130.22	117.64	137.50	136.87	162.85	152.05	127.92

Sources :Department of Census and Statistics

8. BRINJALS





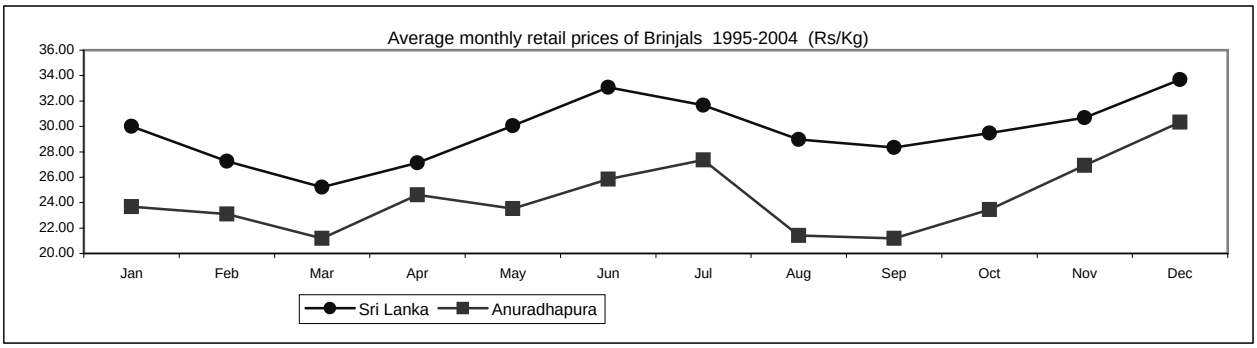


Table 8.1 Extent cultivated & Production of Brinjals in Anuradhapura district as compare to Sri Lanka

Season/Year	Sri Lanka		Anuradhapura	
	Extent Cultivated (hectares)	Production (MT)	Extent Cultivated (hectares)	Production (MT)
2000 Maha	6017	44785	808	2808
2000 Yala	4449	31737	373	2077
Total	10466	76522	1181	4885
2001 Maha	5773	42300	800	2813
2001 Yala	3640	25109	248	1377
Total	9413	67409	1048	4190
2002 Maha	5999	42879	914	3215
2002 Yala	3906	27755	257	1430
Total	9905	70634	1171	4645
2003 Maha	6593	46024	1125	3966
2003 Yala	4036	28445	343	1919
Total	10629	74469	1468	5885
2004 Maha	5600	53447	754	7980
2004 Yala	3725	26930	340	2051
Total	9325	80377	1094	10031
Average Maha	5996	45887	880	4156
Yala	3951	27995	312	1771
Annual	9948	73882	1192	5927

Sources :Department of Census and Statistics

Table 8.2 Average Monthly Retail price of Brinjals in Sri Lanka 1995-2004 (Unit Price:Rs/Kg)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver
January	17.29	17.36	22.59	31.36	26.00	29.93	33.08	32.34	55.02	34.99	30.00
February	16.02	16.65	22.14	30.86	24.14	26.75	33.98	26.70	42.25	33.01	27.25
March	13.56	14.64	23.23	30.36	21.08	24.88	29.86	27.61	37.03	30.00	25.23
April	16.39	17.37	23.38	27.90	25.81	27.77	33.98	30.39	34.91	33.47	27.14
May	20.72	20.75	21.38	27.68	31.74	27.40	37.77	36.19	40.72	36.22	30.06
June	26.49	27.34	23.51	30.85	31.57	32.25	38.48	41.37	41.90	36.96	33.07
July	24.93	27.61	24.25	31.29	27.25	31.60	38.80	40.00	33.86	37.07	31.67
August	22.08	23.33	22.61	25.42	28.24	30.39	35.26	33.78	32.39	36.23	28.97
September	19.12	20.07	23.58	21.82	29.38	28.88	35.21	32.80	35.20	37.41	28.35
October	20.10	19.43	23.90	22.96	32.55	29.10	35.70	35.36	34.88	40.73	29.47
November	23.08	23.15	26.90	22.76	31.44	28.17	34.10	34.10	35.62	47.50	30.68
December	22.12	22.75	30.53	22.10	32.17	31.33	34.86	40.10	43.57	57.27	33.68
Annu Aver	20.16	20.87	24.00	27.11	28.45	29.04	35.09	34.23	38.95	38.41	29.63

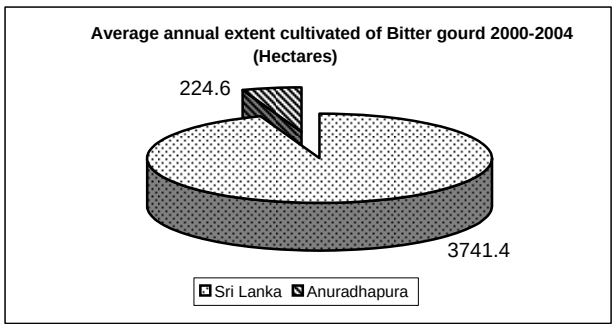
Sources :Department of Census and Statistics

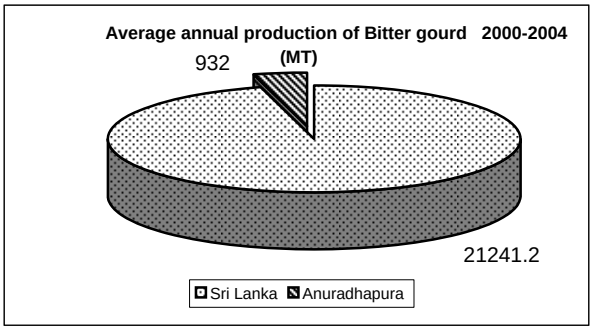
Table 8.3 Average Monthly Retail price of Brinjals in Anuraddhapura district 1995-2004 (Unit Price:Rs/Kg)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver
January	11.00	14.00	20.00	24.00	19.00	22.00	29.50	20.00	54.50	22.75	23.68
February	8.00	13.75	18.50	30.00	22.00	24.00	40.00	17.00	31.00	26.75	23.10
March	11.00	14.00	17.50	28.00	18.00	18.00	36.00	20.00	25.00	24.25	21.18
April	11.00	10.50	18.00	24.00	19.00	28.00	38.00	30.00	37.50	30.00	24.60
May	11.62	16.00	15.00	24.00	20.00	21.00	28.00	25.50	40.00	34.25	23.54
June	15.25	21.00	24.00	32.00	20.00	20.00	25.50	37.00	31.25	32.50	25.85
July	21.00	20.50	22.00	27.00	18.00	30.00	29.50	37.25	30.75	37.50	27.35
August	18.00	13.50	17.00	22.50	22.00	18.50	26.00	22.00	22.50	32.00	21.40
September	16.00	14.75	21.00	20.00	24.00	17.50	22.00	24.00	27.50	25.00	21.18
October	20.00	15.50	20.00	14.00	30.00	19.00	26.50	24.00	27.50	38.00	23.45
November	21.75	23.00	20.00	17.00	26.00	20.00	25.00	26.00	30.50	60.00	26.93
December	19.50	20.50	30.00	32.50	32.00	27.00	30.00	29.25	27.50	55.00	30.33
Annu Aver	15.34	16.42	20.25	24.58	22.50	22.08	29.67	26.00	32.13	34.83	24.38

