HECTOR KOBBEKADUWA

AGRARIAN RESEARCH AND TRAINING INSTITUTE

ANNUAL REPORT

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Hector Kobbekaduwa
Agrarian Research and Training Institute
114, Wijerama Mawatha,
Colombo 7

ESTABLISHMENT

The Hector Kobbekaduwa Agrarian Research and Training Institute (HARTI) was established in 1972 under the Agrarian Research and Training Institute Act No. 05 of 1972. It functions as a statutory body under the Ministry of Agricultural Development and Agrarian Services. It was established mainly for the promotion of policy- oriented research and training needs of the agrarian and rural sector. Being a pioneer of agrarian research in the country, HARTI has wealth of experience spanning over thirty five years, in conducting socio-economic research and training and also providing information for the formulation of agrarian sector development policies since its establishment in 1972.

Mandate

Under the provisions of section 3 (1) of the above Act, the general mandated objectives of the institute are as follows.

i. To foster, assist, encourage and co-operate in agrarian research.
ii. To co-ordinate agrarian research undertaken by government departments, local authorities, public corporations and other institutions.
iii. To carry out investigations and research relating to institutional factors affecting the development of agriculture.
iv. To undertake investigations, research and studies relating to economic use of land for agricultural purposes.
v. To carry out socio-economic research relating to agricultural and rural development.
vi. To provide or undertake implement training activities and programmes relating to agrarian research either alone or in association with other institutions in Sri Lanka or abroad and to award diplomas, degrees, prizes and distinctions in connection therewith.
vii. To sponsor and hold conferences, seminars, and workshops at local, regional and international levels.
viii. To carry out such research relating to problems of agrarian structure in co-operation with Asian countries in order to serve their regional needs and provide a centre for the collection and dissemination of information on agrarian problems.
ix. To relate such research to problems connected with agrarian development and modernization with special reference to Sri Lanka and other Asian countries in general.

Vision

Be the leader for generating and disseminating knowledge for sustainable agrarian and rural development.

Mission

To strengthen agrarian and rural sector through conducting research and training activities.

Goals

i. To be a centre of excellence in socio-economic research into agrarian questions.
ii. To liaise closely with planners and policy makers in the government, business and research communities.
iii. To make policy formulation and implementation process more effective through knowledge generation and timely dissemination.

iv. To keep the public informed by providing independent assessments on national policy issues.
v. To strengthen the capacity for socio-economic policy analysis by investing in the capacities of its staff and the institute's knowledge base.
vi. To increase the capacity of rural development stakeholders through training.

BOARD OF GOVERNORS

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Mr. A.M. Gunawardena Banda	Secretary	Registrar/HARTI

Overview

During the year under review, out of 19 research projects 14 were completed: one was abandoned at the stage of preparation of the proposal and four studies were not completed due to other urgent commitments. Of the completed studies three dealt with issues related to *Api Wawamu-Rata Nagamu* National Food Production Programme; abandoned paddy lands, popularization of organic fertilizer and use of plastic crates. Study on abandoned paddy lands conducted in the Wet Zone found that the water related problems such as inability to obtain water due to dilapidated channels and drainage difficulties have been a major problem which contributed to abandoning the paddy lands and the study recommended to pay attention to rehabilitate anicuts and channels in the Wet Zone. With regard to organic fertilizer, it was found that over 90 percent of the trained farmers produce organize fertilizer but most of the farmers are uncertain about the usage of correct amount of organic fertilizer recommended for different crops. The study recommended that demonstration plots be formed at the Agrarian Development Center level and incentives be given to fertilizer producers. Study on use of plastic crates found that only 45 percent of crates purchased by farmers were used for fruit and vegetable transportation mainly due to reluctance of transporters. Traders reported that the farmers are not willing to exchange the crates with traders. Traders widely used plastic crates for transportation of fruit and vegetables as found in the study that 73 percent of the purchased crates were used for that purpose. It is recommended that the integrated supply system should be established through organizing farmers and developing backward and forward linkages to promote use of plastic crates.

An evaluation study was undertaken to assess the present status of implementation and achievements of *Kiri Weeduruwa programme* (Glass of Milk programme) implemented under the *Mahanda Chinthana* programme. It was found that 92 percent are within the specified age limits, 20 percent receive milk conveniently, 57 percent consume milk before 10.00 am and 30 percent receive 200 ml of milk on a daily basis. The study recommends the need for institutionalization of this programme so as to ensure convenience to all stakeholders. In order to ascertain the paddy farmers' wellbeing, a study was undertaken to work out the terms of trade that is the ratio of farmers' receipts and payments. It was found that the farmers' wellbeing has deteriorated overtime but it has mitigated to some extent with the fertilizer subsidy and rapid increase of guaranteed price of paddy.

In addition to research, over 190 participants were trained by conducting 10 training programmes during the year under review. Of these, the training programme on poverty alleviation aiming at sharing knowledge and experience gained through implementing poverty focused rural development projects were financed by the Commonwealth Secretariat. There was a high demand from extension staff for marketing extension training programmes focused on enhancing knowledge in decision making on production and marketing planning. Although two programmes were planned, 5 programmes were conducted by adopting a cost sharing approach.

Provision of market information to the stakeholders which has been the regular activity since the late 1970s continues by publishing weekly/monthly bulletins regularly, sending dally prices to the

media and updating daily prices on the Institute website. In addition, commodity prices were regularly sent to the Food Procurement and Monitoring Unit, which comes under the Presidential Secretariat. Also, special market reports on request were submitted: Requirements of tomato for local processing industries and hotels to the Presidential Secretariat and Status reports on gingerly, black gram, maize and ginger to the Ministry of Agricultural Development and Agrarian Services.

A special committee comprising representatives from Ministry of Agriculture and Agrarian Services, Ministry of Trade and Co-operatives, Department of Metrology, Department of Agriculture, Department of Irrigation, Mahaweli Authorityof Sri Lanka and Irrigation Management Department was appointed to monitor climate change on *maha* paddy cultivation. The committee met regularly and necessary recommendations were given to mitigate the adverse impact on climate change.

To mark the "National Food Week" in June 22-28 of 2009 the Institute organized a media conference to highlight the achievements and failures of the farm economy after independence and released a special issue of the Govi Janatha magazine.

A special attention was paid to reduce the internet cost of the Institute. It was able to reduce the cost considerably while improving benefits such as unlimited web space by replacing SLT connection to with *i*power.

The high turn over of the senior researchers is a major problem faced by the Institute. In the year under review, 5 senior researchers left the Institute. Applications were called to recruit researchers but none was qualified to senior grades. Five researchers were recruited to the lowest grade. At the end of the year, the total research staff was 31 out of 46 of the carder.

The activities carried out by the Institute during the year of 2009 are summarized in the ensuring pages.

Prof. Ranjith Premalal De Silva
DIRECTOR

AGRICULTURAL POLICY AND PROJECT EVALUATION DIVISION

COMPLETED STUDIES

1. **Terms of Trade in Paddy Sector in Sri Lanka**

Research Team : Ms. M.W.A.C.S. Wijethunga - Researcher

Source of Funding: Consolidated Funds

This study examined paddy farmers well being by using terms of trade which is a ratio of prices received for farm products and prices paid for farm inputs and consumer goods. Secondary data on prices of paddy, inputs and selected consumer goods in four major paddy producing districts of Anuradhapura, Polonnaruwa, Kurunegala and Hambantota, covering the period of 1990-2008, was utilized for the exercise.

The specific objectives

i. Examining the trends in price of paddy, prices of inputs and the retail prices of selected consumer goods.
ii. Ascertaining the behavioral pattern of price indices of paddy in comparison with the price indices of inputs and other consumer goods.
iii. Studying the implications of these changes of price movements on the paddy farm sector economy.

Findings:

i. The rate of paddy price increase was very slow during the period of 1990-2005. However, towards the end of 2007, prices of paddy have risen at a faster rate with the global food crisis. Producer price index has increased by four folds compared to the base year (1990).
ii. Although both producer price and the input prices have increased during the period, farm gate prices are not commensurate with the rate of input prices increases (Input price index increased twice than producer price index increase). Therefore, it caused to decline the terms of trade in the paddy sector. In 2008, this was positively changed because farmers received higher prices for their paddy.
iii. Contribution of labour cost to the total cost was 50% but it has decreased to 36% in Hambantota due to high level of mechanization. Among inputs, wage rate index registered highest increase (seven-folds) followed by machinery and agro chemicals indices (six folds) compared to 1990.
iv. Terms of trade in 2008 reached 0.79 in the *Maha* season (69% increase compared to 2007) and 0.72 in the *Yala* season (37% increase compared to 2007) which were the highest recorded terms of trade values after 1992 and 1993 respectively. Terms of trade value still never exceed the base year (in 1990) value of 1 or at least did not reached that value so far.
v. Terms of trade with compared to the consumer goods namely, bread, milk powder and industrial good namely kerosene oil also has deteriorated during the studied period which showing the decline of purchasing power and the living standards of the paddy farmers, who mainly depends on income from paddy farming.

Recommendations

i. Labour saving mechanisms should be introduced in paddy cultivation as a solution to the labour shortage problem and accompanying high vage rates.
ii. Government needs to take actions to encourage local paddy farmers by providing easy and less interest marketing credit facilities to stock paddy until they will be able to sell those at a higher prices.
iii. Improve the quality of paddy is also a required thing for the farmers to have a higher price.

2. Decrease of Cultivated Paddy Lands in the Wet Zone of Sri Lanka

Research Team: Mr. S. Epasinghe - Co-ordinator
Mr. N.S.B.Epakanda - Co-researcher
Ms. H.M.S.J.M. Hitihamu - Co-researcher

Source of Funding: Consolidated Funds

Overall the country achieved a good performance of paddy cultivation in the country, but it is not the situation in the Wet Zone where the extent of cultivation has annually declined. The main attention of the study was to examine the reasons for decreasing the cultivated area of paddy land in the Wet Zone of Sri Lanka during the last couple of years with the purpose of giving policy recommendations to prevent that decline. The study was based on a questionnaire survey of the farmers who are the owners of temporarily uncultivated or abandoned paddy lands.

Specific Objectives

i. To assess the change in the extent of cultivated paddy land in the Wet Zone over time.
ii. To identify reasons contributed to the decline in the extent of paddy lands cultivated in the wet zone
iii. To propose appropriate policy measures that encourages the effective use of abandoned paddy land.

Findings:

i. Study reveals that the cultivated paddy land area in Wet Zone has declined by 31.5 percent between 1995 and 2007. Decrease in the extent of paddy land in the Wet Zone is two types; abandoning of paddy lands and temporary stoppage of them. The extent under these incidents has become varied from time to time; In 1998 an extent of 12,074 Hec. has been abandoned while in 2008 an extent of 37,128 Hec. has been abandoned.

ii. As can be categorized under few themes, the reasons for decrease in paddy lands are (1). Water related problems (2). Weather related constraints (3). High cost of production and low profit (4). Loss of control of cultivating paddy lands by the farmer (5). Loss of control over access to paddy lands and other reasons.

iii. As evident from the survey, the decrease of paddy land is not a simple occurrence attributable to a single reason. It is the outcome of a multitude of reasons. According to 72 per cent farmers they have lands uncultivated due to more than four reasons aforesaid.

iv. The most prevalent is the water related problems as stated by 73 per cent of the selected sample of farmers. Out of the total sample of farmers selected, non availability of water was said to have affected 67 per cent and drainage problems affected 57 per cent of farmers.

v. The second prominent problem seems to be weather related problems such as droughts, land slides and sedimentation in reservoirs reducing their water storage capacities as stated by 68 per cent of the sample of farmers selected for the survey. High cost of production has been yet another reason for the decrease of paddy lands cultivated. Fifty three per cent of farmers interviewed said to have experienced difficulties in cultivating their own plots in the 'yaya' due to non cultivation of neighboring plots. Urbanization has prevented access to paddy lands of 29 per cent of farmers. Among other reasons which prevented cultivation of paddy lands are crop losses due to animals, fear of becoming the victims of rat fever, unfavorable soil characteristics, scarcity of labour and seed paddy, legal and land ownership issues and employment of land owner.

vi. Both the extent of decrease of paddy lands and the degree of applicability of above reasons for the same vary spatially. This establishes that to increase the extent of cultivated paddy land area in the wet zone require location specific strategies to be formulated and keep implementation under close scrutiny.

