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CRITICAL ROLE OF AGRICULTURAL ECONOMICS IN AGRICULTURAL EDUCATION, RESEARCH AND EXTENSION

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Introduction

With the increasing importance and emphasis on Agricultural Economics, questions have been raised on the economic viability of some of the basic recommendations and approaches to agricultural production that has taken place over the last decade or more. With the price of agricultural inputs increasing due primarily to inflation that is rampant in the World and particularly in Asia, as well as, the anticipated inflation due to the oil crisis and other factors, attention is now being focussed as to how a farmer should gear his production in the most economic manner.

Economics has been called by many, as, "common sense made complicated". It is hard to determine how complicated this has been, but certainly economics is common sense. If one draws a parallel in his mind as to the entire question of ones own personal income, we are fully aware as to how meticulously we budget our expenses and tailor it to our own incomes. This is exactly what is attempted in presenting the economic analysis as far as agricultural production is concerned.

The areas that have to be subjected to an economic analysis in agriculture can be identified as follows : (1) the research level, (ii) the production level.

(i) At the Research Level

The basic approach in most agricultural research organisations is the development of "improved technology". Assuming that the technology used by farmers at present is not optimum, attempts are made to improve this. With this goal in view, researchers the World over have attempted in developing new high yielding varieties which are adaptable to the varying and sometimescomplicated natural environments. Using Sri Lanka as an example, over the last two decades, researchers have bred new and improved existing varieties in Paddy and Other Field Crops, which could be grown under conditions that are specific to particular agro-ecological zones. In areas where the potential for increased productivity of land is low, attempts are still being made to provide varieties for them too. With the identifications of the different pest and disease situations, more varietal improvement programmes are underway to eradicate them. As most of these newer varieties need high input and management levels, researchers have spent considerable time in determining these as well.

With the introduction of this "new" technology, what is essentially being achieved is a changing of the farmers envrionment - both physical and economic.

At this point it must be questioned as to whether the farmer is capable of affording this new technology. If the new technology is something that the average farmer in Sri Lanka cannot afford, then it becomes of little use outside of an academic achievement. This is why, at present increasing emphasis is being made to economically evaluate these findings, prior, to being released to the farmer, through the extension personnel. Unfortunately, often times researchers are not aware of the limitations that are faced by farmers, resulting in the production of a number of cultural practices, etc., which are then not acceptable to the farmer.

Let me briefly take an example in the breeding of improved varieties of Rice. I consider that the most logical approach should be as follows :

(a). First, attempt at breeding the most high yielding variety which incorporates the best genetic charateristics available. (This is also true whether it is bred for pest and disease resistence or any other specific factor).

(b). Once the maximum potential has been established, an attempt should be made to subject the variety to different levels of management and inputs, so that an economic optimum can be obtained. In this manner, Economists can help in matching farmer resources with research possibilities. After a series of experiments, the variety that will be released will be acceptable to the farmer, since, it will be something that they can produce with inputs that farmers can afford.

Unfortunately, in Sri Lanka this type of research, oriented at farmer resource availability has not been attempted to any considerable degree, in the past. This has primarily been due to the lack of adequate staff at research stations that should be involved in this type of research. It could also be attributed partly to the myopic or shortsighted view which most researchers have, in terms of priorities in research programmes. However, in the future, it is hoped that this approach will be attempted.

It is important in research programmes that an understanding of the farmers purchasing power be also kept in mind. This involves a feed-back and constant dialogue between research and extension officers and economists.

Though not widely utilised, approaches such as, Cropping Systems programme is the first step in attempting to give a feed-back to researchers, through the economic analysis of the farmers practices

his environment, so that, research can then adopt in such a way that the improved technology meets the farmers needs.

(ii). Production Level

The acceptance of improved technology by farmers depend entirely on the extension programme. While, Economists and Researchers can provide economically optimum varieties that suit the environment of the farmers, the acceptance of such a programme depends to a large degree on the extension effort. It is therefore imperative that the staff involved in extension be also aware of the environment of the farmer, i.e., the resource the farmer has. In order to do this, one accepted approach has been the maintenance of farm record books among farmers, which the extension staff should be able to analyse and understand.

In most Western countries farmers keep very accurate accounts, in fact, some of them are quite sophisticated. Under the Western context it serves two purposes. Firstly, most farmers are literate and have large holdings. Labour shortages are quite common and where available the labour wages are high. Therefore, it is necessary for most farmers to invest in a number of capital items, such as, tractors and in certain instances even harvesters. A record book well maintained, provides them the ability to estimate the profitability of such an investment. Secondly, accurate records have to be maintained due to the stringent tax laws that exist in those countries. The accounts maintained provide both the farmer and the Government an exact account of their income and expenses.