Sources :Department of Census and Statistics

9. BITTER GOURD





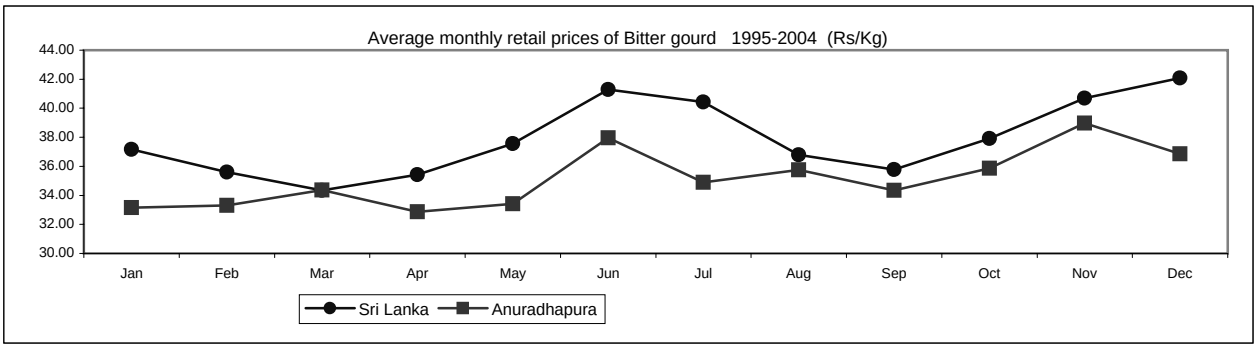


Table 9.1 Extent cultivated & Production of Bitter gourd in Anuradhapura district as compare to Sri Lanka

Season/Year	Sri Lanka		Anuradhapura	
	Extent Cultivated (hectares)	Production (MT)	Extent Cultivated (hectares)	Production (MT)
2000 Maha	1965	11319	100	325
2000 Yala	1814	9477	59	233
Total	3779	20796	159	558
2001 Maha	1927	10647	120	390
2001 Yala	1502	7675	48	190
Total	3429	18322	168	580
2002 Maha	2063	11088	172	562
2002 Yala	1809	9790	65	259
Total	3872	20878	237	821
2003 Maha	2432	12186	217	708
2003 Yala	1528	7933	92	367
Total	3960	20119	309	1075
2004 Maha	2133	18079	161	1270
2004 Yala	1534	8012	89	356
Total	3667	26091	250	1626
Average Maha	2104	12664	154	651
Yala	1637	8577	71	281
Annual	3741	21241	225	932

Sources :Department of Census and Statistics

Table 9.2 Average Monthly Retail price of Bittergourd in Sri Lanka 1995-2004 (Unit Price:Rs/Kg)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver
January	26.74	22.56	29.06	37.93	32.04	36.72	45.35	41.07	55.88	44.25	37.16
February	24.99	22.89	30.80	37.38	31.04	36.61	43.93	36.85	49.10	42.33	35.59
March	23.13	22.43	30.28	36.90	31.26	35.53	40.38	37.59	45.27	40.56	34.33
April	24.71	24.74	28.55	36.14	32.64	38.72	43.00	38.77	45.19	41.88	35.43
May	28.41	28.82	28.63	36.44	35.68	36.99	46.10	44.18	47.00	43.48	37.57
June	32.60	36.10	32.35	39.71	37.30	39.46	45.88	53.26	49.12	47.06	41.28
July	33.11	36.53	34.66	39.00	33.61	37.55	44.63	48.84	50.21	46.21	40.44
August	26.64	27.89	32.23	32.85	32.81	39.55	40.44	46.66	45.60	43.14	36.78
September	23.68	25.62	33.78	30.95	35.30	37.07	41.61	42.08	45.44	42.33	35.79
October	25.61	28.28	34.48	33.46	37.82	40.38	42.05	43.94	46.92	46.16	37.91
November	29.48	32.36	37.32	34.88	39.04	39.33	43.50	49.30	49.74	52.02	40.70
December	26.96	31.24	40.15	31.21	41.14	43.60	43.92	53.17	53.17	56.18	42.07
Annu Aver	27.17	28.29	32.69	35.57	34.97	38.46	43.40	44.64	48.55	45.47	37.92

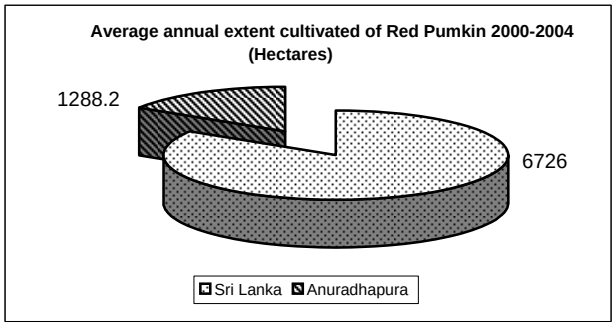
Sources :Department of Census and Statistics

