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Contents

Valuation of Conservation Commodity of the Sinharaja Forest: Towards Total Economic Value
:/ *E.R.M. Ekanayake and P.Abeygunawardena*, 1-22

[[ABSTRACT](#)] [[FULL PAPER](#)]

Factors Influencing Peripheral Villager Dependency on Forest Resources Use in the Knuckles Forest Range :/ *H.M. Gunatilake*. 23 -34

[[ABSTRACT](#)] [[FULL PAPER](#)]

The Role the Economists in Agricultural Research :/ *T. Jogaratnam* 35 -42

[[ABSTRACT](#)] [[FULL PAPER](#)]

Demography, Development and the Environment :/ *Nimal Sandaratne*, 43 - 59

[[ABSTRACT](#)] [[FULL PAPER](#)]

Shared Control of Natural Resources (SCOR): An Integrated Watershed Management Approach to Optimize Production and Protection :/ *C.M. Wiyayaratne*,
60 - 97

[[ABSTRACT](#)] [[FULL PAPER](#)]

The Role of the Economist in Agricultural Research

T. Jogaratnam*

ABSTRACT

The question of a research agenda in Agricultural Economics can be approached in different ways. One is to develop a framework broad enough to encompass the goals and ethical and value premises within which the evaluation criteria and priorities can be developed. Another is just to follow Jacob Viner's dictum that "Economics is what Economists do". In this paper some of the perceived problems and areas of work involved are set out. Given the changing perspectives, the emerging issues, the changing directions of research, and the multi-faceted problems that developing countries and the Economists working in such environments are grappling with, the challenge facing Economists is not to be bound by rigid rules and archaic procedures, but be alive to the problems that, in the final analysis, impinge on the quality of life of the millions living in these countries. One must also be alive to the criticism levelled at Social Scientists of the third world, namely that they work within a framework of reference imposed by developed country concepts and models, leading to agendas imposed by outside agencies and thus very often irrelevant to the needs and requirements of the third world.

Introduction

It has been observed that Agricultural Economists, as well as other Social Scientists, are not adequately involved in most agricultural research programmes. While it is almost trite to say that research and innovations resulting from it must be economically profitable and socially acceptable, Economists become involved mostly,

if at all, in ex-post evaluations and have little say in the planning and design of research. Much emphasis is given nowadays to interdisciplinary research on problems crucial to agricultural growth and development. However, the coordination and integration it involves have, for the most part, been between the physical and biological sciences. This lack of collaboration and integration may be due in part to an inadequate

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understanding of the role of the Agricultural Economist and in part to the absence of strong disciplinary programmes in Economics which could contribute effectively to interdisciplinary dialogue. The late development of the Social Sciences, the fact that the Social Sciences concerned themselves with human behaviour and human institutions whereas the Natural Sciences in agriculture dealt with plants and animals perhaps accentuated the division. It has also meant, especially in Sri Lanka, poor representation in the higher levels of research management. Consequently, Agricultural Economics has been treated as a junior partner or as an appendage to established research divisions, poorly staffed and inadequately trained. This paper addresses the problem of developing Agricultural Economics research in the country, so that it assumes its proper role and contributes to the goal of agricultural research, namely, improving the welfare of all those dependent on agriculture.

Agricultural Research, Technology and Development

The goals of economic development can be spelt out in terms of growth, equity and security. In recent years, with increased interest in the preservation of the environment, sustainability is also a major objective. Unfortunately however, we

still lack a clear understanding of the process of development and as a consequence there is also a difficulty in enunciating a clear agenda of research. Development thought has progressed through several phases, with the early post-World War II emphasis on growth and trickle-down effects giving way to concerns with distribution, basic needs, social parameters and sustainability. There, however, seems to be some consensus that the springs of development are in some way connected with technology and institutions. While most people would agree that both technological advances and institutional reform are necessary for development, there is considerable debate in assigning priorities. T.W. Schultz drew attention to the so called "non-conventional" inputs in securing increases in productivity. Those who have followed in his footsteps have authored numerous studies which document the importance of technology in promoting rapid increases in productivity. Technological change is no longer held to be exogenous to the process of economic development. It is now held that it is only through advances in technology, such as through new and better varieties of seeds and planting material, new husbandry techniques, more efficient sources of power, cheaper and better plant nutrients, and more effective control of pests and diseases, that significant increases in productivity could be

achieved. This paper devotes attention to the role of Economists in agricultural research institutes which are primarily commodity-oriented. In consequence, little or no attention is paid to the requirements of constitutional research. This should not be taken to downplay the need for research in this area.

