THE PARADIGM SHIFT THROUGH CIVIL-AGRONOMY: A NEW OUTLOOK OF AGRICULTURAL EXTENSION

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ABSTRACT

Agricultural technology that increases aggregate agricultural output, alone, has not helped the poor to raise their living standards. The lack of access to resources and services and powerlessness in their decision-making process restricted in upgrading their socio-economic status in the nation. Unless poverty is significantly reduced, the gap between food production and need will be much greater. The study adopted an investigation to retain the holistic and meaningful characteristics of real-life situation through case study method that adopted theoretical sampling to assess qualitative aspects in the process of extension and rural development. Civil-agronomy means an inclusion of the organised poor into the concept of agricultural extension in the sphere of civil society. It further introduces the use of poverty profile in agricultural extension so as to meet socio-economic-cultural diversity of problems faced by rural communities. The paper suggests avoiding strategies, which compel the extension agent to work only for crop-based farmer organisations whose mission is to reach national production targets in the developing countries. Finally, it proposes the extension agent to work hand in hand with the socially oriented organised poor who work on productivity improvement goals of resource poor areas in the process of agricultural and rural development. In essence, it is inevitable that the mission of the extension should reflect a poverty reduction bias.

KEY WORDS: Organised poor, Poverty profile, Technology development

INTRODUCTION

According to the Living Plant Index (LPI), the Earth has lost more than 30 % of its natural wealth since 1970 (DFID, 1999). Furthermore, DFID (1999) reveals that in developing world not only can yields of wheat, rice and vegetables suffer by 40 % or more because of pollution from traffic and industry but also the food can be measurably less nutritious. As a result, is it advisable to think that there is little scope for increasing agricultural output by means of expansion of cultivated land in the world agriculture? Although it is very unevenly distributed, 1.8 billion hectares of land are not yet taken for agriculture in Sub-Saharan Africa, Latin America and the Caribbean regions (IFPRI, 1995). The developing countries as a whole, excluding China, cultivate crops in approximately 760 million hectares. It is also stated that of this extent some 2.5 billion hectares carry rainfed crop production potential of varying productivity levels. Because, it bears characteristic features of risk proneness (suffering particularly from droughts, flash floods, crop losses, malaria and the like), resource poorness (deforestation, problem soils, lack of drinking water, etc) and complexity in development problems of agricultural practices. As a result, tens of millions are deprived and marginalised each year through political, economic and physical disasters in these areas (Chambers, 1997). In essence, O'Flynn (1984) states that world's poor are situated in the equatorial regions in countries where climate and environment cause a restriction in the levels of food production. The world agricultural growth rate has been slowing down from 3.0 % per year in the 1960s to 2.0 % per year in the

period 1980-92 and would continue to go further down to 1.8 % per year in 2010 (IFPRI, 1995). The net cereal imports of the developing world continue to expand and the aggregate cereal self-sufficiency ratio might decline to 90 % in 2010 from 98% in 1961 (Alexandratos, 1995). In addition, Van den Ban and Hawkins (1996) report that in the next decade India will have to increase its cereal production by 30 % or over 50 million tons in the rainfed soils. It shows the demand to select different strategies to address these problems by deviating from the present policy priority placed on irrigated farming to the improved rainfed farming systems towards sustainable agriculture. Relatedly, Keeney (1997) stresses that it is a must to make changes in the world's food growing patterns and approaches using holistic principles in the process of development of agricultural systems.

Overall, the slow-down of growth in agricultural production leads to make a conclusion that the absence of poverty-reducing economic growth, which is associated with agricultural development failures in almost all developing countries, carries high economic dependence on agriculture. Such failures reflect worsening situations of natural resources, environmental degradation, inadequate attention to local-specific technology development, loss of biological diversity and stagnation in diffusion of capital-intensive innovations in rural areas. Relatedly, alternative strategies for the conventional world agricultural extension practices are necessary to increase productivity while maintaining the sustainability of rainfed farming systems. It has to be accompanied by continuous use of local knowledge and skills, which should be co-ordinated and networked with different stakeholders. Ratnasabapathy (1999) alarms on a new worrying invention of "Terminator Technology" which is designed to genetically switch-off a plant's ability to germinate a second time. This could cost poor farmers in the developing countries who produce food for more than one billion people. They cannot afford to buy seeds every growing season and seed collection is a vital aspect in their production systems.