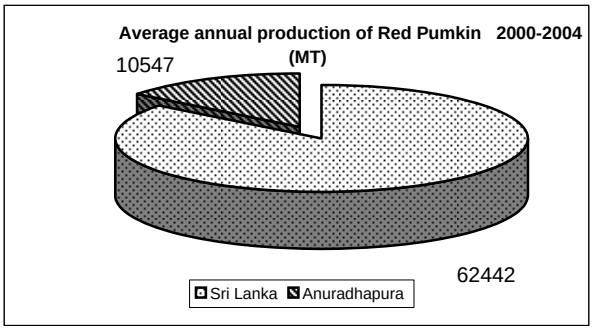
Table 9.3 Average Monthly Retail price of Bittergourd in Anuraddhapura district 1995-2004 (Unit Price:Rs/Kg)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver
January	25.00	20.00	20.50	30.00	19.00	34.00	41.00	39.50	60.00	42.50	33.15
February	23.00	25.50	22.00	36.00	22.00	39.00	41.00	29.50	53.00	42.00	33.30
March	26.75	22.00	22.00	37.00	31.50	36.00	39.00	37.00	52.50	40.00	34.38
April	29.00	16.25	22.00	30.00	20.00	40.00	45.00	39.00	45.00	42.50	32.88
May	29.50	16.50	21.00	30.00	32.50	40.00	48.00	25.50	48.75	42.50	33.43
June	28.50	28.00	30.00	35.00	32.50	36.00	39.50	40.00	65.00	45.00	37.95
July	27.50	28.50	36.00	24.00	22.00	31.00	42.50	40.00	53.75	43.75	34.90
August	25.00	24.50	27.00	28.50	18.00	39.00	39.00	59.00	57.50	40.00	35.75
September	19.12	23.25	30.00	29.00	30.00	39.00	39.00	39.00	55.00	40.00	34.34
October	29.00	17.50	24.00	30.00	36.00	40.00	40.00	41.00	57.50	43.75	35.88
November	32.00	28.00	35.00	33.00	40.00	39.00	38.50	44.25	56.25	43.75	38.98
December	20.25	27.50	31.00	35.00	36.00	41.50	38.00	40.50	48.75	50.00	36.85
Annu Aver	26.22	23.13	26.71	31.46	28.29	37.88	40.88	39.52	54.42	42.98	35.15

Sources :Department of Census and Statistics

10. RED PUMPKIN





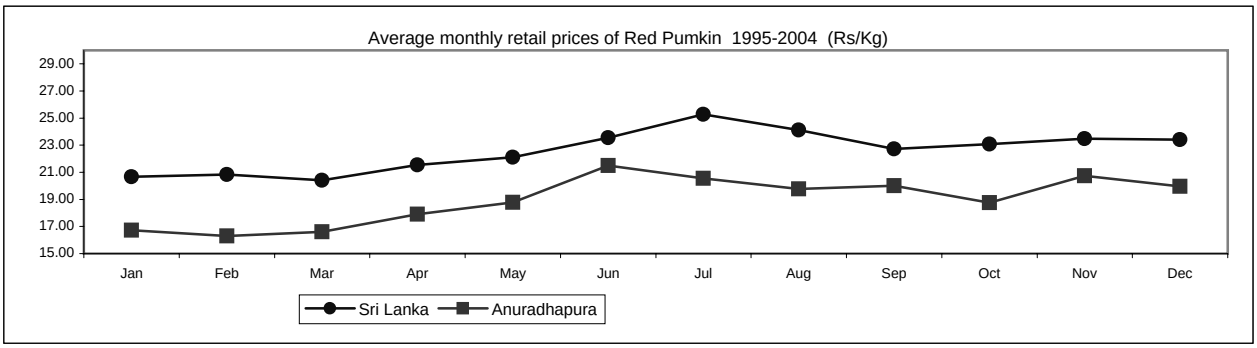


Table 10.1 Extent cultivated & Production of Red Pumkin in Anuradhapura district as compare to Sri Lanka

Season/Year	Sri Lanka		Anuradhapura	
	Extent Cultivated (hectares)	Production (MT)	Extent Cultivated (hectares)	Production (MT)
2000 Maha	4424	40749	746	4431
2000 Yala	2386	21560	152	1316
Total	6810	62309	898	5747
2001 Maha	4205	39063	702	4186
2001 Yala	2222	19466	174	1501
Total	6427	58529	876	5687
2002 Maha	4402	40198	961	5727
2002 Yala	2220	19380	405	3497
Total	6622	59578	1366	9224
2003 Maha	4333	37851	1179	7011
2003 Yala	2895	25979	507	4371
Total	7228	63830	1686	11382
2004 Maha	3742	42715	1106	16114
2004 Yala	2801	25249	509	4581
Total	6543	67964	1615	20695
Average Maha	4221	40115	939	7494
Yala	2505	22327	349	3053
Annual	6726	62442	1288	10547

Sources :Department of Census and Statistics

Table 10.2 Average Monthly Retail price of Red Pumpkin in Sri Lanka 1995-2004 (Unit Price:Rs/Kg)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver
January	14.17	12.17	17.08	18.86	20.95	20.55	25.19	28.06	23.67	25.90	20.66
February	12.33	11.77	17.21	19.88	20.43	18.27	29.12	27.88	26.78	24.78	20.85
March	11.58	11.98	16.64	20.93	19.73	18.70	29.36	27.89	24.12	23.12	20.41
April	12.69	13.85	17.38	21.07	20.93	20.34	31.35	28.02	25.25	24.53	21.54
May	13.85	15.85	17.65	22.39	21.82	20.68	31.45	28.42	24.90	24.17	22.12
June	15.01	20.14	19.41	23.24	20.88	22.30	33.95	30.00	25.02	25.66	23.56
July	16.83	24.69	19.56	24.07	20.35	24.55	38.03	30.32	25.45	28.89	25.27
August	16.97	19.23	20.00	21.67	21.24	25.27	32.76	30.69	24.12	29.19	24.11
September	15.09	15.89	20.08	19.73	21.58	23.00	32.94	27.75	23.77	27.53	22.74
October	15.20	15.87	19.95	20.96	23.57	25.75	31.05	27.03	25.03	26.33	23.07
November	15.07	17.14	20.88	19.90	23.55	24.31	30.52	30.04	26.66	26.81	23.49
December	13.76	16.37	21.06	20.07	23.00	23.83	27.37	29.55	31.03	28.00	23.40
Annu Aver	14.38	16.25	18.91	21.06	21.50	22.30	31.09	28.80	25.48	26.24	22.60

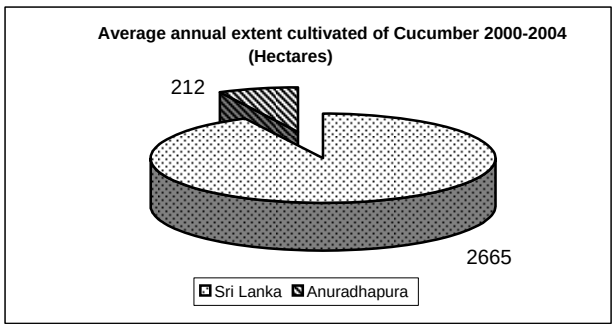
Sources :Department of Census and Statistics