Empirical studies suggest that returns to research have in the past been high. Internal rates of return of the order of around 40 percent have been cited in the literature. Agricultural research can help secure increases in agricultural output, reduce the quantum of resources used, change product characteristics and reduce production risks. The contribution of agricultural research to economic development lies in bringing about changes in one or all of these elements and securing increases in agricultural productivity. The concept of productivity growth implies not just an increase in production but changes in the ratio of output to input. While the new technologies may be described as product-specific or resource-specific, they also take the form of improved production systems and improved crop rotation methods. The new technologies through their impact on agricultural production, resource use, distribution or equity, nutrition, as well as employment, incomes and the environment contribute to overall agricultural and economic

development.

The Allocation of Resources to Research

While investment in research has a high pay-off, the problem is that resources are scarce and agricultural research has to compete with other demands for public spending. Thus decisions need to be made on research priorities. Numerous attempts have been made to formalize the research allocation criteria, but as Ruttan (1982) points out, no resource allocation system can avoid making judgements about two major questions. These relate firstly, to the possibilities of advancing knowledge or technology if resources are allocated to a particular commodity, problem or discipline, and secondly, to the value to the society of the new knowledge or the new technology if the research effort is successful. It is argued that answers to the first question are best left to research administration and planners and that answers to the second require analytical methods familiar to the Economists. In a different vein, Per Pinstrup-Andersen (1982) suggests that decisions regarding priorities within goal-oriented agricultural research be, generally speaking, focused on a specification of the desired technology and choice of methods to be used in obtaining such methodology, with the latter best decided by the researchers

themselves. In specifying the desired technology, decisions require to be made on (1) the commodity or resource for which the technology is being sought; (2) whether the technology should facilitate improved efficiency; changed commodity characteristics, reduced production risk or some combination of these; the production environment for which technology is being sought; the constraints that the technology should remove; establishing the cost and time requirements; and estimating the probability of success of the various lines of research. Satisfactory answers to such questions require close collaboration between natural and Social Scientists.

The Role of the Agricultural Economist

Agricultural research has been viewed primarily as a means of promoting economic growth. Although this narrow view of a production-oriented goal has been criticised, much of agricultural research continues to be directed at increasing productivity. Such increases are secured most often through breeding programmes resulting in improved seeds and planting materials. Complementary work in agronomy and related fields have served to enhance the potentials of the new varieties. Agricultural Economists at first were largely concerned with studying enterprise

costs and returns with a view to determining optimal input use and enterprise combinations. The emphasis was thus at the micro-economic level. It was not long before Economists realised that profitability would also be affected by wider issues affecting the economy as a whole, such as input and output prices, marketing and credit, and demand and supply conditions.

Where the improved technology was concerned, Economists were mainly concerned with investigating the economic feasibility of new technologies. The distributive implications of improved technologies also began to be studied. It was, however, not clear whether the results were being transferred to the Natural Scientists at the design stage of research. Economists however were concerned that much of the technical data generated by researchers did not lend themselves to economic analyses. This highlighted the need to associate Economists at the design stages of research agendas. With increasing interest in farming systems research and crop diversification, multiple-cropping and the like, Economists began to work in interdisciplinary groups.

One should not ignore the significant work of Economists in the area of economic growth and development. The processes of growth and development and of

technical change and their implications were highlighted. The economic and social dimensions of increased agricultural production probably filtered into and provided a feedback to the Natural Scientists. In more recent years, Economists have begun to address themselves to problems of the environment and adopting the tools of analysis to problems of environmental degradation and pollution.

Ruttan (1982), identifies three major roles, especially in relation to Economists working in agricultural research institutes. These relate to the evaluation and dissemination of the new knowledge and technology developed by the institute, the analysis of programmes and issues of research resource allocation with the Economist playing a key role at the management level, and, finally, research on issues of personnel and professional interest with little direct input into the institute's programmes. One could perhaps identify a fourth role, namely that of data collection and analysis to service other programmes with the Economist occupying a minor position and no independent recognition in the institute's hierarchy.

Raj Krishna (1971), in a different context, identified priorities for Agricultural Economics research in general. These include the collection of farm level data on input-output

relations on the supply side and demand and outlook studies on the demand side. Such information provides the basis for assessing rates of technical change and projecting output. It enables the evaluation of the process of growth and development and provides the framework for policy analysis, especially in terms of input and output prices. Also highlighted were the analysis of projects, issues of equity and employment, and the interaction between the agricultural and non-agricultural sectors.