EPISTEMOLOGY

The objective of this paper is to indicate some socio-economic realities of rural agricultural societies in order to provide access for the paradigm shift towards non-directive form of extension in agriculture. The paper follows conceptual form of analysis than an empirical data presentation so as to initiate socially-biased thinking on technically-oriented approach of agricultural extension.

The paper argues for the consideration of livelihood strategies of the poor in the process of agricultural extension. In this vein, it presents qualitative data extracted from different case studies and secondary data sources in order to strengthen its argument. The protection of resource base, improvement of off-farm and non-farm income sources and capacity building of the poor are highlighted by going beyond the conventional farm boundary in agricultural extension. By so doing, rural poverty profile is introduced to justify the validity of the civil-agronomy dimension for the paradigm shift in agricultural extension.

The participatory rural appraisal methods were adapted throughout the study. In order to highlight the diversity of different rural societies the study purposely selected two villages, namely Keliyawelena (from the South) and Maraakulama (from the North) in the dry zone of Sri Lanka, for its primary analysis (i.e. the use of transact walks, wealth ranking exercises, focus-group interviews, participant observations). Indeed these two areas represent a microcosm of the incidence of poverty (e.g. presence of poverty alleviation programmes of "Janasaviya" and "Samurdhi") and agro-based nature (i.e. traditional village-land and water systems) of Sri Lanka (Word Bank, 1995).

TECHNOLOGY TRANSFER AND SOCIO-ECONOMIC DIFFERENCES

Within the conventional paradigm of agricultural development, extension services implement programmes which contain production targets in the process of technology transfer. The extension agent who works mainly on national crop targets, with the assistance of other colleagues, approaches well-to-do or progressive farmers so as to increase agricultural output mainly on irrigated land of some 120 million hectares in the world (IFPRI, 1995). In this strategy, rural population is categorised according to the adoption rate of an innovation developed outside the rural community. Without considering its applicability to local ecological situations, economic status and social acceptance of an innovation, the extension agent evaluates his/her target audience on the innovativeness of technical messages. As a result, socio-economic-political differences in rural communities are completely ignored in the process of agricultural extension. It further causes to widen the gap of the rich and the poor in rural agricultural communities.

The management of resource base for long-term benefits and exploration of off-farm or non-farm income generating sources for the development of the poor hardly appear in rural and agricultural development plans. In addition, use of different socio-economic groups and pressure groups in extension is merely neglected. However, the formation of societies to achieve the government policy requirements is widely implemented in the conventional process of extension. For instance, farmer organisations formed under the directives of the Agrarian Services Act No.58 of 1979 (The Government of Sri Lanka, 1979) were biased towards irrigated farmer communities in Kosgama village in the Colombo district. No initiatives have been taken to integrate or network farming interests of people's organisations, which are dominated by majority of the rural poor with local development goals (Personal communication). It is well recognised that the poor cultivators are not homogeneous in terms of income levels, socio-economic sphere and socio-psychological aspects in the agricultural production process. New technology introduced through the green revolution concept was thought to be the universal answer in increasing crop production and in turn to raise incomes of the poor in rural communities. On the contrary, it is more important to identify characteristics of the poor in improving their livelihood strategies in the overall development process (Ramprakash, 1993). For instance, Chambers (1989) states that survival based on stable subsistence, security based on assets and rights and, self respect based on independence and choices are important concerns of the poor.

AGRICULTURAL TECHNOLOGY AND POVERTY PROFILE

The paper introduces poverty profile in studying different qualitative aspects of rural poor cultivators who dominate in rainfed farming systems in the developing countries. Now the question arises: what is poverty profile? It is an analytical device for summarising information on the sources of income, consumption patterns and living conditions of the poor (World Bank, 1993). For example, Fig.1 illustrates a qualitative profile of poverty in two risk-prone and resource-poor agricultural based villages in the dry zone of Sri Lanka.

First, wealth-ranking exercise shows the similarity in poverty share of the two villages. In the context of influential forces, caste plays a vital role in social groupings, traditional bonds and formal institutions, which influence many socio-economic-technical decisions in rural farming. Ecological and wild life influences, mostly in negative form, affect the rural poor to restrict their levels of income. The poor conditions of infrastructure facilities in these two villages have caused to marginalise the poor being exposed to outside communities in the process of overall development.