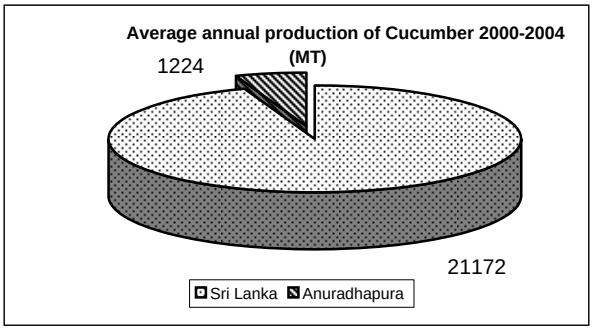
Table 10.3 Average Monthly Retail price of Red Pumpkin in Anuraddhapura district 1995-2004 (Unit Price:Rs/Kg)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver
January	11.75	10.00	18.00	12.00	17.00	16.00	20.00	21.00	20.50	21.00	16.73
February	10.00	9.50	12.00	16.00	20.00	15.00	20.00	21.00	20.50	19.00	16.30
March	9.50	10.00	12.50	16.00	19.00	16.00	22.00	23.00	20.00	18.00	16.60
April	10.00	10.00	12.50	20.00	20.00	16.00	28.00	22.50	20.00	20.00	17.90
May	10.00	10.00	12.00	23.00	20.00		27.50	25.00	20.00	21.50	18.78
June	11.88	12.05	20.00	23.00	18.00	16.50	39.50	30.00	20.50	23.50	21.49
July	16.00	18.50	20.00	15.00	16.50	17.00	29.00	31.00	20.00	22.50	20.55
August	11.50	11.00	15.50	16.25	17.00	26.00	30.00	25.00	23.75	21.75	19.78
September	10.00	12.00	16.00	19.00	24.00	18.50	36.00	21.50	21.00	22.00	20.00
October	11.00	10.50	16.00	14.00	16.00	22.00	30.00	25.00	20.50	22.50	18.75
November	12.00	12.50	15.00	15.00	24.00	20.00	30.00	37.50	19.00	22.50	20.75
December	11.00	14.50	12.00	19.50	24.00	20.50	30.00	28.00	20.00	20.00	19.95
Annu Aver	11.22	11.71	15.13	17.40	19.63	18.50	28.50	25.88	20.48	21.19	18.96

Sources :Department of Census and Statistics

11. CUCUMBER





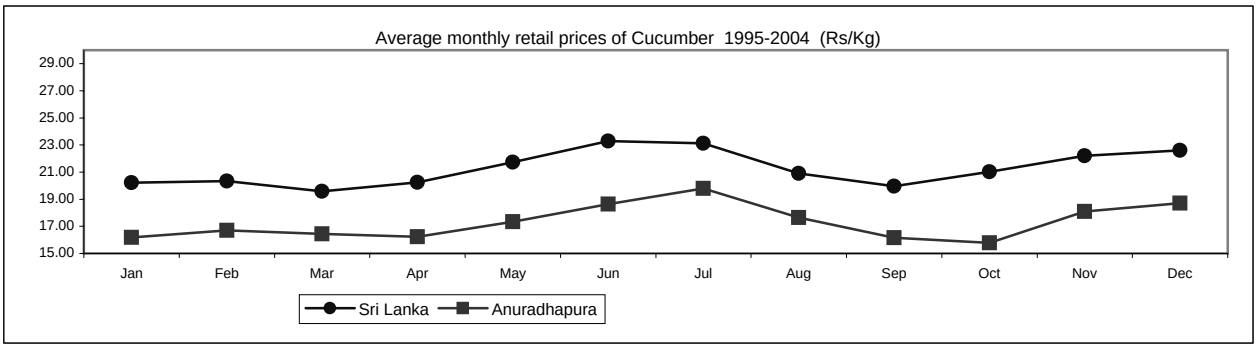


Table 11.1 Extent cultivated & Production of Cucumber in Anuradhapura district as compare to Sri Lanka

Season/Year	Sri Lanka		Anuradhapura	
	Extent Cultivated (hectares)	Production (MT)	Extent Cultivated (hectares)	Production (MT)
2000 Maha	1416	11555	93	364
2000 Yala	1085	8572	58	440
Total	2501	20127	151	804
2001 Maha	1414	11139	99	388
2001 Yala	941	7312	36	273
Total	2355	18451	135	661
2002 Maha	1459	11322	156	612
2002 Yala	1184	9672	74	562
Total	2643	20994	230	1174
2003 Maha	1995	14408	256	1002
2003 Yala	1157	8981	69	514
Total	3152	23389	325	1516
2004 Maha	1540	14036	141	1379
2004 Yala	1134	8865	78	585
Total	2674	22901	219	1964
Average Maha	1565	12492	149	749
Yala	1100	8680	63	475
Annual	2665	21172	212	1224

Sources :Department of Census and Statistics

Table 11.2 Average Monthly Retail price of Cucumber in Sri Lanka 1995-2004 (Unit Price:Rs/Kg)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver
January	12.57	13.57	17.32	20.50	18.40	20.49	25.79	20.36	27.43	25.88	20.23
February	12.43	13.40	18.50	19.67	17.84	18.82	26.29	22.18	28.52	25.81	20.35
March	11.95	12.52	18.97	19.69	16.38	18.28	25.40	21.98	27.09	23.65	19.59
April	12.72	15.24	17.03	18.97	18.95	20.86	26.40	23.22	23.00	25.95	20.23
May	14.41	17.85	18.68	18.97	19.81	21.00	27.28	24.40	25.49	29.35	21.72
June	17.47	19.56	19.44	20.94	20.80	22.04	28.83	29.43	26.30	28.17	23.30
July	15.54	20.90	20.03	20.95	19.61	21.51	28.28	31.13	26.03	27.28	23.13
August	14.82	15.44	18.38	16.75	19.98	24.32	26.40	25.25	23.51	24.12	20.90
September	12.06	13.47	19.44	15.12	18.18	24.76	25.83	22.35	25.08	23.22	19.95
October	12.72	14.47	18.89	18.97	19.90	26.88	25.60	24.11	23.23	25.39	21.02
November	13.68	17.78	21.68	17.44	20.74	26.10	24.93	25.54	25.09	29.13	22.21
December	13.03	16.83	23.43	17.06	20.10	27.05	23.51	26.19	27.25	31.50	22.60
Annu Aver	13.62	15.92	19.32	18.75	19.22	22.68	26.21	24.68	25.67	26.62	21.27

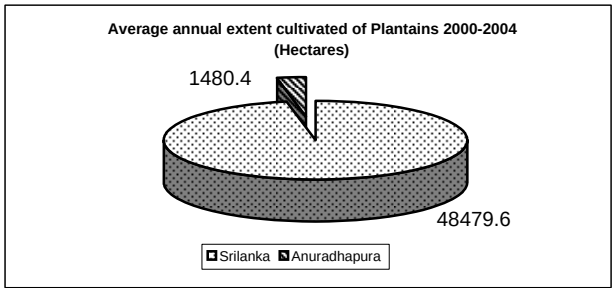
Sources :Department of Census and Statistics