Recommendations

i. The study recommends: delegation of powers to Agrarian Development Center to analyze the operational problems at the 'yaya' level and prepare development plans for each Agriculture Research and Production Assistant (ARPA) Division; promotion of the active involvement of ARPA in the above process with necessary guidance and directions of Divisional Officer and the Agricultural Instructor.

ii. Provide due financial and other supports by the line departments of each partner involved in the above planning process and implementation of the development plans under close supervision and monitoring by the line department.

iii. As the problems related to irrigation and drainage channels are found to be a major constraints in many Wet Zone districts it is recommended that sufficient funds are allocated to maintain minor irrigation channel net work with special focus on institutional arrangements for drainage channel management.

3. Agricultural and Agrarian Transformation in Sri Lanka

Research Team : Dr. Dhanawardena Gamage - Co-ordinator
Ms. M. K Nadeeka Damayanthi - Co-researcher

Source of Funding: Consolidated Funds

Objectives:

The study has three major objectives as follows.

i. To profile major social and economic dimensions of emerging conditions in smallholder farming sector in Sri Lanka and factors associated with those. In this regard, following factors were examined.
   a) Social conditions in the sector
   b) Land tenure situation
   c) Employment and profitability of selected non-paddy crops in relation to paddy
   d) Influence of physical infrastructure like irrigation water in crop productivity and farm household income
   e) Assessment of extent to which active farming households depend on various forms of transfers
   f) Emerging issues in the sector like ageing of farm population
ii. To analyse the implication of emerging situation for the development of Small Farm Sector.
iii. To update the priority of issues to be addressed in future for development of stallholder farming sector.

Findings

i. Literacy rate among agrarian population have been increasing over time. The number of years of schooling by farm households has been increasing though some difference of level of education could be identified in terms of gender, location, access to irrigation etc.
ii. The study revealed a significant tendency towards mechanization of crop production system, crop diversification (from paddy to non paddy cash crops) and adoption of new production technologies.
iii. Labour used in paddy production varied by irrigation regime. The highest labour requirement (42 person days) for paddy farming reported in rain-fed areas and the lowest (22 person days) reported in major irrigation areas.
iv. Average yield of paddy differed by district, type of irrigation and somewhat by season. The average yield variation was more than 600 kg per acre between major and rain fed areas.
v. Share of the cost of production (including family labour) was 53.2 percent and 19.3 percent by labour and machines respectively.
vi. Overall, 81 percent of the total sample household income came from agriculture while the remainder came from non-farm pursuits.

Recommendations

i. Crop diversification is a required activity for enhancing the incomes of farm families. Especially rain-fed paddy farmers should be promoted for diversifying with OFC by providing certain facilities like agro wells, water pumps and extension.
ii. The upland farmers cultivating OFC under rain-fed condition also can be assisted in the same way.
iii. As Sri Lankan population consist of many elderly people, the existing farmer pension scheme should be strengthened.

4. Re-Study of Pul Eliya

Research Team: Professor A.J. Weeramunda - Consultant
Ms. M.K. Nadeeka Damayanthi - Co-Researcher
Ms. Indika Pathirana - Co-ordinator

Source of Funding: Consolidated Funds and SAREC Funds

The study was essentially an examination of the processes involving the transition of agriculture from a subsistence mode to one characterized by some degree of commercialization, or in other words, a change in the status of the villager from peasant to that of a farmer. It adopted a holistic case study approach to the examination of agrarian change by focusing not only on the economic or technological but also the social and cultural dimensions of the change process. The study was conducted in Pul Eliya, a dry zone, tank-based agricultural community situated in Sri Lanka's North Central Province. The village was selected for two reasons. Firstly, it had been subjected to extensive social and economic changes resulting from the large scale adoption of commercial highland agriculture particularly during the last decade. Secondly, an earlier account of the village written by the anthropologist, late Professor Edmund Leach, provided an exhaustive and excellent account of social and economic conditions that prevailed half a century ago and thereby served as a convenient and reliable baseline for evaluating the agrarian transformation that had taken place since then.

Specific Objectives

i. To identify the ways in which social change occurs especially in a context where rural society has been impacted upon by large-scale change in the socioeconomic order
ii. To determine to what extent changes in the agrarian order have led to a fundamental re-structuring of norms and values defining kinship and land tenure and to indicate what new systems of rural rules and norms governing land tenure and kinship have emerged in the new social order
iii. To identify how changes in social infrastructure induced through state initiated developments such as opening up of roads, introduction of mass communications, improved transport systems, and most importantly the setting up of market centers changed the economic and social standing of villagers and
iv. To describe the role of "internal" drivers such as demographic change through increase of population acted as push factors.

Findings

i. The main incentives for adoption of commercial agriculture consisted of both push and pull factors. The former included dwindling supplies of water due to inadequate rainfall during the last two decades that led to low productivity in rice agriculture and increasing population that resulted in fragmentation of holdings. The pull factors included higher incomes for households by highland cultivation and improved standard of living represented by modern housing, amenities, and household assets. Thus, the drivers of agrarian change in Pul Eliya were similar to those found in other rural communities.

ii. At the same time, a sort of feedback or cyclical rather than a unilineal process of development is evidenced, namely, that people not only earned extra money from commercial enterprises but also reinvested some of the earnings to purchase new agricultural technology in the form of agro wells, tractors, and water pumps that accelerated the change process further. However, the adoption of commercialized highland cultivation has certainly not resulted in diminishing the value and importance of rice farming which is the sole means of subsistence particularly for the less privileged sections of the community.

iii. Without a doubt, the sum total of agrarian changes have led to a process of disintegration of the traditional social and economic order including the demise of the compact village settlement and its replacement by ribbon type housing developments as found in semi urban areas. Similarly, the traditional unit of social organization known as the *variga* that had limited marriage to a number of identified rural communities in earlier times has broken down and has been replaced by extensions of the marriage network to include urban areas and even a few people of other ethnic groups.

iv. However, some aspects of the kinship and land tenure system have been resistant to change and these include the physical layout of the *purana* paddy field and kinship affiliations based on membership in distinct residential groupings that Leach referred to as compound groups although the material base of such groupings has disintegrated. This finding is important from a theoretical standpoint since Professor Leach had advanced the view that the physical foundation of the community was the only lasting entity while he saw kinship as merely a way of talking about arrangements on the ground in relation to land and water.

v. This study has also shown that although the material order has gone through radical changes, what has persisted instead is the normative order particularly in the realms of ideas about belonging to a single community of people. One such norm that Pul Eliya people have adhered to is that land should not be alienated in any way to people who do not belong to the community. It is also replicated in the ritual realm through annual ceremonies centering around the core symbol of rice that bind Pul Eliya people together despite social divisions accentuated by changes in the agrarian order.

vi. Finally, the study has identified several areas in which state interventions are deemed necessary. The need to address key agrarian issues such as the possible loss of soil fertility and increased salinity level due to over-irrigation, dangers to health and environment due to unregulated use of agro chemicals, and potential depletion of groundwater resources has been highlighted. A strategic planning process at the regional level needs to be undertaken

in order to better control the supply of agricultural produce to local markets so as to avoid the problem of gluts and drastically low prices at the marketplace. Finally, since paddy cultivation represents the ultimate fallback position for the average farming household, the need for introducing new agricultural practices that would reduce dependency on water and increase soil fertility is also given emphasis in the study.

Recommendations

i. It is necessary to address key agrarian issues such as the possible loss of soil fertility and increased salinity level due to over-irrigation, dangers to health and environment due to unregulated use of agro chemicals, and potential depletion of ground-water resources.

ii. A strategic planning process at the regional level needs to be undertaken in order to better control the supply of agricultural produce to local markets so as to avoid the problem of fluts and drastically low prices at the marketplace.

iii. Since paddy cultivation represents the ultimate fallback position for the average farming household, it need for introducing new agricultural practices that would reduce dependency on water and increase soil fertility.

5. Problems and Constraints in Organic Fertilizer Utilization

Research Team: Ms. H.M.S.J.M. Hitihamu - Coordinator
Mr. S. Epasinghe. - Co-researcher

Source of Funding: Consolidated Funds

The Ministry of Agriculture Development and Agrarian Services has attempted to promote utilization of organic fertilizer under *Api Wawamu-Rata Nagamu* Food production Programme. As one step of this selected farmers have been trained on production and utilization of organic fertilizer. This study was conducted to examine the performance of this organic fertilizer promotion programme with special emphasis of examining the problems and constraints in utilization of them.

Specific Objectives

i. Finding out the knowledge of the farmers gained through the training programmes on organic fertilizer and their attitudes towards the utilization of organic fertilizer.

ii. Investigating the level of organic fertilizer utilization.

iii. Identifying the methods used in producing organic fertilizer.

iv. Identifying the problems and constraints in utilization of organic fertilizer and providing necessary recommendations to improve the utilization of organic fertilizer.

Findings

i. The result of the study shows that 94.2 per cent of the trained farmers produce organic fertilizer. They use different methods to produce compost fertilizer such as wala , goda , live fence, wormicompost and wormiwash. The most popular method for producing compost fertilizer is the newly introduced goda method.
ii. The study shows that only 3 percent of the sample farmers used organic fertilizer alone for their cultivations. The rest 97 percent of farmers used both organic and inorganic fertilizer.
iii. The farmers who received training from Agrarian Service Centers felt that it was very useful for them, but preparation of compost was somewhat difficult due to difficulties in finding animal manure from their localities.
iv. Further, most of the farmers did not know about the proper amount of organic fertilizer recommended for different crops.
v. The quality of the organic fertilizer depends on the raw material used for the production. Therefore, the correct amount of utilization is also problematic.
vi. The study found that the number of demonstration plots available in the local level is not adequate to promote organic fertilizer.

Recommendations

i. The study recommends that farmers should be guided on the use of correct dosages of organic fertilizer for different crops.
ii. Increase the number of demonstration plots available at the Agrarian Development Center to training for farmers in the prior use of organic fertilizer.
iii. Give preference to the farmers who produce organic fertilizer when the government's inorganic fertilizer subsidy is given.
iv. Take action to reduce utilization of inorganic fertilizer.
v. Conduct awareness programmes through media, and provide incentives for successful organic fertilizer farmers.

6. Spatial and Temporal Variation of Women in Agriculture

Research Team: Ms. Sharmini.K.Kumara - Coordinator
Ms. P. Renuka Weerakkody - Co-researcher

Source of Funding: Consolidated Funds

Over the last few decades the economy has been in transition, structurally. This is clearly evident in the agriculture sector towards the Gross domestic product. Women in Asian societies, it is seen, have become one of the key vulnerable groups of this transition (FAO, 1988).Traditionally women's lifestyles were fashioned, based on the triple roles in the productive and reproductive spheres and community spheres within rural societies. The question which arises is what influence has this transition had on women and their triple role in the rural sector who comprise 40.5 per cent of the population in Sri Lanka (Central Bank of Sri Lanka, 2008). There exists an information gap owing to the lack of in-depth studies to understand the impact of the said transition on the life of women especially in agrarian communities. It is with this information that appropriate policy and program formulation for equitable development for women in the rural sector could be

devised. Therefore this study was an attempt to generate detailed information on the impact of the said transition on the lifestyles of women in agrarian communities.

Objectives:

This study explored the temporal variations of the role of women in agrarian communities in the dry zone by differentiating the changes in their triple role and identifying the challenges and opportunities they faced and finally made appropriate recommendations to mainstream women further into rural development.