However, under the Asian context, the situation is slightly different. Most farmers have small holdings. (In Sri Lanka over 88 percent of the farmers own less than 5 acres). Consequently, their resources are limited, and therefore, the business enterprise as a whole is relatively small. In a sense, the profitability that the farmers could achieve is fixed. Therefore, trying to pursuade farmers to

accept "messages and package programme" and other such advanced technological issues is rather a waste of time, because in most instances the farmers cannot afford it.

Furthermore, tax laws of most countries do not have wide coverage which makes most farmers pay their dues. For these and a number of other reasons, the accounting system of farmers is quite haphazard. However, from the farmers point of view, it is quite efficient. He personally is aware of his income and of his expenditure.

However, in order for extension personnel to better understand the farmers environment, it is necessary that we sort of coax the farmers to maintain records, since, in that way they are able to understand the farmers economic background. If this background can then be passed to researchers, then a research programme directed towards improved technology can be more successful. Because, as stated earlier a research programme can be adopted accordingly. Therefore, it is imperative that extension personnel have a good understanding of the economic background as well as the physical background of the farmers they are dealing with. Unfortunately, this is lacking in Sri Lanka. Notwithstanding the lack of communication between research and extension personnel, there is also a greater lack of understanding of the farmer's environment by most extension personnel, excepting a vague and sometime hazy generalised picture of farmers in a particular area. Therefore, it is essential that attempts be made through programmes of Extension and Education personnel that they be encouraged to understand the economic rationality of the farmers.

Importance of Agricultural Economics to Agricultural Education and Training

All that is being stated above has now to be viewed within the framework of Agricultural Education and Training. At present, agricultural education and training in Sri Lanka has been more or less confined to the primary school level through the Department of Education, at the University level by the Faculty of Agriculture and at the Farm School level by Department of Agriculture. Additionally, in-service training

programmes are provided to A.OO, A.II and KVSS and other officers in Public Service through the Department of Agriculture. Most of these institutions list courses in Agricultural Economics and Farm Management. What is essentially presented to students are the basic theories that underline economic rationality, such as, demand and supply, production economics and a number of other theoretical concepts. Hardly any practical training is provided to any one of these categories of students. I would at this point try to briefly outline how some of the concepts that I postulated earlier can be incorporated into a training programmes at any one of these institutions. Let me specifically take the in-service programme and farm school programme of the Department of Agriculture.

Students or participants at in-service should be made to be actively involved in programmes that are being conducted by Research, Extension and Economic Divisions. Taking a specific example, the staff at any of the Practical Farm School or Inservice Training Institutes should be involved in field observations of programmes conducted on farmers fields. For example, officers at In-service Training Institute at Maha-Illuppallama should be actively involved in the Cropping Systems programme at Walgambahua, where they try to understand what the research programme is, examine records that are being maintained by the agricultural economics programme, help maintain them, tabulate them and analyse them. Similarly, it could be at Bindunuwewa. At Kundasale, the staff should first get familiarised with some of the programmes, for example, in CARI or with the Resource Capability Study, most of which are trying to better understand farmers problems or generate improved technology. This is different from casual visits to these Stations or sites or listening to Research Officers speaking on them. In this manner, the officer involved in training field staff will first have an understanding of the actual problems. When field staff come for Inservice programmes they should also be encouraged to go to the field where farmer based research is being conducted or record books maintained, to understand farmer environment and make them actively look at this data. In this manner those being trained also get the feel for

what is being done. Better understanding the problem and even the process of dialogue with those in charge of the programme are able to adapt a particular approach or concept to their particular environment in the field. Students who undergo one or two years programmes at Farm Schools should be made to visit farmers, maintain farm record book and analyse them and thereby actually understand the farmer's environment. It is only then, that a feed-back can be provided by those in the field, farmers or students who will eventually get to the field of research. Additionally, they can also see how farmers can be encouraged to accept improved technology.

To summarise what has been stated, I would list them in the following manner :

(a). A conscious effort must be made by researchers and extension personnel and those involved in Education and Training programmes to better understand the farmer's environment.

(b). A constant dialogue and feed-back should be maintained between all these three categories of officers. Results of socio economic surveys and other such economic information be made available to them.

(c). Participants at In-service training programmes or students in the different Farm Schools should be encouraged to understand field level problems by examining farm record books that are being maintained and economic data that is collected in Adaptive Research programmes.

If this approach can be developed , you can be sure that efforts to identify production in farmer's fields can be better achieved in a systematic manner rather than what is being done at present.