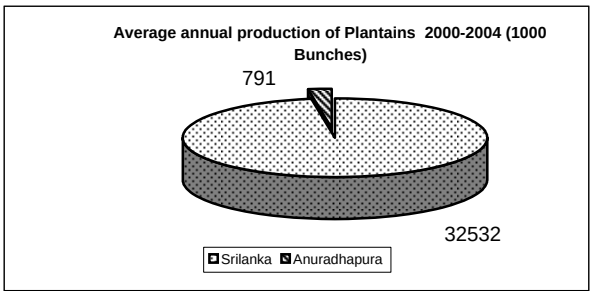
Table 11.3 Average Monthly Retail price of Cucumber in Anuraddhapura district 1995-2004 (Unit Price:Rs/Kg)

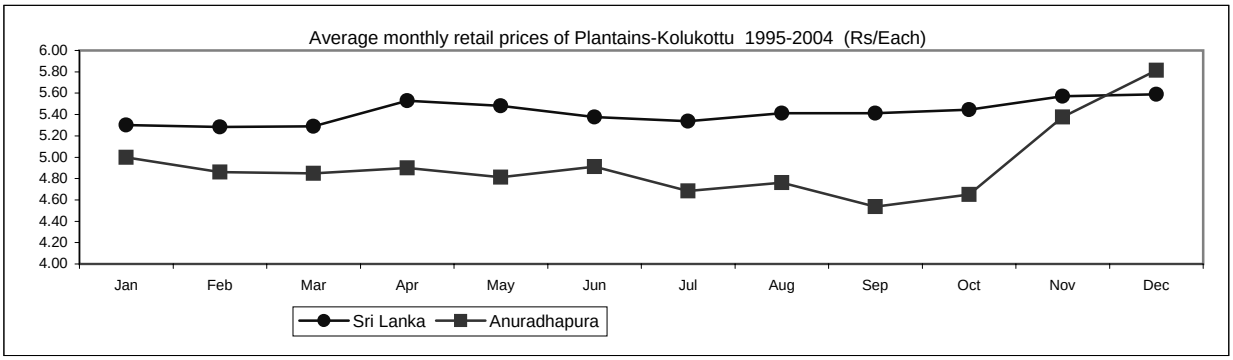
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver
January	8.50	13.00	10.50	16.00	12.50	20.00	30.00	10.00	23.75	17.50	16.18
February	10.50	10.00	13.00	20.00	15.00	16.00	30.00	15.00	20.00	17.50	16.70
March	9.00	10.00	16.00	20.00	11.00	18.00	28.50	15.50	20.00	16.50	16.45
April	9.50	11.00	16.00	14.00	10.00	20.00	30.00	13.00	18.75	20.00	16.23
May	8.00	10.00	14.00	24.25	15.00	20.00	23.00	20.50	18.75	20.00	17.35
June	12.88	13.00	16.50	22.00	17.00	20.00	26.00	19.00	18.25	21.75	18.64
July	13.50	14.50	16.50	18.00	20.00	19.00	28.00	28.50	17.50	22.50	19.80
August	10.00	10.50	16.50	14.00	22.00	16.25	26.00	21.00	19.00	21.25	17.65
September	10.00	10.00	18.00	10.00	12.00	20.50	26.00	17.50	17.50	20.00	16.15
October	11.00	10.00	20.00	10.00	14.00	22.00	20.00	11.00	17.75	22.00	15.78
November	11.00	11.00	20.00	12.50	16.00	28.00	22.00	18.00	17.75	24.75	18.10
December	10.50	12.00	20.00	20.00	12.00	28.50	24.00	21.00	19.00	20.00	18.70
Annu Aver	10.37	11.25	16.42	16.73	14.71	20.69	26.13	17.50	19.00	20.31	17.31

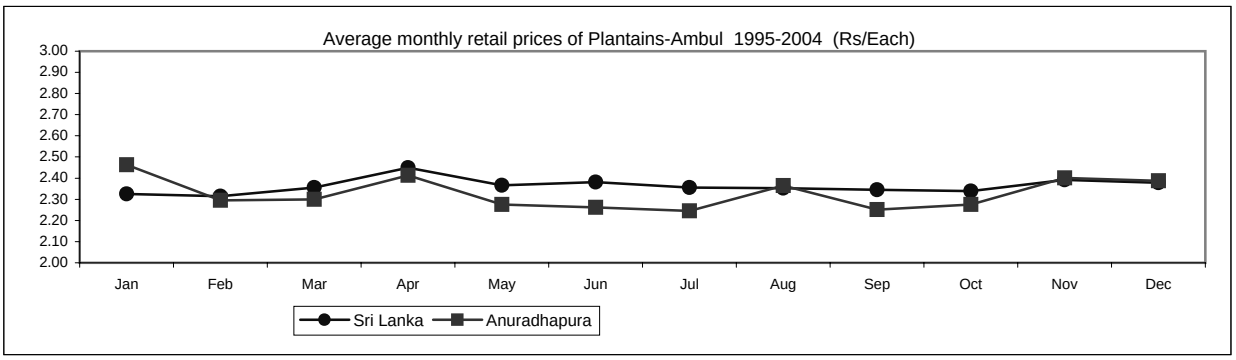
Sources :Department of Census and Statistics

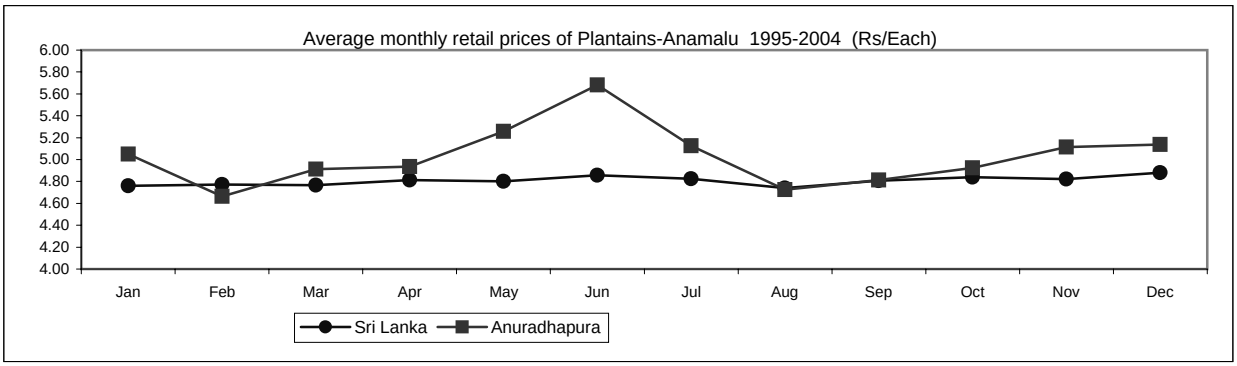
12. PLANTAINS











12. PLANTAINS

Table 12.1 Extent cultivated & Production of Plantain in Anuradhapura district as compare to Sri Lanka