Findings:

i. There are variations in the quality of life of women in the diverse agrarian communities which is attributed to the pace of transformation which has taken place in the communities.

ii. Changes in triple role of women from a productive role during the initial generations after independence to a shift towards community role in the present day can be attributed to several factors and are observable in a number of areas; labour contribution to agriculture, tasks performed, more time for domestic work, better bargaining power in the process of decision making and management, exposure to advancement in information technology and increased participation in community work.

iii. The impacts of development interventions on women are not entirely insignificant but there is a necessity to restructure the development processes taking into account the triple roles played by today's women in their communities.

iv. The change approaches need to seek equality and empowerment of both men and women where women's place in society can be strengthened through their increased integration and recognition as partners in development.

Recommendations

It needs to promote livelihood opportunities for the diverse categories of women through;

i. Increasing access to inputs and improving infrastructure facilities for agricultural activities where necessary and feasible, addressing needs and filling the gaps of off-farm income generating activities, promoting of cottage industries that compatible with gender relations and protecting them as a means of sustainable rural development.
ii. Placing more emphasis on pro-livelihood development approaches at household level.
iii. Due coordination and extending support to economic empowerment projects
iv. Programmes for poor women through community based organizations.

7. Present Condition of SRI Farming in Sri Lanka

Research Team: Ms. H.M.S.J.M. Hitihamu - Co-ordinator
Ms. M.D. Susila Lurdu - Co-researcher

Source of Funding: Consolidated Funds

Objective

The major objective of this study was to study the present condition of SRI farming in Sri Lanka.

Specific Objectives

i. To study the Socio-Economic condition of the SRI farmers in Sri Lanka.
ii. To investigate farming practices adapted by SRI farmers.
iii. To workout cost of production of SRI farming.
iv. To investigate the problems ad constraints in expansion of SRI method in the country.
v. To provide necessary policy guidelines towards promoting SRI farming in Sri Lanka.

The study was conducted in three districts where the method of SRI farming activities is prominent. Ninety SRI farmers and 60 Non-SRI Farmers were selected from four Agrarian Service Center areas in the relevant districts.

Findings

i. Most of the SRI farmers appeared to have involved in other activities (non-farm 71 per cent and off-farm 26 per cent) for their income earning, in addition to their involvement in SRI farming. Those SRI farmers stated that this mode of farming requires a great deal of time which heavily impinges on time requirements of their other economic activities.
ii. As revealed in survey data most of the SRI farmers depended on the inputs provided by the NGOs. When the NGOs terminated their activities except for some innovative farmers (13 per cent), the others have abandoned the practice of the SRI method of cultivation. For a example in Badagiriya in Hambanthota district, a NGO called Mercy Corp helped 150 farmers by providing inputs to practice SRI farming. After the withdrawals of inputs support of the NGO only 50 recalcitrant farmers continued this mode of farming.
iii. The government intervention to promote SRI method was minimal. Hence, the farmers' attitude towards this method was negative, but in the areas where NGO officers worked together with the government officials there were better responses than in other areas.

Recommendations

As Sri method of cultivation is important from the view point of environmental sustainability that method should be encouraged through possible ways like encouraging the production of seed paddy which will gain two benefits namely providing opportunity to produce quality seeds and providing an assured better market's for the farm produce.

The introducing and popularizing of labour saving techniques for weeding and transplanting is a solution to reduce much requirement of labour.

8. **The Assessment of the Programme to Provide a Glass of Milk to the Mal-nourished Children in the Age Category of above 24 months to below 60 months in Low Income Families.**

Research Team: Prof. Ranjith Premalal de Silva - Consultant
Ms. P. R. Weerakkody - Co-ordinator

Source of Funding: Ministry of Child Development and Women Empowerment

Objective:

To carry out a rapid assessment of the 'Kiri Weeduruwa' programme and make appropriate recommendations that help future implementation procedure a success.

Findings:

i. The programme is implementing in 48 per cent of the Grama Niladahri divisions in the study locations with which 45 per cent of the total number of mal-nourished children in the study locations are receiving the benefits.

ii. In terms of age criterion which is 24 to 60 months of age, eligible beneficiaries amount to 92 per cent and the rest 8 per cent is not eligible.

iii. Distribution of milk to the beneficiaries takes several forms; collecting fresh or boiled milk from the distribution centre, supply of fresh or boiled milk to the residence of the beneficiaries or to a close by place, drinking boiled milk by the beneficiaries at the distribution centre and provision of pasteurized milk. It is expected that milk should be supplied to the residence of the beneficiaries or to a close by place convenient to them, but only 20 per cent of the beneficiaries enjoy this benefit.

iv. Of the sample 57 per cent beneficiaries drink milk at least before 10.00 a.m. though 81per cent of the beneficiaries receive milk before 10.00 a.m. It is expected that each beneficiary should be provided 200ml of milk day at least for 25 days per month. However, only 30 per cent of the beneficiaries enjoy this benefit, thus the milk distribution procedure is encountered with many inconsistencies.

v. Dairy farmers supplying milk to this programme are of two types. The majority (72 per cent) is involved both in the production and distribution. The rest only supplies milk to a distributor who is identified by the village level officers and distributes milk to the beneficiaries. Around 61 per cent of the milk suppliers are small scale dairy farmers who supply less than 5 liters of milk/day. Also 34 per cent of the dairy farmers have only one milking cow at the time of survey and 10 per cent farmers out of them have only one cow in their herds. This raises the doubts whether these suppliers could assure a stable supply of milk through out the year.

vi. The supply of milk to the milk glass programme ranges from 0.2 per cent to 11 per cent out of the total production within the Divisional Secretariats studied. No evidence was found to show that efforts have been made to uplift the status of the dairy farmers in the study locations.

vii. Though there is no scientific evidence to prove the nutritional aspects of the milk glass programme, the officers and the parents believe that the beneficiaries have gained their weight after receiving the benefits.

viii. The main problems highlighted by the dairy farmers are, delay in reimbursement of cash, difficulties in distribution of milk, lack of incentives to encourage them, low milk prices and problems relating to several administrative decisions. An incentive programme, avoid delays in cash reimbursement, higher price for milk and introducing improved means of distributing milk are among their suggestions.

ix. Those who involved only in the supply of milk highlights the difficulties encountered in the distribution of milk and lack of supervision. As stakeholders between officers, milk suppliers and beneficiaries they have a variety of suggestions to make the programme a success. Provision of incentives to dairy farmers, higher price for milk, awareness programmes for beneficiaries; avoidance of delays in cash reimbursement, administrative involvements where necessary and supervision are among them.

x. While practicing the milk glass programme, village level officers also experience many difficulties. Finding suitable dairy farmers and/or distributors who could supply sufficient milk of high quality, problems of selecting beneficiaries, limitations of supervision, less/lack of awareness and interest among different stakeholders and poor prices for milk are the problems posed by the officers. They suggest that decisions should be taken with regard to some of the problems that require higher level intervention. A variety of alternatives have been proposed to avoid the milk distribution difficulties. A mechanism for supervision, awareness programmes for all stakeholders, higher prices for milk are other suggestions to improve the programme.

xi. The beneficiaries have faced difficulties in joining the programme due to receiving low quality of milk.

Recommendations

i. Record keeping and continued supervision of the programme is an essential activity. This will help to measure the outcome of the milk glass programme.

ii. Implement the programme through pre schools on a pilot basis.

iii. A programme to encourage diary farmers who assist the programme.

iv. Increasing the price of milk.

v. Actions to make aware of all stake holders.

9. Pro-poor Policy Formulation Dialogue in Sri Lanka

Research Team	**:**	Mr.J.K.M.D.Chandrasiri	-	Co-ordinator
		Mr. M.M.M.Aheeyar	-	Co-researcher
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Source of Funding: FAO

In case of Sri Lanka many development policies so far followed seem to have not well addressed the rural agrarian sector where majority of the people in the country is depending on for their livelihood. So the poverty in that sector is very high. In keeping with addressing of this issue Hector Kobbekaduwa Agrarian Research and Training Institute (HARTI) with the technical and financial support from the FAO initiated this study on analyzing available government policies from the view point of their pro-poorness with special focus of empowering of poor farmers. Under the study the analysis was done on policies coming under the purview of three major sub topic areas namely marketing and support services, irrigation and water management and institutional development for empowerment and livelihood promotion covering smallholder farming sector, livestock sector and fisheries sector.

Objectives

i. Review the available policies in the referenced areas.
ii. Assess the policy impact on poor-farmers and identify any gaps of those in relation with empowering poor-farmers.
iii. Document the results of policy analysis and mobilize and sensitize the policy makers to formulate new policies or amend the existing policies based on recommendations of this policy analysis to assure more pro-poorness of the policies.

Findings

i. Pro-poor agricultural development in Sri Lanka started with the Land Development ordinance of 1935 which led to the establishment of a series of farmer settlement schemes with free distributed land, water and some other facilities for the landless poor can be considered undoubtedly a pro-poor policy. But disproportionate share of resource allocation to the development of irrigation areas be a major gap in the current supply augmentation policy.

ii. The current policy on irrigation system management (that originated after amendment of the above land policy in 1999) has several pro-poor features. Under the policy, obtaining of beneficiaries participation into operation and management of the irrigation systems provides a voice for the farmers. In spite of that the

performance of the irrigation system maintenance activities under farmer managed system are not at satisfactory level due to non availability of established maintenance standards to ensure sustainable O & M and the guidelines that are necessary to mobilize resources in an equitable manner, lack of water management experience of the farmers and the political and other divisions in the communities.

iii. One gap in irrigation system management policies is that it has not paid due attention to the potential role of policies to effectively respond to existing and shadily growing of irrigation water. The existing cropping intensity of around 120 per cent definitely has much room for improvement and this could be made possible through more efficient water management together with improvements in cropping systems.

iv. The lack of a suitable mechanism to address the problems of bulk water allocation is a gap that needs to be addressed before the situation becomes critical.

v. Although the measures taken to stop the groundwater depletion are indeed a pro-poor development strategy there is no proper setup with introduced procedures to implement it; eg. non gazetting the rules and regulations.

vi. The concept of Rice Production yaya programme is a pro-poor policy because the poor farmers who are unable to individually access the necessary technical information and other services are benefited from this integrated service provision. But the department does not have enough resources to replicate this over a larger number of locations.

vii. The pro-poor character of Sri Lanka agricultural policy has been seriously impaired by the breakdown of the widespread extension system followed by devolution of power in 1987.

viii. Though the credit policy has operationalised in the way enabling the poor farmers to satisfy their credit requirements via Farmer Bank established in every Agrarian Development Center, some practical problems like heavy demand for agricultural credit exceeding the volume of funds available at each farmer bank has let only limited farmers to benefit from it.

ix. In livestock sector as a pro-poor policy although diary farmers have been encouraged to setup their own organizational networks via cooperative societies to empower them the involvement of these cooperative societies in processing and marketing are not sufficient to give benefits to the sector effectively.

x. With regard to the fisheries sector, the outcome of the policy of ongoing fisheries committee has not been fully satisfactory and many of the fisheries cooperatives are

inactive as well, resulting difficulties for the poor fishermen to benefit from the facilities.

Recommendations

i. The institutional setup linking research with extension has to be changed to facilitate faster dissemination and uptake of new technologies. An effective linkage between the research function under the central government and the extension function under the provincial administration is essential,

ii. Establishment of IT-based rural extension networks linking the farmers and extension staff to the latest technological and market information should be taken up.

iii. Effective co-ordination between organic practices, on-farm water management and extension services should be ensured to produce more crops per drop of water.

iv. To tackle the problem that small farmers faces with un-remunerative prices when they produce a surplus, there should be identified and appropriate marketing strategies for each crop and products that will be implemented through transparent mechanisms.

v. For helping poor farmers engaged in minor export crop' production, there is a need to up-scale the Cluster Village Development programme being implemented through community based organizations.