Second, household environment depends mainly on the availability of natural resources in their localities. The status of common amenities and housing conditions are not at satisfactory levels. As a result the poor are categorised into a socially less influential class by their progressive peers in these villagers. Additionally, long-term investment on homestead development is merely neglected or ignored by the poor. This situation is aggravated among households headed by women. Furthermore, expenditure on food basket is high, as they do not have food supply from their homesteads. Power holders in these societies use the poor, who do not have viable sources for food, employment and recreation for illegal or socially negative activities, which in turn aggravate the status of poverty among these poor groups.

Third, rain water-based farming dominates among the poverty share that stagnates the economic status in many aspects. Additionally, off-farm employment opportunities are low or not present at all. The level of unemployment and underemployment is at an increasing trend. Thus, the poor have low household assets but high liabilities in performing their day to day household activities.

Fourth, until the recent past, opportunities for the development of their human resource capabilities are neglected or not recognised. The introduction of poverty alleviation programmes by the Government and Non-Government Organisations paves the way to mobilise the poor to work on common goals of the development of socio-economic-political-technical status of the livelihood. Furthermore, development of grass-root level organisations helps to establish bargaining power to interact with the work of development agents at the village level. Thus their goals of development shall be redefined to address the vulnerability of rural livelihood by means of advancing the concept of civil society.

KELIYAWELENA		MARAAKULAMA
	POVERTY	
18.7% <	**SHARE IN THE VILLAGE**	>13.7%
	INFLUENTIAL FORCES	
High	Caste differentiation	None/Low
Low	Traditional/Social bonds	High
High	Agroecological risk	High
High	Risk of wild animals' hazards	High
Fair	Contacts with urban areas	Low
Low	Access to information & services	Very Low
	HOUSEHOLD ENVIRONMENT	
Already exploited	Availability of natural resources	Few and restricted
Far	Distance from common amenities	Lack & far
Poor	Housing conditions	Poor
Fair	Presence of women head	High
Poor	Long-term homestead dev. measures	Fair
High	Expenditure on food	High
Fair	Expenditure on illicit beverages	Fair
	ECONOMIC STRATEGIES	
Farming	Main livelihood strategy	Farming
Rainfed/ Chena	Dominant farming system	Rainfed/ Chena
Encroached/ temporary	Land ownership	Encroached/ temporary
Seasonal labourers	Potential for off-farm employment	Seasonal labourers
Very low	Potential for non-farm employment	Low
High	Level of un/under employment	High
Low	Ownership of consumer durables	Low
	HUMAN RESOURCE CAPABILITIES	
Low	Vocational skills other than farming	Nil
Poor	Educational status	Poor
Fair	Interaction with outside agents	Low & far
+ve trend	Emergence of people's organisations	+ve trend
Vulnerability <	**MAJOR WORRYING FACTOR**	> Vulnerability

Fig. 1. Qualitative profile of poverty within the poverty groups of the Keliyawelena and Maraakulama Villages (Ranasinghe,1997)

Hence, poverty profile opens access for an in-depth study of different socio-economic situations of the rural poor in order to deliver local-specific information while understanding the status of the poor in the process of agricultural extension. It paves the way to search off-farm and/or non-farm income sources and also to move

towards the betterment of whole-farm economy instead of working only with crop-based practices in rural agriculture. It is completely different from the existing tradition of working on technology transfer activities for the advancement of production-based agricultural programmes.

CIVIL-AGRONOMY FOR THE PARADIGM SHIFT

The study on qualitative aspects of the rural poor paves the way to explore available knowledge, technology, local-specific know-how and resource-base for the overall benefit of target audiences in developing skills and the economy of disadvantaged people in rural agricultural societies. On the contrary, conventional agricultural extension services, which primarily work on transfer of technology paradigm hardly, pay attention towards this end but work on crop targets to meet national food requirements. It is, however, essential to direct its mission in increasing productivity and working in collaboration with other institutional stakeholders - government organisations, non-government organisations and people's organisations in order to be effective in growing civil society. Towards this end, for example, different grassroots-level extension agents (who work on food crops, coconut, livestock and export oriented crops) networked their integrated extension efforts with organised small community groups in the Katana area (Athgaala, Dalukotuwa and Kochchikade villages) in 1997, under the Second Agricultural Extension Project funded by the World Bank in Sri Lanka (Personal communication). Afterwards, this qualitative value in rural extension was used to design and implement the pilot project launched in the Gampaha district, namely the Intensive Crop-Livestock Integrated Farming, in 1998.