Year	Sri Lanka		Anuradhapura	
	Extent Cultivated (hectares)	Production (1000 Bu)	Extent Cultivated (hectares)	Production (1000 Bu)
2000	48686	33617	1118	619
2001	45809	30575	1177	688
2002	47850	31719	1657	847
2003	49677	32997	1729	894
2004	50376	33750	1721	905
Average	48480	32532	1480	791

Sources :Department of Census and Statistics

Table 12.2 Average Monthly Retail price of Plantain - Kolukuttu in Sri Lanka 1995-2004 (Unit Price:Rs/Each)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver
January	3.90	4.22	4.77	5.01	5.06	4.82	5.77	5.88	6.53	7.06	5.30
February	3.67	4.35	5.02	5.13	5.03	4.91	5.40	5.97	6.42	6.93	5.28
March	3.66	4.28	4.98	5.10	4.92	4.80	5.85	5.98	6.67	6.66	5.29
April	4.07	4.61	5.18	5.40	5.32	5.21	5.90	6.36	6.51	6.73	5.53
May	4.04	4.47	5.21	5.39	5.10	4.97	6.10	6.25	6.69	6.60	5.48
June	4.09	4.35	5.00	5.39	4.78	4.96	6.01	6.27	6.50	6.42	5.38
July	4.14	4.36	4.70	5.25	4.76	4.88	5.99	6.31	6.29	6.70	5.34
August	4.03	4.35	4.75	5.26	4.65	5.60	5.97	6.31	6.34	6.85	5.41
September	3.89	4.49	4.75	5.06	4.80	5.58	5.94	6.29	6.38	6.95	5.41
October	4.06	4.53	4.67	5.18	4.52	5.55	6.07	6.49	6.51	6.86	5.44
November	4.05	4.74	4.71	5.08	4.74	5.73	6.28	6.79	6.46	7.13	5.57
December	4.09	4.80	4.74	5.13	4.62	5.52	6.16	6.83	6.73	7.26	5.59
Annu Aver	3.97	4.46	4.87	5.20	4.86	5.21	5.95	6.31	6.50	6.85	5.42

Sources :Department of Census and Statistics

Table 12.3 Average Monthly Retail price of Plantain - Kolukuttu in Anuradhapurs district 1995-2004 (Unit Price:Rs/Each)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver
January	4.25	5.00	4.75	4.00	5.00	4.00	4.60	3.88	6.50	8.00	5.00
February	2.75	5.00	5.50	4.00	5.00	4.50	3.50	4.87	6.50	7.00	4.86
March	3.50	5.00	3.25	4.25	5.00	3.50	5.50	5.00	6.50	7.00	4.85
April	4.25	3.75	3.50	4.00	5.25	3.50	5.50	5.00	7.25	7.00	4.90
May	4.37	3.75	3.50	4.00	5.00	3.50	5.50	4.50	7.00	7.00	4.81
June	4.37	4.25	3.50	4.00	5.00	3.50	4.37	6.00	7.00	7.13	4.91
July	4.25	3.75	3.50	4.50	4.00	3.50	4.35	6.00	6.00	7.00	4.69
August	4.25	3.75	3.75	3.75	3.50	4.75	4.12	5.50	7.75	6.50	4.76
September	3.88	3.75	4.00	3.12	3.25	4.75	3.75	4.38	7.50	7.00	4.54
October	3.75	4.25	4.00	3.25	3.75	4.50	4.25	5.00	7.50	6.25	4.65
November	4.00	5.00	3.00	3.50	4.00	4.50	7.75	5.50	8.50	8.00	5.38
December	4.00	5.25	4.00	6.50	3.00	4.63	7.75	6.50	8.00	8.50	5.81
Annu Aver	3.97	4.38	3.85	4.07	4.31	4.09	5.08	5.18	7.17	7.20	4.93

Sources :Department of Census and Statistics

Table 12.4 Average Monthly Retail price of Plantain - Ambul in Sri Lanka 1995-2004 (Unit Price:Rs/Each)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver
Jan	1.87	1.90	2.17	2.39	2.37	2.49	2.67	2.48	2.59		2.33
Feb	1.79	2.01	2.21	2.47	2.29	2.50	2.54	2.45	2.57		2.31
Mar	1.83	1.97	2.31	2.45	2.29	2.32	2.82	2.47	2.74		2.36
Apr	1.98	2.13	2.43	2.56	2.33	2.50	2.89	2.65	2.57		2.45
May	1.80	2.03	2.34	2.58	2.32	2.07	3.01	2.65	2.49		2.37
Jun	1.87	2.08	2.35	2.65	2.02	2.53	2.90	2.61	2.42		2.38
Jul	1.90	2.12	2.29	2.49	1.92	2.62	2.91	2.59	2.36		2.36
Aug	1.87	2.07	2.33	2.54	1.86	2.51	3.00	2.70	2.29		2.35
Sep	1.79	2.10	2.37	2.37	1.90	2.59	2.94	2.71	2.34		2.35
Oct	1.77	2.06	2.36	2.37	1.82	2.64	2.94	2.65	2.44		2.34
Nov	1.96	2.20	2.27	2.46	1.96	2.65	2.78	2.81	2.43		2.39
Dec	1.89	2.28	2.32	2.37	1.96	2.58	2.81	2.77	2.43		2.38
An Av	1.86	2.08	2.31	2.48	2.09	2.50	2.85	2.63	2.47		2.36

Sources :Department of Census and Statistics

Table 12.5 Average Monthly Retail price of Plantain - Ambul in Anuradhapurs district 1995-2004 (Unit Price:Rs/Each)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver
Jan	1.75	1.75	2.25	2.00	3.00	2.75	3.00	2.75	2.50	2.88	2.46
Feb	1.38	1.75	2.00	2.25	1.75	2.75	2.50	2.87	2.75	2.95	2.30
Mar	1.39	1.50	1.75	2.50	2.80	2.30	3.00	2.75	2.50	2.50	2.30
Apr	1.75	1.50	2.00	2.50	2.88	2.50	3.00	2.75	2.75	2.50	2.41
May	1.50	1.75	2.00	2.50	3.00	2.25	3.00	2.00	2.75	2.00	2.28
Jun	1.37	1.75	1.75	2.50	3.00	2.50	3.00	2.50	2.25	2.00	2.26
Jul	1.37	1.75	2.00	2.75	2.25	2.25	3.00	2.50	2.50	2.08	2.25
Aug	1.75	1.65	2.00	2.75	2.50	2.50	3.00	2.50	2.75	2.25	2.37
Sep	1.75	1.75	2.00	2.00	2.25	2.50	3.00	2.63	2.38	2.25	2.25
Oct	1.75	1.75	2.00	2.13	2.00	2.50	3.00	2.75	2.38	2.50	2.28
Nov	1.63	1.75	2.00	2.25	2.25	2.50	3.00	2.88	2.75	3.00	2.40
Dec	1.75	2.25	2.00	2.62	2.00	2.50	3.00	2.50	2.50	2.75	2.39
An Av	1.60	1.74	1.98	2.40	2.47	2.48	2.96	2.62	2.56	2.47	2.33