10. Impact of Using Plastic Crates on Vegetable and Fruit Marketing in Sri Lanka

Research Team: Mr. J.K.M.D. Chandrasiri - Co-ordinator
Mr. S. Epasinghe - Co-researcher

Source of Funding: Consolidated Funds

Under the Api Wawamu-Rata Nagamu programme, it is expected to distribute 300,000 plastic crates among different market users at a half of the cost (subsidized rate) in order to reduce post harvest losses in vegetable and fruits. The Institute of Post Harvest Technology in Anuradhapura is involved in implementing this project. The adoption of diverse plastic crates by various users, their impact on post harvest loss reduction, farm gate price and quality of the produce are not known. This study focuses on this directive.

Study Objectives

The principal objective of the study is to evaluate the use of plastic crates and its impact on fruit and vegetable marketing in the country.

The specific objectives are:

i. To investigate the distribution of plastic crates among different stockholders in the supply chain and in different districts.

ii. To examine the purposes for which the purchased plastic crates are used and underlined reasons.
iii. To identify market channels using plastic crates and measure the impact of using them on the post harvest losses, the quality of products and the producer price.
iv. To make recommendations for better utilization of plastic crates for vegetable and fruit marketing.

Findings

i. During the period January 2006 December 2008 nearly 43,000 plastic crates have been distributed among different stake holders in different districts. Out of those amount 47.4, 7.4, 2.8, 2.6 and 1.5 percents have been distributed among producers, wholesalers, retailers, collectors and transporters respectively. More than 27 per cent have been distributed among combined category of users. The prominent districts to where the owners of distributed crates belonged are Anuradhapura (18.9 per cent), Badulla (25 per cent), Nuwara Eliya (20.2), and Gampaha (11.6 per cent).

ii. The plastic crates are very limitedly used for packing and transporting vegetables and fruits.

iii. The limited number of market channels that are using crates for transporting fruits and vegetables from producer level to consumer level are handled by specific group of market stakeholders. Among those are the super marketers (like Cargils and Keels) that supply agro-products to the local consumers thorough their market outlets , the wholesalers who have trade outlets in Economic Centers and also those wholesalers who supply products to the tourist hotels, exporters and the firms involved in exporting agro-products.

iv. Though the producers are ready to use crates for the intended purpose it has been restricted by a number of reasons which includes the possibility of packing very limited quantity of products in crates compared with poli-sack bags so that requirement of more space to transport their products in crates and also the resultant increase of transport cost plus additional expenses for loading and unloading the crates and also discouraging the use of crates by transporters by rejecting to transport the products in crates etc.

v. Although the plastic crates are not using at large scale for transporting vegetables and fruits from producer to consumer level many farmers are using them for harvesting their farm products and also to transport that product from farm to the home.

vi. The plastic crates are unintendedly and largely used by B'onion farmers in Mahaveli-H area and Dambulla to transport seed onions from their farm to Nuwara Eliya for the purpose of Vasanthee Karanaya and transport them back. The farmers feel that using crates for that purpose can maintain less damage for seed onions.

vii. The potato farmers in Nuwara Eliya and Badulla also use crates for packing seed potatoes. Those farmers' perception is that the crates are more suitable for the said purpose because of better ventilation facilities available within them.

viii. In market channels that plastic crates are successfully utilised the post harvest losses are reportedly to be very low (less than 5 per cent), the quality of the products are reported as very high and the farmers are also benefited by having a higher price. Because of the limited amount of products come into the market under this system, it has been impossible to do an effective change in post harvest loses, quality and the price of the fruits and vegetables in the market.

Recommendations

i. Study concludes that plastic crates can be popularized with integrated supply chain system. Hence integrated supply chain system should be established through organizing farmers, establishing backward and forward linkages, and development of infrastructure facilities such as packing houses, farm roads, and facilitating to use appropriate trucks.

ii. The government should facilitate the collectors to buy trucks and lorries to facilitate proper transportation by providing credit facilities swiftly and on concessional rates of interest.

iii. A series of training programmes such as awareness creation, entrepreneurship development and group formation are needed to achieve the intended objectives of the programme.

ON-GOING STUDIES

1. The Status of Technology Transfer in the Smallholding Agriculture Sector: A Case of North Central Province

Research Team: Ms. P.R. Weerakkody - Co-ordinator
Ms. Sharmini K. Kumara - Co-researcher

Source of Funding: Consolidated Funds

Dissemination and adoption of appropriate technology and information provide the foundation for global competitiveness in agriculture. It is a cyclic process characterized by a two way communication. The new and innovative knowledge and technologies is assimilated, evaluated and transferred to end users and a feed back of its effectiveness at field level is relayed to the innovator. In the small holder agriculture sector in the country a number of obstacles have proven to constrain an effective technology transfer process. The prevailing diverse extension management systems, lack of sufficient physical and human resources, attitudinal and behavioral aspects of both the farmer and the field level extension agents have weakened the process. In addition there has hardly been an attempt in the recent past to study the micro level situation of the extension function at grass root level. This has created a huge vacuum of vital information pertaining to technology transfer process. This study explores the prevailing state sector extension under the three major management systems of the provincial, inter-provincial and Mahaweli extension system in the North Central Province of Sri Lanka.

Objective

To assess the present status and effectiveness of technology transfer process in the smallholding agriculture sector of Sri Lanka.

Specific Objectives

i. Assess the current status of technology transfer and information dissemination under each extension management system in the small farm sector.
ii. Suggest operable measures that help overcome technology transfer barriers while strengthening integration between research and extension.
iii. To recognize replicable extension efforts that has succeeded in the study period.

Under the study, data collection has been completed and data processing as well as report writing was undertaken during the concerned period.

ENVIRONMENTAL AND WATER RESOURCES MANAGEMENT DIVISION

COMPLETED STUDIES

1. Anicut Systems of Sri Lanka: A Socio Economic Analysis in the Nilwala River Basin

Research Team: Ms. G.G.de.L.W.Samarasinha - Co-ordinator
Mr. M.A.C.Sidath Bandara - Co-researcher

Source of Funding: Consolidated Funds

Contribution of the minor irrigation schemes for paddy cultivation is about 24.5 per cent of cultivated land (DCS, 2008). Many studies on small tanks that fall into the category of minor irrigation schemes of less than 200 acres of command area have been carried out and there is a large number of publications available on this theme. However, the attentions paid to anicut irrigation schemes in the past by the respective government authorities and researchers are very limited. Only a few research studies have been conducted on small anicut- based irrigation schemes. In the low country wet zone the highest density of small anicut schemes is found within the Nilwala river basin in the Matara district. Therefore, this study was planned to identify the activities involved in economic diversification, livelihood characteristics of the people and other problems associated with anicut-based agriculture in the Nilwala river basin.

The major objective of the study is to identify the nature of the anicut systems and irrigation water supply during the *maha* and the *yala* seasons and study the existing land use pattern and cropping systems in anicut irrigated areas to understand economic diversification and the livelihoods of the farmer-families benefiting from the anicut systems.

The study findings show that, the economic contribution from anicut irrigated paddy cultivation is very small in the study area of is less than 10 per cent of the total annual income of the majority of the households. Majority of the households are in the annual income group of Rs.100, 000.00 to 250,000.00 in the selected sub-watershed areas and more than 75 per cent of the total income is earned from non-farm activities.

There are about 20 to 30 per cent of the anicut systems that are abandoned in the study area. According to the survey findings major reasons for abandoning these anicut systems are abandonment of the irrigated paddy lands in the anicut command area and improper placement of some of the anicut systems. Maintenance of the anicut systems is not practised systematically. Almost all the farmers are members of the Farmer Organizations (FOs) in the respective areas. It is a requirement of all members of the FOs to have the approval of the respective FOs to obtain government sponsored subsidized fertilizer programme.

Paddy occupies about 65 per cent of the total cultivated land extent in the middle Nilwala sub-watershed and 41 per cent in the Urubokka Ganga sub-watershed respectively. Paddy is cultivated mainly for the purpose of domestic consumption. Cropping intensity of the low land paddy was substantially higher in the study area with cropping intensity values 1.86 and 1.77 in the Middle Nilwala and the Urubokka Ganga sub watersheds respectively. Average paddy yield in the study

area varies between 34 to 54 bushels per acre (0.29mt/ha to 0.45mt/ha). The values of average paddy yield is comparatively lower than the dry zone areas.

The cost of cultivation of paddy per acre including the cost of family labour is about Rs.38, 912 in the middle Nilwala sub-watershed and it is Rs.39,326 in the Urubokka sub-watershed. In the middle Nilwala sub-watershed, labour cost is about 51 per cent of the total cost including family labour where as it is about 45 per cent in Urubokka Ganga sub watershed. Total number of labour days required to cultivate one acre of paddy is about 37 in the middle Nilwala and 32 in Urubokka Ganga sub watersheds. For the purpose of weed control and management of pest and diseases it requires about 16 per cent of the total cost of production in the middle Nilwala sub watershed while it is 10 per cent in the Urubokka Ganga sub-watershed.

A complex system of land tenure is observed in the study area. In the middle Nilwala sub-watershed ¼ *ande* or *praveniya*, that is the sole ownership type of ownership is the prominent type of land tenure. In Urubokka sub-watershed, the percentage of land parcels that is solely owned is 42. The second most significant category is *thattumaru* with 24 per cent of the land holdings. In the middle Nilwala sub-watershed the *thattumaru* system is not much popular. *Praveniya* type of ownership accounts for 21 per cent in the Urubokka sub-watershed.

In the middle Nilwala sub-watershed 71 per cent of the holdings of lowland are within the size class of less than 0.5 acres of land. Holding size reduction is due to the fragmentation within the siblings. Percentage of holdings that are within that size class is around 76 in the Urubokka Ganga sub-watershed.

About 39 per cent of the total employed population is involved in agricultural activities as their main employment. Farmers who are above 65 years of age accounts for 28 per cent in the middle Nilwala sub-watershed and 31 per cent in the Urubokka sub-watershed areas. Out of the sampled population, those in the age cohort 20 to 30 only 1 per cent was engaged in agriculture in the Middle Nilwala basin and 2 per cent in the Urubokka Ganga sub-watershed.

Recommendations:

i. Establish systematic procedures to obtain farmer participation for the maintenance activities of the anicut system linked to the subsidized fertilizer scheme.
ii. While giving the responsibility of maintenance work to the respective farmer organizations, a regular monitoring by the relevant government officials should be carried out.
iii. Rice varieties that are resistant to diseases in the wet zone agro-climatic conditions should be provided with regular advice on pest and disease control from the agricultural instructors in the area.
iv. Measures should be taken to cultivator abandoned paddy lands in the areas affected by implementation of the Nilwala flood protection scheme.
v. Paddy verities suitable to the local environment can be used to increase average paddy production in the area.

vi. When constructing a new anicut, a systematic participatory approach should be adopted to obtain the farmers traditional knowledge and wisdom regarding the hydrological environment of the area and the location of the existing irrigation works.

2. Economic Evaluation of Institutional Level Rainwater Harvesting

Research Team: Mr. M.M.M Aheeyar - Co-ordinator
Mr. M.A.C.S. Bandara - Co-researcher

Source of Funding: Consolidated Funds

In the recent past, there was a revival of rainwater harvesting (RWH) via institutionalization of rain water harvesting with government and NGO interventions and more research and development of technologies for rainwater harvesting. Urban development Authority Act No. 41 of 1978 was amended as act No.36 of 2007 to include the provision of rainwater harvesting in the urban settlements and other buildings. The increased day to day activities undertaken in the commercial sectors can be performed using harvested rainfall such as WC and urinal flushing, washing and cleaning, and for industrial cooling requirements. There is no specific need for this to be potable quality of water. Although water need has become a central issue to industries and service sector which consume substantial quantities of water for processing, washing, cooling purposes and sanitary needs, the potential possibility of harvesting of rainwater has not properly being gained attention. Only few commercial ventures and public buildings have incorporated rainwater harvesting in their building premises, but with large investments.