CIVIL-AGRONOMY IN CIVIL SOCIETY

The conventional extension agent, by tradition, exercises his/her authority on education (one-way and/or two-way communication processes), service (technological skills and/or support actions) and work (working with ad-hoc groups or farmer training classes) dimensions of extension under varying levels (Bhatanagar and Desai, 1987; Swanson and Claar, 1984; Röling, 1988). In reformulating the concept of extension, an inclusion of civil-agronomy dimension as the fourth dimension of the concept of extension (in addition to the above three dimensions) paves the way to make the paradigm shift in agricultural extension (Ranasinghe, 1997). It emphasises the necessity of involvement of the organised poor in the process of extension while addressing poverty related problems in rural agriculture so as to face some negative aspects of open economic policy regulations.

The poor are generally concentrated in resource poor areas in rural villages (Chambers, 1989). Thus, civil-agronomy dimension creates opportunities for the extension agent to do thoughtful and creative work of extension in high as well as low potential areas. The extension agent can work in risk prone environment and act on resource poor conditions to generate new ideas and actions in association with the organised poor. In this shift, it is essential to invite the poor who scatter over different places in a village to form their organisations. Productivity improvement goals based

on management of village resource-base for long-term benefits would be the primary mission of agricultural extension. As a result technical change would always be an outcome of Indigenous Technical Knowledge cum scientific knowledge so as to develop local-specific know-how and innovations in the process of rural and agricultural extension. Owing to this shift, the path of innovations would be in a "circular form" as opposed to the traditional form namely "the top-down" generated at the research laboratory in the transfer of technology paradigm. This paradigm shift guides the extension agent to search for on-farm or off-farm or non-farm requirements of different target audiences in rural communities. The civil-agronomy dimension welcomes innovations generated at various places and sources which carry socio-technical-economic-cultural-political answers for the overall development of the poor. Furthermore, Keeney (1997) says that research needs are cross disciplinary and demand support from a wide array of technical and social sciences as well as end-users and policy makers. Thus, coverage of extension is diverse and the organised poor considered to be the primary target-audience. By so doing, it is expected to convert the conventional extension service into a more dynamic process of extension within the growing civil society and open economies in the developing countries.

Upon this paradigm shift the extension service cannot operate in isolation. Different partnerships have to be developed and various networks are to be created with the collaboration of different stakeholders (government organisations, non-government organisations, private sector, peoples' organisations, etc) in the agricultural and rural development process. But working with organised poor is a new idea for the conventional extension agent. The organised poor have to be approached by continuous qualitative investigations in contrast to the ad-hoc quantitative investigations. Because, the development of human resource capabilities of the poor is subjected to a dynamic process along with the development of group spirit, culture-specific management styles and group-mission in the process of rural development. In this process, the extension agent can effectively assist the technology development process of the poor by making coalitions of progressive farmers and poor cultivators towards sustainable agricultural goals in civil society. By now, the focuses on poverty issues have become a vital aspect in development goals in many agricultural and research organisations. For example, the United Nations Development Programme (UNDP), International Fund for Agricultural Development (IFAD) and International Rice Research Institute (IRRI) have already given priority for civil-agronomic issues on the development goals of growing civil society (Personal communication).

CONCLUSIONS

In the present context, the extension agent who works with progressive farmer organisations, involves mainly in irrigated agriculture where the rich dominate in the decision making process of agricultural extension. In this sphere, the poor who do not have bargaining power to influence decisions, passively participate in the process of extension having no means to find alternatives for capital-intensive technology in agriculture. They hardly receive sustainable technological input, which can be practised

under rainfed, resource poor and risk prone situations. This situation isolates poor cultivators being involved with conventional extension services. On the contrary, civil-agronomy dimension appreciates the development of bargaining power of the poor by means of "organised form" which makes the paradigm shift to work hand in hand with rural poor cultivators for the overall betterment of rural and agricultural extension.

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