Sources :Department of Census and Statistics

Table 12.6 Average Monthly Retail price of Plantain - Anamalu in Sri Lanka 1995-2004 (Unit Price:Rs/Each)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver
Jan	3.36	3.64	4.17	4.42	4.33	5.24	5.48	5.73	6.47		4.76
Feb	3.25	3.68	4.26	4.52	4.38	5.33	5.34	5.88	6.32		4.77
Mar	3.23	3.82	4.37	4.45	4.45	5.04	5.59	5.86	6.08		4.77
Apr	3.47	3.77	4.36	4.48	4.44	5.12	5.55	5.98	6.14		4.81
May	3.60	3.79	4.47	4.52	4.06	4.67	5.68	6.23	6.18		4.80
Jun	3.51	3.74	4.50	4.55	4.22	4.68	5.81	6.36	6.33		4.86
Jul	3.52	3.88	4.27	4.33	4.18	4.70	5.73	6.42	6.39		4.82
Aug	3.46	3.73	4.13	4.38	4.00	4.92	5.68	6.31	6.06		4.74
Sep	3.55	3.81	4.38	4.28	4.08	5.18	5.60	6.28	6.10		4.81
Oct	3.60	3.87	4.34	4.24	4.14	5.22	5.66	6.32	6.15		4.84
Nov	3.69	3.93	4.25	4.09	3.98	5.27	5.59	6.43	6.16		4.82
Dec	3.74	4.08	4.25	4.26	4.16	5.26	5.66	6.34	6.18		4.88
An Av	3.50	3.81	4.31	4.38	4.20	5.05	5.61	6.18	6.21		4.81

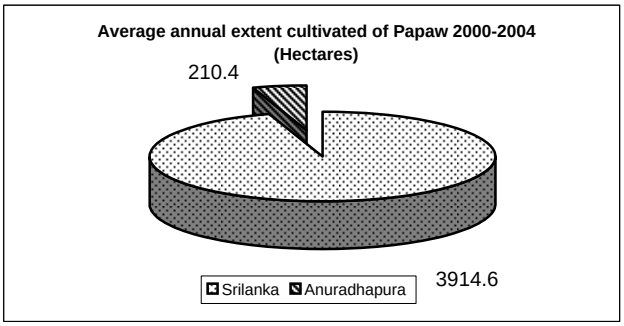
Sources :Department of Census and Statistics

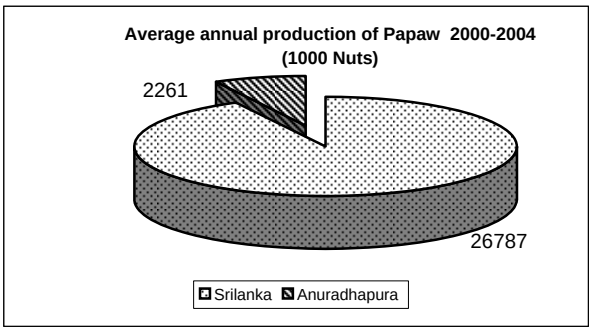
Table 12.7 Average Monthly Retail price of Plantain - Anamalu in Anuradhapurs district 1995-2004 (Unit Price:Rs/Each)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver
Jan	2.50	3.00	4.25	4.50	4.75	5.50	5.25	6.00	7.00	7.75	5.05
Feb	2.00	3.00	4.75	4.50	4.75	4.00	5.50	6.00	5.50	6.63	4.66
Mar	2.18	3.00	4.50	4.50	4.80	4.50	6.50	6.00	6.50	6.63	4.91
Apr	3.37	3.00	4.50	4.50	5.00	4.00	5.50	6.00	7.00	6.50	4.94
May	3.06	2.75	4.50	4.50	5.00	4.00	7.75	8.00	6.50	6.50	5.26
Jun	3.31	3.25	4.50	4.50	5.00	4.00	8.00	8.00	7.75	8.50	5.68
Jul	3.50	3.50	4.00	4.00	4.50	4.50	7.25	6.00	8.00	6.00	5.13
Aug	3.25	3.00	4.00	2.75	4.00	4.38	6.00	6.50	7.63	5.75	4.73
Sep	3.00	3.00	4.25	2.50	4.00	4.63	6.00	6.25	8.00	6.50	4.81
Oct	3.75	3.50	4.25	2.50	4.50	5.25	6.00	6.50	8.00	5.00	4.93
Nov	3.13	4.25	3.50	3.00	4.00	5.50	7.75	6.00	8.00	6.00	5.11
Dec	3.25	4.25	3.50	3.50	4.00	5.38	7.75	6.00	7.75	6.00	5.14
An Av	3.03	3.29	4.21	3.77	4.53	4.64	6.60	6.44	7.30	6.48	5.03

Sources :Department of Census and Statistics

13. PAPAW





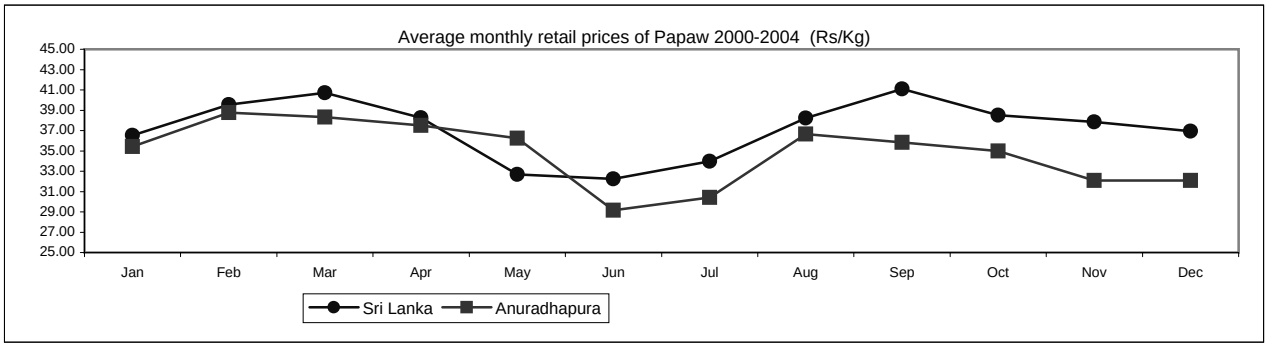


Table 13.1 Extent cultivated & Production of Papaw in Anuradhapura district as compare to Sri Lanka