The major objective of the study is to conduct an economic appraisal of institutional level roof water harvesting projects implemented in selected areas in order to assess the suitability of rain water harvesting as an alternative option for industrial/commercial sector and the public institutions and to make recommendations to promote rainwater harvesting at institutional level
Case studies were conducted at the Factory premises of David Peiris Motor Company (DPMC), Rainwater Utilization facility at Brandix Casual Wear (Pvt) Ltd, Seeduwa and rainwater harvesting facility at the Millennium IT campus, Malambe.

According to the study findings, RWH in the case study areas has helped to reduce the risk and uncertainty in the production process caused by restricted public water supply and limited water available in the groundwater aquifers especially during the dry periods. The goods and services providers have enjoyed reduction in water tariff or in cost of water extraction from alternative water source due to utilization of rainwater. The RWH process has helped to reduce the pressure on groundwater resources and the occurrences of flash flood in the vicinity. The major constraints that hinder the water harvesting are higher initial investment, need of a large surface area for water storage and extended dry periods.

Results of the two case studies out of three examined in this report readily show a positive economic results and the investment made is recoverable within 7 to 15 years at 7 per cent interest rate with the IRR of 18 per cent and 11 per cent. Rainwater is equally valuable water source which is a useful option to serve the purposes of washing, cleaning, toilet flushing, industrial cooling,

vehicle washing and landscaping without additional treatment cost. Low construction cost and effective operation of RWH systems are critical to achieve the economic efficiency. The minimization of construction cost can be achieved easily by incorporating RWH design at the early stage of planning process. Designing the roof with good quality roofing materials like Zink-Aluminum corrugated sheets has the ability to collect good quality water. Public awareness and education on the importance and the benefits of rainwater harvesting and the potential role of RWH in minimizing the risk and uncertainties of alternative water supplies can play a key role in promoting this technology.

Recommendations

i. The government agencies engaged in the drinking water supply and groundwater resources management should provide the users with an incentive package to promote rainwater harvesting at institutional level.
ii. RWH should be mandatory for public and commercial buildings through appropriate legal framework and institutional arrangements. The government should enforce necessary bylaws in this aspect.
iii. Low cost appropriate technologies should be developed for large scale rainwater harvesting in order to increase the economic efficiency.
iv. Regulation should be in place to control the unlimited tapping of groundwater and the policy of 'groundwater is free for all without any limit' should be changed, not only to preserve environment but also to motivate users to shift towards RWH.
v. Education and awareness building are essential to advocate and influence the people towards RWH.
vi. Measures should be taken to introduce the concept of RWH as a part of CSR among private sector

3. Public-Private Partnership in Irrigation Management: Experiences of Ridi-Bendi Ela Farmer Company Model

Research Team:	Mr. M.M.M Aheeyar	-	Co-ordinator
	Mr. M.A.C.S. Bandara	-	Co-researcher
	Ms. M.T. Pathmajani	-	Co-researcher

Source of Funding: Consolidated Funds

Much emphasis was given to participatory irrigation management (PIM) after late 1980s as a mean to improve irrigation efficiency, sustainable operational maintenance and farmer's income. With all the efforts and hard works, the improvement achieved in terms of farmers livelihood and the sustainability of infrastructure was marginal. Performance evaluation studies carried out have indicated various draw-backs in participatory irrigation system management approach. FOs were unable to ensure overall economic and social wellbeing of smallholder farming communities through profitable economic ventures.

Land fragmentation, monotonous cropping pattern, inefficient use of water and non-commercial nature of operations have contributed the low level of living standards of farming community. In consideration of mixed outcomes of past approaches, the working group on agricultural policy of the National Development Council (NDC) recommended a new approach for irrigation system

management during 1997. NDC proposed to create an institutional arrangement wit public-private partnership, where, the isolated small-scale agricultural producers were expected to merge in to a Farmer company (FC). The company empowered to use all inputs including land and water in an optimal manner. As a result it was expected to ensure economic land and water use for agricultural production while engage in market oriented production and value addition to ensure full benefits to farming community. Ridi Bendi Ela (RBE) farmer company model adopted under public-private partnership was one of the unique approaches experimented in irrigation system management in Sri Lanka.

The primary objectives of the research are to study the approach and institutional arrangement adopted in irrigation system management and commercialization of irrigated agriculture and to assess the performance of the sustainable O&M under the complete management turnover. The study also aimed to evaluate the role of public-private model in enhancing agricultural production and farmer's income.

The major findings of the study are that, RBE Farmer Company has been functioning in the area with the rise and fall in their performance during last nine years. Despite the company has made continuous losses in last five years, 92% of the sample farmer representatives and majority of the participants of the focus group discussions reiterated the need of FC in the area and its positive role of providing integrated services to the farming community. The FRs who are rejected the need of FC are mainly (75 per cent) non-shareholders. About 775 new members have purchased shares from the company during 2007 and 2008, further indicating importance of the company despite the losses incurred for the investment made.

The company has made several initiatives at various levels of success to achieve two of its primary objectives- diversification of smallholder agriculture and enhancing household income. The FC has been successful in the role of professional arm of System Level Farmer Organization (SLFO).

The company was at its best during the period of handling irrigation management responsibilities from 2000-2004. Irrigation performance indicators and the beneficiary responses clearly indicate the superior water and irrigation system managed by the FC during its tenure even during drought stricken seasons. Handling of irrigation responsibilities has given strengths to FC providing financial vigor, establishing farmers' trust on FC and keeping the beneficiaries intact with the company. The involvement of FC in providing inputs (fertilizer and agro-chemicals) created a competitive market leading to reduction in input prices and availability of quality inputs in the market. This competitive environment is continuing until today, which is one of the reasons for the inevitability of FC even in losses incurred. Reduction of water duty from over 5ac.ft. to less than 3ac.ft and minimized head-tail differences in water availability are great achievements, which has helped to increase the extent of dry season cultivation, crop productivity and farmers income.

Although farmers emphasized the need of a FC in the area, the majority of shareholders have been away from the active participation of FC activities. One of the major issues identified by shareholders is lack of transparency in company activities and corruption and malpractices by some of the company managers. The shareholders are unable to understand the accounting procedures and the terminology used in the annual accounts submitted to the AGM. Many people are suspicious about the O&M allocation given by ID to the FC for O&M during 2000-2004 and also other transactions company made with private sector organizations. One of the reasons highlighted by the beneficiaries is that, importance of recruiting suitable persons to manage the

company. The dilemma with shareholder elected company directors and externally recruited management staff was conflict of knowledge of management staff and power entrusted to the BOD. The BOD had lack knowledge to counter or antagonize the proposals forwarded by the managers at BOD meetings. In turn, the managers were obliged to support nepotism of BOD in providing or prioritizing company services, especially in selecting the beneficiaries for FC sponsored business activities, purchasing seed paddy and providing credit facilities.

The above negative facts have pushed the shareholders to lose the trust on FC. The most of the activities undertaken by the company after water management functions were withdrawn by ID are not directly beneficial the farming community except seed paddy programme, group loan and supply of fertilizers. The energy and efforts mobilized to business activities such as packing of tea, rice milling, ornamental fish production and poultry production were seen as waste of time and resources as they are not considered as important aspects by the community.

Policy Implications/ Recommendations

i. Farmer Company is a social capital and a service arm of providing integrated services to the beneficiary community.
ii. Farmer company model is an economically viable, socially feasible, and culturally appropriate mechanism to manage water and land resources in a sustainable manner.
iii. Shareholder participation in FC activities must be increased designing better communication system with shareholders, building trust among shareholders on company, ensuring shareholder representations and incorporating shareholders interests in preparing business plans.
iv. Activities of FC should be guided and closely monitored with the advisory body appointed from senior government officials such as District/ Divisional Secretary, Irrigation Engineers, provincial Director of Agriculture and project manager of IMD.
v. Priority should be given for locally available professionals/retired qualified government officers in selecting GM and other technical staff.
vi. Communication barriers between company management and the shareholders should be minimized by avoiding use of jargons and technical matters.
vii. Farmer company has proven as an entity succeed in creating competitiveness in agricultural input supply market and safeguard the farming community from market manipulation and exploitation by private sector.

Participations in National Seminars/Training Workshops

1. Mr. Aheeyar and Mr. M.A.C.S. Bandara participated and presented a paper at the Water Professional Day 2009 held on 1st October 2009 at Post Graduate Institute of Agriculture, University of Peradeniya.
2. Mr. M.M.M. Aheeyar and Mr. M.A.C.S. Bandara participated the certificate course on Strategic environmental Assessment, Conducted by Central Environmental Authority and Institute of Environmental Professional Association of Sri Lanka, February 22-23 and February 28 and March 1, 2009, Colombo.

MARKETING FOOD POLICY AND AGRIBUSINESS DIVISION

Market Research Unit (MRU) now known as Marketing, Food Policy and Agribusiness Division (MFPAD) of the Hector Kobbekaduwa Agrarian Research and Training Institute" (HARTI), was established in 1979, with the assistance of the USAID. Further assistance was provided by the UNDP/FAO, during the period of 1993 – 1997 to strengthen its activities. The main role of the division is collection, compilation, analysis and dissemination of market statistics for state policy markers, farmers, traders, academics and others. Currently, the MFPAD provides market information to the Ministerial Sub Committee on Cost of Living Review and National Food Security which is located at the Presidential Secretariat. The MFPAD also essentially provides market information to the policy makers in the Ministries of Agriculture, Trade, Commerce and Consumer Affairs, Health, Finance and Planning and the Central Bank of Sri Lanka in formulating policies for stabilizing market prices.

In addition, the division provides market data and information to the government departments and other institutions at the national and provincial levels, state and private banks, foreign donor agencies and other institutes, embassies, universities, private trading companies, cooperatives and private traders, non governmental organizations, media agencies and farmers. There are a number of other activities implemented by the MFPAD, such as conducting agricultural marketing research studies and training programs for farmers, traders and officials of the extension services.

Regular Work Program

1. Food Information & Market Intelligence Project

Research Team:

Dr. T.A. Dharmaratne	-	Coordinator
Ms Roshini Rambukwella	-	Co-researcher
Ms Ruwini Vidanapathirana	-	Co-researcher
Mr. T.G.Somaratne	-	Co-researcher
Mr. H.M.J.K. Herath	-	Co-researcher
Mr. Duminda Priyadarshana	-	Co-researcher
Mr. N. P.G. Samantha	-	Co-researcher
Mr. W.A.N. Wijesuriya	-	Co-researcher
Mr. E.A.C. Prienkara	-	Co-researcher
Dr. Wasanthi Wickramasinghe	-	Co-researcher

Source of Funding: Consolidated Funds

Weekly “Food Commodities Bulletin” (English and Sinhala) and Monthly “Food Information Bulletin” (English and Sinhala) are the two major periodicals prepared by the MFPAD. These provide price statistics and market information to the government, farmers, traders, consumers and others. These bulletins play a major role in the allocation of resources, reducing transaction cost, improving bargaining position of farmers, enhancing awareness of overall market conditions, supporting consumers to bargain and giving valuable statistics for policy makers to take into account in maintaining food stocks to ensure food security.

Prices and relevant market information of food commodities were collected from nine retail markets in Colombo and the suburbs such as Pettah, Thotalanga, Dematagoda, Borella, Wellwatte, Kirulapone, Nugegoda, Kadawatha and Kiribathgoda, and from the (Colombo) Pettah wholesale market. In addition, data and information were collected from 20 markets in major food producing districts and food consuming districts.

The outstation Markets covered in the year 2009 were Kurunegala, Nikawereatiya, Dambulla, Anuradhapura, Thambuttegama, Polonnaruwa, Nuwara Eliya, Kandy, Badulla, Keppetipola, Ratnapura, Embilipitiya, Hambantota, Tissamaharama, Matara, Galle, Kalutara, Moneragala, Dehiattakandiya, Puttalam, Meegoda and Marandagahamula. Wholesale prices of food commodities were collected daily from Pettah, Kandy, Dambulla, Norochcholai, Marandagahamula and Meegoda markets. These data were disseminated daily through electronic media, to enable producers and traders to know the commodity prices in main wholesale markets in time.