The increasing interest in interdisciplinary work is highlighted by work done in international research institutes. The yield constraints research program, first developed at IRRI and with which local researchers were also involved, is cited as one of the best examples of interdisciplinary research, exploiting the professional complementarities existing in research institutes (Ruttan 1982). Similar research programmes involving close collaboration and integration of different research disciplines have been undertaken at other international research centers (Per Pinstrup-Andersen, 1982). Multidisciplinary research teams now work on cropping and farming systems, including issues of farming intensity, agro-forestry, environment, low input farming and alternative agriculture.

A major area of concern to Agricultural Economists is the allocation of resources in research. Allocative decisions require information on projected future demands and their elasticities; projected resource availabilities and their price elasticities; constraints to increased production; the structure of the agricultural sector; cost and time requirements; and the probability of success of each of the research strategies (Per Pinstrup-Andersen, 1982).

A Research Agenda in Agricultural Economics

Research can be categorized in many different ways. One such classification would be to group research into (1) descriptive studies, (2) evaluation studies, (3) policy studies, (4) discipline-oriented studies, and (5) basic or theoretical studies. In agriculture, much of the research undertaken is of an applied nature, commodity-oriented and directed at "growing two blades of grass where there is now one". In Agricultural Economics one could also distinguish between macro-level and micro-level research. At the macro-level, major attention is given to exploring the impact of growth and development on society. Micro-level studies operate largely within the framework of the "efficient but poor hypothesis" and are largely centered around the economics of production and resource

use at the enterprise and farm level.

Agricultural Economics research in Sri Lanka is now firmly established at the Department of Agricultural Economics and Extension, University of Peradeniya; the Division of Agricultural Economics and Planning, recently renamed the Socio-Economic and Planning Center, Government Department of Agriculture, and the Agrarian Research and Training Institute. The Economics Research Department of the Central Bank of Sri Lanka has also undertaken studies in this area. An evaluation of the relevant priorities and the impacts and benefits flowing from such research are still to be done and hopefully will form the subject of a follow-up study. The Agricultural Faculties of the University of Ruhuna and the Eastern University are still in their infancy. Small units are also attached to the Tea, Rubber, Coconut, Sugarcane and Veterinary Research Institutes. Given the limited staff and facilities, decisions need to be taken on the scope and breadth of research that should be undertaken. It is suggested that the following areas be given attention, especially in the early stages of development.

(1) **Descriptive Studies:** Basic information relevant to a sector, industry or commodity, preferably by agro-ecological areas, must be collected. Sometimes also referred to as bench-mark studies, the studies on

major colonisation schemes and village tanks carried out by the Peradeniya University's Department of Agricultural Economics, the cost of production studies of the Government Department of Agriculture and the Agrarian Situation Studies of the ARTI performed this function. These, however, were carried out at the micro-level, but provided information on resource availabilities and resource use and also generated input-output data. These should be supplemented by macro-information pertaining to the structural characteristics of production, consumption and trade and the role of the sector/commodity in the economy. Such information lays the foundation for analytical studies. Here the aim is to discover causal relationships between variables and to predict behavioural patterns. Both cross-sectional and longitudinal studies have a role to perform in such descriptive/evaluative studies.

(2) **Evaluation studies:** These address themselves mainly to the socio-economic impact of the new technologies and are thus ex-post in nature. But important in terms of setting research priorities are constraints studies and yield-gap analyses.

(3) **Policy studies:** These are an important area of research given the widespread nature of government intervention in agriculture. The

impact of government policy measures on production as well as their distributional implications must be assessed. Estimations of income and price elasticities are a major component of such studies.

Other Areas

As can be inferred, Agricultural Economists have concerned themselves mainly with problems of productivity, efficiency and distribution, with a view to increasing the productive capacity of the resources used in agriculture. But as Ruttan (1982) and Dahlberg (1986) emphasise, the problem of externalities is assuming greater importance, especially given the current concerns with the environment. Thus a strong case is made for broadening the research agenda to include impacts on health, nutrition, environment etc., that is the externalities which are very often ignored or bypassed in economic analysis.

References

- Arnon, I.(1989). *Agricultural Research and Technology Transfer*. Elsevier, New York.
- Dahlberg, K.A.(Ed). (1986). *New Directions for Agricultural Research*. Rowman and Allanheld, New Jersey.

- Pinstrup-Andersen, Per. (1982). *Agricultural Research and Technology in Economic Development*. Longman, London.
- Raj-Krishna. (1971). "Priorities for Research in Agricultural Economics". In A.H Moseman (Ed). *National Agricultural Research Systems in Asia*. The Agricultural Development Council, New York.
- Ruttan, V.W. (1982). *Agricultural Research Policy*. University of Minnesota Press, Minneapolis.
- World Bank (1981). *Agricultural Research: Sector Policy Paper*. Washington, D.C.