Season/Year	Sri Lanka		Anuradhapura	
	Extent Cultivated (hectares)	Production (1000 Nuts)	Extent Cultivated (hectares)	Production (1000 Nuts)
2000	3250	24317	162	1884
2001	3093	22632	130	1477
2002	3564	26310	212	2258
2003	4653	29641	278	2877
2004	5013	31036	270	2811
Average	3915	26787	210	2261

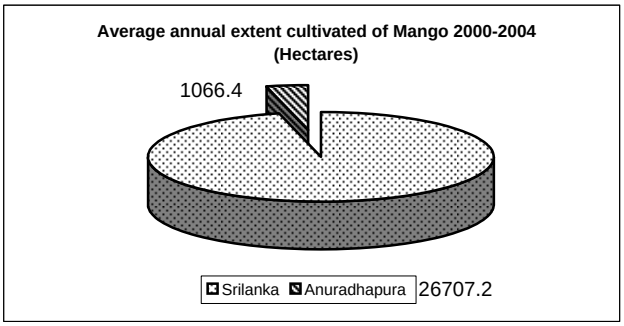
Sources :Department of Census and Statistics

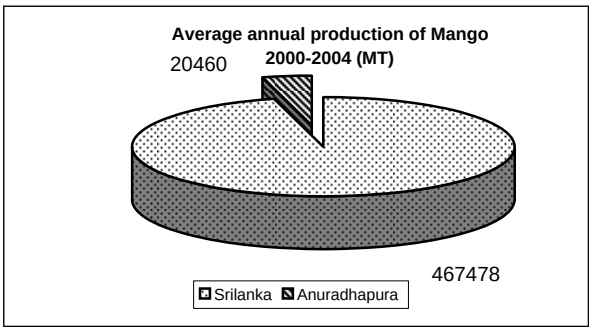
Table 13.2 Average Monthly Retail price of Papaw (Unit Price:Rs/Kg)

Month	Sri Lanka						Anuradhapura					
	2000	2001	2002	2003	2004	Aver	2000	2001	2002	2003	2004	Aver
January			34.60	38.43		36.52			33.75	40.00	32.50	35.42
February			35.81	43.32		39.57			43.75	40.00	32.50	38.75
March			38.37	43.07		40.72			42.50	37.50	35.00	38.33
April			37.91	38.59		38.25			37.50	37.50	37.50	37.50
May			32.00	33.34		32.67			37.50	35.00	36.25	36.25
June			29.92	34.59		32.26			20.00	35.00	32.50	29.17
July			31.78	36.17		33.98			28.75	30.00	32.50	30.42
August			36.88	39.57		38.23			40.00	35.00	35.00	36.67
September			43.87	38.32		41.10			42.50	30.00	35.00	35.83
October			40.55	36.48		38.52			40.00	35.00	30.00	35.00
November			38.74	36.95		37.85			35.00	36.25	25.00	32.08
December			38.86	35.02		36.94			38.75	32.50	25.00	32.08
Annu Aver			36.61	37.82		37.22			36.67	35.31	32.40	34.79

Sources :Department of Census and Statistics

14. MANGO





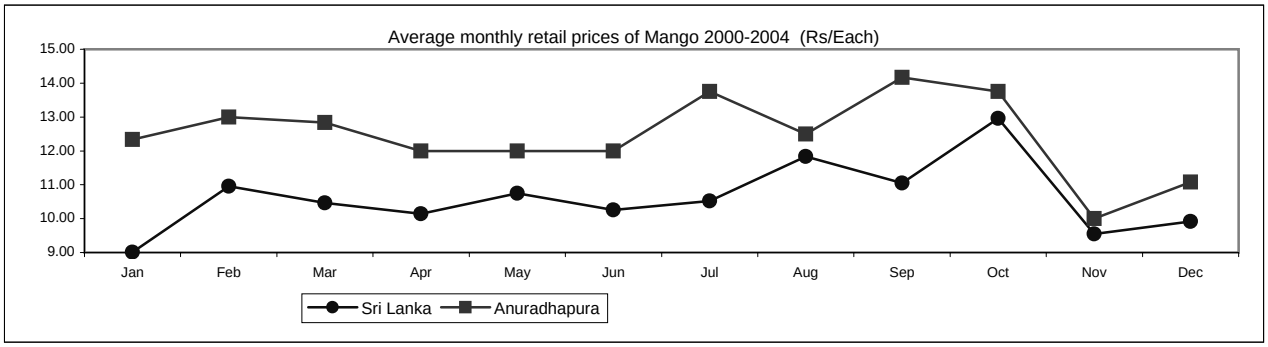


Table 14.1 Extent cultivated & Production of Mango in Anuradhapura district as compare to Sri Lanka

Season/Year	Sri Lanka		Anuradhapura	
	Extent Cultivated (hectares)	Production (1000 Nuts)	Extent Cultivated (hectares)	Production (1000 Nuts)
2000	25780	431047	846	18075
2001	25728	458987	920	18461
2002	27071	487228	1120	19058
2003	28627	500577	1223	23348
2004	26330	459552	1223	23359
Average	26707	467478	1066	20460

Sources :Department of Census and Statistics

Table 14.2 Average Monthly Retail price of Mango (Unit Price:Rs/Each)

Month	Sri Lanka						Anuradhapura					
	2000	2001	2002	2003	2004	Aver	2000	2001	2002	2003	2004	Aver
January			8.45	9.57		9.01			10.00	12.00	15.00	12.33
February			10.94	10.98		10.96			11.00	-	15.00	13.00
March			10.00	10.92		10.46			11.00	10.00	17.50	12.83
April			9.34	10.94		10.14			11.00	10.00	15.00	12.00
May			10.59	10.90		10.75			11.00	10.00	15.00	12.00
June			9.45	11.06		10.26			11.00	10.00	15.00	12.00
July			9.81	11.24		10.53			15.00	10.00	16.25	13.75
August			11.85	11.81		11.83			12.50	10.00	15.00	12.50
September			10.74	11.36		11.05			12.50	15.00	15.00	14.17
October			10.63	15.28		12.96			12.50	13.75	15.00	13.75
November			8.67	10.42		9.55			10.00	10.00	10.00	10.00
December			8.85	10.99		9.92			8.25	15.00	10.00	11.08
Annu Aver			9.95	11.30		10.63			11.31	11.43	14.48	12.41

Sources :Department of Census and Statistics