Weekly Food Commodities Bulletin issued on every Friday contains wholesale and retail prices in Colombo and outstation markets along with producer prices in major producing areas. The prices of main commodities collected are rice, chilies, onions, potatoes, vegetables, fruits, egg, fish and dried fish. In addition the bulletin also provides a statistical description of ranges, averages and prices comparison of the previous week and the year.

The monthly Food Information Bulletin another major contribution of the division provides a brief summary of the key indicators, prices, production, crop situation and food stocks of the past month. It also provides to the public the overall food marketing situation of the country with averages and retail prices, wholesale prices, producer prices in major crop areas and quantity of food imports and their values, CIF prices and countries that Sri Lanka imports food from. Further, the information on crop stage in major producing areas, cultivation extents, and target crop growing extents, actual crop extents, achievements, water levels of major irrigation tanks, rainfalls and climate conditions, and natural causes like drought, floods, etc that damage crops are the key indicators and information .

The regular work programme was assisted by three statistical officers, ten statistical assistants and 19 casual investigators. The team comprised of a statistical officer with seven statistical assistants and 14 casual investigators was assigned with the collection of data in the field.

Progress for the Year 2009

i. Weekly Food Commodities Bulletin–52 bulletins were issued (English and Sinhala).

ii. Monthly Food Information Bulletin – 11 bulletins were issued (English and Sinhala)

iii. Daily and weekly Food Prices were provided to market participants and media in time.

iv. Provided price data and other market information on request to government and private sector agencies throughout the year.

v. Providing up to date the food commodity prices to the "Food Procurement and Monitoring Unit" under the Presidential Secretariat throughout the year

ON-GOING STUDIES

1. Marketing of Vegetables through Supermarkets: Implications of Procurement Practices for Farmers

Research Team:

Ms. R.P. Vidanapathirana	-	Co-ordinator
Mr. W.H.D. Priyadharshana	-	Co-researcher
Ms. R.N.K. Rambukwella	-	Co-researcher

Source of Funding: Consolidated funds

Scope of the Study:

Supermarkets have become one of the most vital retailers in the urban food distribution chain. Supermarkets are planning large scale expansion of its end-to-end food supply chains to bring agricultural products from farmers across the country, directly to consumers through its outlets. Supermarkets are expected to reduce prices of food items by eliminating the middlemen, while increasing food production in the country and incomes of farming communities. In Sri Lanka, the supermarket sector is growing at a faster rate and it creates new opportunities for farmers who are able to supply what supermarkets demand. Hence, it is important for the government to be aware about these changes, opportunities and challenges facing farmers as it can enhance small producer livelihood. This study aimed to fill this gap with a particular focus on procurement of vegetables by supermarkets. Therefore, this study attempts to examine the organization and functioning of vegetable supply chains systems of supermarkets and its implication on farmers compared to conventional marketing channels.

Objectives:

i. To examine the organization and functioning of supermarkets supply chain systems with a focus on procurement practices of vegetables and identify their limitations
ii. To identify the implications in supplying vegetables to supermarkets.
iii. To understand the farmers' view in supplying vegetables to supermarkets against the conventional marketing channels.
iv. To analyze the variation of retail prices at different supermarkets and conventional markets.

Questionnaire survey was conducted to interview supermarket-channelled farmers who supplied vegetables to Nuwara Eliya, Bandarawela and Thambuttegama collecting centers of Cargills and Nuwara Eliya and Thambuttegama collecting centers of Keellssuper. From each location of vegetable collecting centers 20 farmers were interviewed. At the same time 100 farmers who supply vegetables to conventional marketing systems were interviewed from the same locations. Altogether 200 farmers (100 supermarket-channel and 100 traditional-channel farmers) were interviewed. In addition, the key officers of the relevant supermarkets were interviewed to understand their procurement and distribution system.

2. Impact of High Food Prices on Households Food Security

Research Team:

Mr. T. G. Somaratne	-	Co-ordinator
Mr. H. M. J. K. Herath	-	Co-researcher

Source of Funding: Consolidated Funds

Scope of the Study:

World food prices have been increasing rapidly since 2006, which swelled during the period between 2007 and 2008. The rate of price increase was higher than the average. In line with this global situation, the food prices in Sri Lanka also increased during the above period. As a result, the households of the each sector i.e. urban, rural and estate, have to increase their budgetary expenditure to cope with the escalating food prices. Since their purchasing power has declined, they have fallen into food insecurity. The possible alternatives to cope with the impact of high food prices vary according to the livelihoods within each group.

This study was implemented with the purposes of investigating the alternative strategies to cope with the escalating food prices and to study the impact of high food prices on food security of the households in each sector.

Objectives

i. To review the price behavior of the food- sub sector in 2007 and 2008;
ii. To study the impact of escalating food prices on food security of each household sector (Urban, Rural and Estate);
iii. To ascertain the coping strategies followed by each household sector with the high food prices;
iv. To identify an appropriate food supply mechanism to ensure the food security of each sector.

Both primary and secondary data were used for the study. Analysis of price trend was based on the data available with the Department of Census and Statistics and the Hector Kobbekaduwa Agrarian Research and Training Institute. Primary data generation was based on the details of the sample survey. A Multi-Stage/Random sampling method was used for the selection of the sample. The size of the sample was 300 households selected from 6 Divisional Secretariat Divisions in 6 Districts.

Findings

i Among many causes of economic hardships revealed by the informants, rising food prices was a major concern of 29 per cent of the household visited. The severity of hardship caused due to rising food prices was most evident the estate sector, where 58 per cent of informants substantiated it. The urban slums dwelles and fishing communities too insisted that they too are in serious economic hardships due to rising food prices. On the whole, not less than 18 per cent of all households visited are in food insecurity.

ii. When food security is threatened the affected persons adapt more than one coping strategy. This multiplicity of coping was evident in the study areas when the majority of households (79 per cent) optd for cheap low quality food. Along with it, there was the reduction of consumption in 65.7 per cent of household visited. The other non-food adjustments used to cope with the economic hardship caused due to rising food prices include: a) buying food items on credit; b) borrowing loans from friends and relatives to tide over the strains of the increasing prices; and c) pawning or selling household jewelry.

iii. The above stresses prevailed despite the fact that there were rural government and NGO sponsored economic assistance and income distribution programmes. There include health care programmes, fertilize & subsidy and Samurdhi programme among others which benefitted 52 per cent, 76 per cent and 35 per cent of households respectively in the areas subjected to this study.

3. Pre-Feasibility Study of the Proposed Sugar Project in Anuradhapura and Trincomlee Districts.

Research Team:	Prof. Ranjith Premalal De Silva	-	Coordinator
	Dr. L.P.Rupasena	-	Co-researcher
	Dr. T.A.Dharmaratne	-	Co-researcher

Source of Funding: The Sugarcane Research Institute

Scope of the Study:

The development policy statement presented by the President of Sri Lanka, (*Mahinda Chinthna: 2005*) has placed high priority on the development of the sugar industry and set the target to reach 50 percent of the national requirement. If the target could be achieved, sugarcane cultivation could play a major role in transforming agriculture and boosting agricultural GDP. In view of realizing these goals, the Ministry of Supplementary Plantation Crops Development in Sri Lanka has been planning to establish new sugar factories in Bibile, Siyambalanduwa, Anuradhapura, and Kurunegala areas. Since land is a key determinant of sugarcane cultivation and establishment of new factories, it is very necessary to review, and work out a plan to determine the land availability in those areas for the proposed projects.

The Sugarcane Research Institute (SRI) under the Ministry of Supplementary Plantation Crops Development requested the Hector Kobbekaduwa Agrarian Research and Training Institute (HARTI) to conduct a pre-feasibility study on the proposed Anuradhapura and Trincomalee sugar project. The factory is expected to set up at Kahatagasdigiliya and supply of sugarcane is expected from the 13 Divisional Secretariat (DS) areas of these two districts. Out of these, 10 divisional Secretariats are located in Anuradhapura and three in the Trincomalee district.

Study objectives

The main objectives of the socio-economic survey are:

i. To study demographic characteristics, education and employment conditions of the people residing in the command area,
ii. To ascertain land ownership, land size and land use pattern in study locations,

iii. To examine cropping patterns, competitive profitability of cultivation of sugarcane versus competing crops and farmers' willingness to cultivate sugarcane,

iv. To examine infrastructure facilities available in the area and improvements required,

v. To find out areas suitable and potential for sugarcane cultivation

The survey was conducted in 13 Divisional Secretariat (DS) areas covering nearly 300 GNs divisions. Selection of GN divisions was limited to 13 in DS in the Anuradhpura and Trincomalee districts that the proposed sugar factory would be set up. Indirect oral examination method was applied to collect information to meet the study objectives. In this method a person who was knowledgeable about the subject concerned was used to collect information. Accordingly, Grama Niladaries (GN) in the study area was selected to collect information relating to the above objectives using a structured questionnaire. The Divisional Secretary in the area organized a meeting and the research team explained the questionnaire to GNs at the meeting. The completed questionnaires were returned within two weeks. GNs filled the questionnaire based on the information they had and updated the data. Since GNs was involved in various surveys organized by different agencies they had bulk of information on socio-economic conditions in their respective areas. As regards farmers' willingness to cultivate sugarcane, instructions were given to meet the farmers and obtain the extent they wish to cultivate sugarcane. Besides, focus group discussions and key personal interviews were conducted to get farmers' opinions on cultivation of sugarcane, and to identify the types of farmers who were willing to cultivate sugarcane.

In addition, a rapid appraisal survey was conducted by the research team to collect information on costs and returns on competitive crops for profitability analysis. Competitive crops were identified after discussions with agricultural officers in the study area. Simple statistical methods such as averages, percentages and ratios were used to analyze the data. Profitability analysis was carried out in different scenario such as return to labor and return to capital.

4. Effect of Global Economic Crisis on Agricultural Input Markets of Sri Lankan Food Crop Sector - (Desk Research Study)

Research Team : Dr. Wasanthi Wickramasinghe - Co-ordinator

The global economic crisis currently underway is the worst economic crisis the world has ever experienced since the Great Depression. World trends that had been experienced for some years and cyclic factors added to the crisis by suddenly increasing fuel, fertiliser and food prices which caused global inflation from early 2007.

The impact, the global economic crisis made on the agricultural input markets of the Sri Lankan food crop sector was reviewed under this study. They are as follows.

- It caused a general inflation in the country.
- Country had to import fuel, fertilizer and foods at higher prices.
- However government took several measures inhibiting the diffusion of total inflationary effects to the local consumer and producer. Because of the measures such as huge government subsidies on agricultural inputs and relaxation of taxes imposed on food items, world market prices were not directly transmitted to the local consumer and to the local

farmer. However it caused to increase recurrent public expenditures worsening fiscal deficits.

- Global fertilizer prices rose more than 200% in 2007 and 300% -400% in 2008. Sudden increase in the fertilizer prices in 2008 caused government to incur huge budgetary expenditure on fertilizer subsidies as government continued to subsidise fertilizer at Rs 350 per bag for paddy farmers. Subsidy cost more than doubled from Rs 11,000 million in 2007 to Rs 26,700 million in 2008.
- In spite of several measures, food price inflation recorded the highest and it contributed much to the general inflation. Food price index rose by 20% and 31% in 2007 and 2008 respectively. General inflation accounted by the consumer price index showed that the index had increased by 16% and 23% in 2007 and 2008 respectively.
- General inflation in the country caused to increase agricultural wage rate nominally but the real wage rates remained as 2006. In nominal terms, wage rates in the paddy producing areas increased from Rs. 310- 385 per day in 2006 to Rs.420-550 per day.
- Increased fuel prices caused to increase the cost of draft and machinery power for crop production which already started to increase at an increasing rate from 2006.
- Increased fuel prices also caused an increased transport cost of agricultural products.
- All these price increases of agricultural inputs increased cost of production of agricultural commodities. For example, the cost reduction effected by new fertilizer subsidy scheme in 2006 was offset by the increased other input costs of paddy farmers due to the crisis in 2007.

But the increased world food prices provided an incentive framework to boost domestic production as world food production was expensive compared to the domestic production. In terms of the continuation of fertilizer subsidy program and other food production promotion programs made an environment conducive for farmers to bring more land under cultivation and to bring increased yields. However, in addition to the cost push inflation, market imperfection also caused to increase food prices at consumer level at a time when world markets are stand-alone, due to huge price differences. Having recognized these market imperfections, government took measures to maintain price control at the consumer level.

In mitigating the effect of these external shocks, the strategies that government adopted were effective in the short run. Nevertheless, attention should be focused on the stagnating yields and productivity levels in the food crop sector in designing the medium and long term strategies.

Other Activities

i. Celebrating "National Food Week" in 2009 June 22-28, MFPAD planned and issued a special magazine of "Govi Janatha" on the them of food production and marketing in Sri Lanka, volume 13, No.2 , April- June 2009.

ii. Mrs. C.P.Hathurusinha (Research Fellow) continued to participate in meetings and provide the commodity prices with marketing information to the "Food Procurement and Monitoring Unit under the Presidential Secretariat in the year 2009, to decide the procurement prices of food to the government institutions, such as armed forces, hospitals and prison.

iii. Mrs. Roshini Rambukwella, Ms. Ruvini Vidanapathirana and Mr T.G. Somaratne, (Research Officers) of the division translated the Report on 'Evaluation of Crop Insurance Schemes in Sri Lanka' into the Sinhala language.

iv. Mrs. Ruvini Vidanapathirana prepared the Report on 'Requirement of Tomato for Local Processing Industries and Local Hotels', and submitted to the Presidential Secretariat.

v. Mrs. Ruvini Vidanapathirana prepared a research article on 'Marketing Margins of the Domestic Vegetable Trade in Sri Lanka', published in the Sri Lanka Journal of Agrarian Studies (SLAJS).

vi. Mrs. Ruvini Vidanapathirana prepared the Report on 'Seasonal Variation of Agricultural Commodities in Sri Lanka'.

vii. Mr. H.M.J.K Herath presented the paper on 'Temporal Variation of Agro-Climatologically Zones in Sri Lanka' at the conference on "Water for Food" on 4 October 2009, IWMI

viii. With the guidance and supervision of DD(R)'s Office, MFPAD conducted the field survey on 'Big onion Production and Marketing in Dambulla and Sigriya' Agrarian Services Center areas, and findings were presented to the board of governors of HARTI.

ix. Mr. W.H.Duminda Priyadarshana, Research Officer prepared and published the following articles in "*Divaina and Dinamina* news paper in the subject of agricultural marketing

a) *'In the price hike in vegetables a chance?' in Divaina 11.08.2009*
b) 2. '*Challenge of Production and Marketing of Big onions' in Divaina 15.09.2009*
c) *'Challenge of Production and Marketing of Big onions' in Dinamina 17.11.2009*
d) 'Local Solution For big onion imports' in Divaina 12.22.2009

x. Dr. Wasanthi Wickramasinghe delivered the lecture on Poverty Incidence, Poverty Measurement and Poverty Monitoring Training Program on New and Emerging Challenges in Rural Development for Poverty Alleviation, 18- 23 May 2009, Giritale, Polonnaruwa.

xi. Dr. Wasanthi Wickramasinghe undertook the fallowing undergraduate and graduate level thesis supervision and evaluation activities in the year 2009.

a. *Problems of Resettlement Plans in Development Projects: A case study of the Hambantota Harbour Project – L.P.T. Eranga (2009), B.Sc. (Agriculture), University of Ruhuna*
b. *Effect of Management Practices on Disease Control of Cinnamon Cultivation in Galle – Prabashi Liyanapathirana (2009), B.Sc(Agriculture), University of Ruhuna*
c. Impact of Irrigation Investments in Regional Development: Uda Walawe Development Project in Southern Sri Lanka - Deeptha Wijeratne, M Phil in Agricultural Economics, PGIA, Peradeniya

xii. Dr. Wasanthi Wickramasinghe served as the secretary to the Sri Lanka Agricultural Economics Association (SLAEA) and organized the Annual Research Forum of SAEA in 2009.

xiii. Serve as the chairperson of the Committee on Socio-economists and Poly Analysts of CARP, Dr. Wasanthi Wickramasinghe organized the following seminar/ workshops on:
   a. *Impact of Global Economic Crisis on Agriculture*,
   b. Use of Biotechnology in Agriculture,
   c. Economics of Alternative Energy generation through Agriculture Materials

xiv. Dr. T.A.Dharmaratne continued to participate the Trust Board meeting of the Megoda Economic Centre in year 2009

xv. Dr. T.A.Dharmaratne published article on 'Rural *pola* markets in Sri Lanka', **BizMag**, vol 07, September 2009 (Providing information with interviews)

xvi. Mr.W.H.Duminda Priyadarshana and Mr. N. P.G. Samantha Research Officers of the division prepared the following ad-hoc reports on the crops of gingerly, black gram and ginger and submitted to the Ministry of Agriculture Development and Agrarian Services.

xvii. Mr.W.H.Duminda Priyadarshana, and Mr. W.A.N. Wijesooriya, Research Officers of the division prepared the following ad-hoc reports on the crops of maize; sunflowers and big onions and submitted to the Ministry of Agriculture Development and Agrarian Service

xviii. Mr.W.H.Duminda Priyadarshana, Research Officer is participating in a *live programme* conducted by Sri Lanka Broadcasting Cooperation on agricultural marketing and price information's on every Friday at 7.00 to 7.15 pm

HUMAN RESOURCES AND INSTITUTIONAL DEVELOPMENT DIVISION

As the national Training Institute of the country in the agrarian sector, the Human Resources and Institutional Development Division functions in 03 different settings:

- It functions in organizing and coordinating its own regular training programmes;
- It caters to the emerging demand of training from contemporary problems and issues;
- It provides training experts to other government organizations in planning and conducting the training programmes.

In addition to the conduct of training programmes, the division collaborates with local and international organizations and foreign institutes in organizing seminars and workshops on subjects relevant to the agrarian/rural sector.

Completed Training Programmes

1. Training Programme on Participatory Techniques (RRA, PRA & PCM) for Planning and Management of Rural/Community Development Projects (Gama Negumata Sithata Saviya Programme under "Gama Neguma" Programme).

Training Team:	Mr. N S B Epakande	-	Co-ordinator
	Mr. J K M D Chandrasiri	-	Research Fellow
	Mr. S M A Samarakoon	-	Research Officer
	Mr. R L N Jayatissa	-	Senior Research Officer
	Mr. S Epasinghe	-	Research Officer

Division conducted 03 programmes on the above theme in this year. These programmes were designed to advocate and make awareness among officers who were directly involved in the 'Gama Neguma' Programme. The main objective of the programme is to enhance knowledge on preparation of community action plans. The other objective was to enhance the participants' knowledge on the concepts and methods used in participatory planning and management.

The first 05-day programme was conducted for government officers in Polonnaruwa district from 23-27 January, 2009. At this programme, special attention was paid to draw participants from various departments, including those working in Polonnaruwa district as the Training Division had to implement an Action Research in a selected village in that district.

Other 02 programmes were conducted from 12th to 16th September and 04th to 08th December for the officers who are directly involved in the Gama Neguma Programme in the Moneragala and Kandy districts respectively. Under these 03 programmes, 93 officers were trained and prepared 05 Community Action Plans during the field exercises conducted.

2. Training Programme on Marketing Extension

Training Team:	Dr. L P Rupasena	-	Co-ordinator
	Mr. N S B Epakande	-	Co-coordinator
	Dr. T A Dharmarathna	-	Research Fellow
	Ms. C P Hathurusinghe	-	Research Fellow
	Mr. W A N Wijesooriya	-	Research Officer
	Mr. E A C Priyankara	-	Research Officer
	Mr. W H D Priyadarshana	-	Research Officer
	Mr. N P G Samantha	-	Research Officer

As the prevailing agricultural extension system in the country mainly aims at increasing production, first the farmers tend to grow crops convenient to them and then look for market after production. This production/supply oriented system, though focused on yield increases, is not market - demand orientated and planned accordingly which is the urgent requirement to sustain agriculture. To achieve this, the market extension should be added to the present extension system. This programme was designed in order to create awareness on this concept among the extension staff.

General objectives of the programme are:

- To enhance participants' knowledge about the concepts on marketing extension;
- To understand ways and means of delivering marketing extension among farmers; and
- To develop forward and backward linkages among market participants whereby improve the supply chain management.

Five programmes were conducted this year. Out of this, 03 were held for the agricultural Extension Officers of the Provincial Departments of Agriculture in Ratnapura, Hambantota and Moneragala districts of Sabaragamuwa, Suthern and Uva province respectively. These programmes were held in the months of April, August and December respectively for the above District Officers.

On the request of the Mahaweli Authority of Sri Lanka, 02 programmes were conducted in October and November in Girandurukotte (Mahaweli System C) and Thambuttegama (Mahaweli System H). Institutional Development Officers, Agricultural Officers and Unit Managers participanted in these training programmes.

In these 05 programmes was 144 participants were trained who were agricultural extension staff members in the Department of Agriculture and the Mahaweli Authority of Sri lanka.

3. Training Programme on New and Emerging Challenges in Rural Development and Poverty Alleviation

Training Team:	Mr. N. S. B. Epakande	-	C-ordinator
	Mr. V.K. Nanayakkara	-	Former Director/HARTI
	Dr. L. P. Rupasena	-	Deputy Director (Research)
	Dr. M.U. A. Tennakoon	-	Visiting Researcher
	Dr W. M. G. B. Giragama	-	Research Fellow

This Training Programme was organized by the Institute in collaboration with the Commonwealth Secretariat. The main objective of this training workshop was to exchange ideas, knowledge and experience gained through best practices in poverty focused rural development programmes implemented in the country and also to identify new and emerging challenges in implementing such programmes.

High level officers engaged in different rural development programmes under various ministries/departments participated in this training programme. In addition, representatives from local and international agencies who are involved in the rural development sector also participated. All the participants submitted papers setting out the programmes that they implemented. It was a rare opportunity that the participant had in sharing their knowledge and learning from each others experience. There were 21 participants at this workshop. Training report was prepared by Dr. M.U.A. Tennakoon, Visiting Researcher HARTI and published.

4. Training Programme on Social Mobilization and Participatory Development

Training Team:	Mr. N S B Epakande	-	Co-ordinator
	Mr. J K M D Chandrasiri	-	Research Fellow
	Mr. R L N Jayatissa	-	Senior Research Officer
	Mr. S M A Samarakoon	-	Research Officer
	Mr. S Epasinghe	-	Research Officer

Division organized and conducted the above training programme from 20th to 24th December 2009 at the Wayamba Training Centre, Wariyapola. It was designed to the field level officers of the Rural Development Department of the North Western Province. These officers are field officers who play the catalystic role in the 'Wayamba Gemi Saviya' Development Programme, an integrated rural development programme, implemented by the above department. The main objective of the programme was building the capacities of the officers in the social mobilizing part they play in the rural sector.

The output of this programme was training of 42 Social Mobilizers under the 'Gemi Saviya' Programme in the NWP.

5. Sudukanda-Nikawewa Action Research and Development Programme (Thamankaduwa DS Division of Polonnaruwa District)

Research Team:	Mr. N S B Epakanda	-	Co-ordinator
	Mr. S M A Samarakoon	-	Research Officer

This programme was implemented under 'Mahinda Chinthana'. The main objective of this programme was to improve the socio-economic conditions of Sudukanda-Nikawewa village in Hingurakgoda DS Division of the Polonnaruwa District.

Objective:

Uplifting the socio-economic level of the people by integrating the line agencies involved in rural and agricultural development sector.

Specific Objectives:

- Increasing agricultural productivity;
- Increasing agricultural and non-agricultural self employment opportunities;
- Increasing farmer- official linkages for proper extension services.

The programme was implemented under 04 components:

i. Capacity Development Programme
ii. Programme of income generating activities (IGAs)
iii. Infrastructure Development Programme
iv. National Resources Development Programme

Activities implemented

Under this 'Action Research Programme', a field level organizational mechanism was formed for easy functioning of project activities. A Field Level Committee was formed with the participation of organization leaders. The programmes which were implemented were based on the Action Plan which was prepared at the PRA Training Programme. Many development initiatives were implemented with the assistance of various government departments/institutions of the district. Compost making, bee-keeping, mushroom cultivation, poultry, homegardening, coconut cultivation, Inland fishery project, strengthening the village organizations and constructing of 02 agricultural roads are among them.

Under the Coconut cultivation Programme, 375 coconut seedlings were distributed among 75 families for cultivation under homegarden development. Plants were delivered free from the Coconut Cultivation Board. A fishery society with 10 members was formed. With the guidance of officials of the National Aquatic Resource Authority. Nine thousand (9000) fingerlings were introduced to the village tank. Due to delay in the north-east monsoon rains, releasing of fingerlings to the tank had to be delayed till December 2009.

Involvement of women in economical activities is one of the other objectives of the programme. Under this programme, 10 women got training in mushroom cultivation, and 06 out of these commenced the activity with the technical assistance of the Department of Agriculture.

For the development of homegardens, 300 plants (pomegranate, lime, guava and jak fruit) were given to the farm families under the 'Api Wawamu, Rata Nagamu' Programme. Under the rural agricultural road development programme HARTI expend approximately Rs. 800,000.00 for two village road constructions. The beneficiaries provided free labour when constructing.

STATISTICS AND DATA PROCESSING UNIT

The Statistics and Data Processing Unit functions as a National Centre for Information on Agricultural Development (NACIAD) in Sri Lanka. In collaboration with the USAID, the Centre was established in 1979 aiming to contribute national development by establishing agricultural management information system at the HARTI. The main function of the center is to generate and disseminate agricultural and agrarian information for the wider range of users i.e. researchers, planners, policy makers, undergraduates, farmers and other interested individuals. Data Analysis of research studies conducted by the Institute is the other major task carried out by the unit.

Data Bank

The Data Bank has been conceived of as a facility for social science research, planning and policy making for development in the Agrarian Sector. It is ideally located within a social science oriented research environment, where researchers collect data from diverse sources and also generate data through there own studies. Collecting and restoring of data relating to agrarian situation in Sri Lanka is a routine process of the Data Bank.

Data Bank Activities

The Data Bank activities were carried out in three categories such as data appending, data verification and system developments. During the year, the data-retrieving program was further modified to produce easy accessible formats. The entire database was checked for verification of newly updated data. Indexes were regenerated to check the availability of data. The Unit collects data from primary and secondary sources and maintains a database on agricultural crops, livestock, demography and the vital statistics. The following data series were updated during the year 2009.

I. Average wholesale prices of food commodities - 2008

2. Paddy statistics (extent sown, average yield and production) and data related to extent under cultural practices of paddy - 2008

3. Extent and production of other field crops - 2008

4. Imports and exports of agricultural commodities - 2008

5. Average retail prices of food crops - 2007

6. Average producer prices of food crops - 2007

7. Cost of cultivation of paddy and other field crops - 2008

8. Gross and net return per acre of paddy & other filed crops - 2008

9. Average rainfall and temperature (2003, 2004, 2005, 2006 and 2007)

10. Mid year population (2006, 2007 and 2008)

During the year 83493 number of records were collected and verified. Total number of records appended to the computerized database was 109212.

Total number of requests met by the Unit during the year 2008 was 171. Out of the total requests, 107 requests were made by the users within the Institute while the balance 64 was made by external users. Distribution of external requests by category of users is given below.

Category	*No. of requests*	*%*
University staff/undergraduates/other students	26	40.6
Private companies/Private Institutes	17	26.6
Ministries/Govt.Departments/Semi-govt. organizations	15	23.4
Individuals	06	9.4
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Total	**64**	**100.0**

Data Processing Activities of Research Studies

Data analysis of the following studies was completed during the year.

1. Study on food consumption pattern to develop traditional food Based Production and Marketing Policies for Nutrition Promotion
2. Study on Impact of Decrease of cultivated Paddy Land in Wet Zone of Sri Lanka
3. Evaluation of the national Food Production Drive Programme - Api Wawamu Rata Nagamu
4. Marketing of Vegetables through Supermarkets: Implication of Procument Practices for Farmers
5. The status of Technology Transfer in the smallholding Agriculture Sector
6. Study on Distribution of fresh milk for underweight children

HARTI Website

As a regular job daily prices coming from the Marketing Food Policy and Agri Business division were uploaded to the website. In addition to that key information from research publications were also uploaded to the website. Necessary modifications were carried out for displaying good

appearance of the website. HARTI website was further improved with some information in Sinhala.

Other Activities

1. Responded to the request made with regard to problems of software and hardware in computer.

2. Involved in Preparation of technical specifications and evaluation reports for purchasing of computers and related accessories.

3 Mr. E.N. R. Fernando and Mr. S.S.J. Rosa participated in the workshop on INFORM database Conducted by the CARP Institute at PGI, Peradeniya

LIBRARY

The main objective of the library is to collect, compile, retrieve and disseminate information related to the agrarian sector for the benefit of HARTI Research Staff and other interested persons and agencies. During the year, the staff borrowed 1220 books and 280 issues of journals for their reference requirements. The number of visitors to the library during the year was 185.

Acquisition of Books, Journals and Reports

The library book strength increased up to 22,687 during the year, out of which 80 were direct purchases and 1205 items were received on a complimentary basis/exchange of publications programme and 130 bound journals. A large of number of periodicals, newsletters, annual reports from foreign and local institutions were also received on a complimentary or on an exchange basis. The library also subscribed to 22 foreign journals and 11 local journals during the year.

Library Services

Requests for information and documentation services as literature searches, reference services, current awareness services and photocopying services were provided to the research staff and also to the outside users.

Access to internet based information facilities have been further extended for the research staff with the ADSL facility in the Library.

To provide current awareness services to the research staff content pages of current journals were scanned and e-mailed to individual researchers.

Newspaper articles collection on various subjects relevant to the research staff was continued during the year.

Inter Library Cooperation (ILC)

The library is a member of the Agricultural Libraries Information Network (AGRINET) and the CARP Library functions as the focal point. Library continued to participate in AGRINET SDCP scheme (Selective Dissemination of Content Pages Data Base). Member libraries requested photocopies of 218 content pages of 11 journals and photocopies of 07 journal articles from the library and received 23 content pages of 6 journals as requested by institute research staff.

Publication Exchange Programme

Twenty institute's books and 20 journals were sent to other libraries under the exchange of publications programme and received 45 publications from outside institutions.

PUBLICATION UNIT

The Publication Unit, which functions under the purview of the Deputy Director (Research), is engaged in editing and publishing of research reports, occasional reports, journals, newsletters, bulletins, manuals, brochures and other informational materials in all three languages.

Following publications related to the research and training were released during the year:

1. Paddy Statistics in Sri Lanka, 2006-2007
2. Allocation of Water Among Different Water Use Sectors in Sri Lanka: Lessons of Experience
3. Aquaculture for Rural Development and Poverty Reduction in Sri Lanka: An Assessment of Potentials and Constraints
4. Natural Resource Management Perspectives in Upcountry Vegetable Production: Farmers' Knowledge, Attitudes and Responses
5. Small Village Tank Systems of Sri Lanka; Their Evolution, Setting, Distribution and Essential Functions
6. Challenges in Rural Development and Poverty Alleviation
7. Study on the Effects and Impact of Devolution of Power on Smallholder Agriculture Sector in Sri Lanka (Sinhala Translation)
8. Evaluation of Crop Insurance Scheme in Sri Lanka. Sinhala Translation No. 2, 2009 February
9. The study on limitation and Potentials of Agricultural Research and Production Assistance in providing of Extension Service to the Rural Sector

Regular publications which were released during the year, are given below.

1. Annual Report - 2007 (Sinhala)
2. Annual Report - 2007 (Tamil)
3. Annual Report - 2008 (Sinhala)
4. Annual Report - 2008 (English)

5. Annual Report - 2008 (Tamil)
6. Sri Lanka Journal of Agrarian Studies - Vol. 12, No.2, 2008
7. Sri Lanka Journal of Agrarian Studies - Vol 7, 1st, 2nd Issues, 2008
8. Govi Janatha - Vol. 12 , No 2 2008 October-December
9. Govi Janatha - Vol. 13, Special Issue (37th Anniversary) 2009 February 21
10. Govi Janatha - Vol. 13, 1st Issue 2009 January-March
11. Govi Janatha - Vol. 13, 2nd Issue 2009 April - June
12. Govi Janatha - Vol. 13, 3rd Issue 2009 July - September
13. Govi Janatha - Vol. 13, 4th Issue 2009 October-December

The unit participated in the following exhibitions during the period concerned:

1. *"Dayata Kirula",* BMICH, February 4-9
2. Agriculture Livestock and Fisheries (SMEDX) 2009, BMICH, November, 20-22.

STAFF POSITION AS AT 31ST DECEMBER 2009

	Position as at 31.12.2008	**Termination, Resignation During the year**	**Appoint-ment**	**Position as at 31.12.2009**
Director	01	-	-	01
Deputy Director (Research)	01	-	-	01
Head of Division	04	01	-	03
Research Staff	27	05	06	28
Administrative Staff	07	01	-	06
Senior Staff of Library	02	-	-	02
Data Development Unit	01	-	-	01
Computer Unit	02	-	-	02
Publication Unit	01	-	01	02
Statistical Staff	20	01	-	19
Technical Staff	01	-	-	01
Clerical, Secretarial & Parallel Grades	52	04	03	51

Operative & Allied Grades	36	01	02	37
TOTAL	**155**	**13**	**12**	**154**

STAFF DEVELOPMENT

Post-Graduate Degree Programmes

The following Staff/Research Officers were engaged in post-graduate studies

Mr P C J de Silva	-	M Sc in Human Resource Management at the Huazhong University of Science and Technology (from 2007 to 2010)
Mr W H A Shantha	-	M Sc in Environmental Science and Technology Faculty of Agriculture University of Ryukyus, Japan (from April 2008 to March 2011)
Mr M D L Senarath	-	M Sc in Information Technology Department of Information Technology University of Moratuwa (from September 2008 to August 2009)
Ms M K N Damayanthi	-	M Sc in Public Policy and Governance North South University Dhaka, Bangladesh (from August 2009 to July 2011)

Participation at International Training Programmes/ Seminars/ Workshops/ Conferences/Meeting etc

Mr V K Nanayakkara – Director attended the Third Regional Policy Dialogue (RPD-3) of CIRDAP held in Langkawi, Malaysia from April 27 to 30, 2009.

Mr J K M D Chandrasiri – Research Fellow attended the Regional Training Programme on Rural Technologies for Inclusive Rural Growth held in Hyderabad, India from May 25 to 3 June, 2009.

Mr M A C S Bandara – Research Officer attended the Regional Study Visit-cum Training Programme on Innovative and Best Practices in ICT and GIS in rural Development held in Hyderabad, India from June 15 to 24, 2009 .

Dr L P Rupasena – Deputy Director (Research) attended Twenty-Fifth Meeting of CIRDAP Technical Committee (TC-25) held in Teheran, Iran from July 25 to 29, 2009.

Mr M M M Aheeyar – Research Associate attended the 12th International River Symposium held in Brisbane, Australia from September 20 to 24, 2009.

Mrs K Y P Weeraratne – Assistant Librarian attended the SAARC – Advance WINISIS Programme for Library and Information Professionals held in New Delhi, India from December 7 to 12, 2009.