AGRICULTURAL EXTENSION IN SRI LANKA

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A. T. Mosher states that "the central objective of an agricultural extension service is to help farm families acquire new knowledge and skills along those lines of their current interest and need which are closely related to increasing farm production and to improve the physical level of farm families." On the basis of this definition he identifies six roles for an extension service to play:

1. help farmers to master new information and develop new skills;
2. help farmers gain access to new resources (such as credit, marketing, agro-chemicals and fertilisers) which are not done effectively by other agencies;
3. take research results to farmers;
4. help farmers through the difficult period of introduction of a new technology or practice;
5. train farmers in decision making and
6. push production of a particular crop or crops in order to achieve national goals of production.

The Extension Service in this country has been built-up over the years as an evolutionary process starting with one or more of these roles and gradually absorbing all of them as time progressed. A historical review of this development is presented below.

INTRODUCTION

History records that during the times of the ancient kings there was a flourishing peasant agriculture in this country under an efficient and well managed irrigation system. With the breakdown of this vibrant agricultural economy after a series of foreign invasions the earliest recorded attempts to help the peasant farmers commenced around 1880.

The Portuguese and the Dutch did not show any interest in the development of agriculture in the colony. The British were interested in developing plantation agriculture and neglected the production of food until very much later.

From about 1880, Agricultural Instructors, with a two year training in agriculture were appointed to work directly under the Government Agents of the provinces. The responsibility for agricultural extension was vested with the Government Agents. The Government Agents, whose main interests were the collection of revenue and the maintenance of law and order, had very little time to expend on the development of peasant agriculture. They also had no training in agricultural science. There were only four Agricultural Instructors at this time working in the field. Under these circumstances it is not surprising that the development of peasant agriculture received scant attention.

It was only in 1904 that any real attempts were made to resuscitate peasant agriculture with the establishment of the Ceylon Agricultural Society. The objective of establishing this society was to get at the native cultivator, especially the villagers, by means of the wealthier local land owners and planters, and to bring to anyone who wished it the experience and knowledge of the various branches of agriculture possessed by the Peradeniya staff, the Government Veterinary Surgeon and other officials, and as far as possible also that of various experienced planters and agriculturists belonging to the Society.

Extension work thereafter was undertaken by the Ceylon Agricultural Society in association with the Government Agents. It was only in 1921 that the staff of the Ceylon Agricultural Society was absorbed into the Department of Agriculture.

1912–1919

A significant event was the establishment of the Department of Agriculture in 1912. Prior to 1912 there was a Department of Royal Botanical Gardens located at Peradeniya made up of divisions of Mycology, Entomology, Chemistry and the Gardens. The Royal Botanical Department also managed the Experiment Station at Peradeniya and the Cotton Research Station at Maha Illuppallama. In 1907, the activities of the Department of Royal Botanical Gardens were enlarged and made up of:

1. a scientific division composed of three sub-divisions, Entomology, Pathology and Chemistry;
2. a botanical and horticultural division managing the three botanical gardens at Peradeniya, Henarathgoda, and Hakgala;
3. a division of experimental stations managing the experimental station at Peradeniya and the cotton experiment station at Maha Illuppallama, and
4. a division of school gardens.

Even with the creation of the Department of Agriculture in 1912 the emphasis on research and advisory work still continued to be directed to the plantation sector. It was only in 1922 when the country was facing severe food shortages an aftermath of the first World War that mounting local pressure forced the government to pay attention to the development of peasant agriculture. Even as late as 1930 the peasant sector received very little support as evidenced by the lament of K. Kanagasabai, a research worker, who said "Critics of the government agricultural policy have had occasion to hurl attacks on the Agriculture Department and to find fault with the officers for not having paid attention to paddy as towards tea or rubber."

The functions of the Department of Agriculture were defined by the Director of Agriculture in his administration report for 1922 as "research extension and education. Education be it by lectures, leaflets or demonstrations, cannot be undertaken with success, unless it is based on definite facts which have been obtained by research and established by experience; propaganda which is not based on actual experiment is doomed to fail."

These objectives were further amplified by the Director of Agriculture in 1932, when he stated that "all efforts have been exerted to bring agricultural staff into as full contact as possible with the villager, to gain his confidence and help him in all ways, and to bring the so-called experiment stations to serve more the purposes of demonstration stations and depots to which the surrounding cultivators can look for practical help and for a supply of seeds and planting material."

An extension system in touch with the farming community with linkages with the research to draw on new information and technology, and the supply of seeds and planting materials under the Director of Agriculture was beginning to take shape.

For the first time, in 1919, Agricultural Divisions were created with the appointment of Agricultural Officers under whom were absorbed the Agricultural Instructors of the Ceylon Agricultural Society. The Agricultural Officers were in charge of divisions and Instructors were in charge of ranges. They were entrusted with the responsibility of looking after all the agricultural problems within their area of work. These covered research and experimentation, management of agricultural farms, animal husbandry development and veterinary services, in addition to advisory work with planters and farmers directly.

The Department started with three Agricultural Divisions in 1923, which increased to four in 1927, and six in 1932. By 1939 the number was increased to nine divisions and remained at this number till 1957. The Agricultural Instructor was the field level extension worker who came in direct contact with

the farmers. In 1939 there were 74 Agricultural Instructors, of which only about half the number were in the field, others being employed in research and management of farms. The number of Agricultural Instructors was still so small that their effectiveness as field level extension workers was minimal. A need to convey the results of scientific research to the public, more specially to the "village agriculturist" was realised consequently and in 1932 a Propaganda Division was created in the Department of Agriculture to meet these needs.

The outbreak of the second world war and its consequences on the food situation in the country made the government revise its agricultural development policies to meet the food shortage. Agricultural Instructors of the Department of Agriculture were released to the Assistant Government Agents of the districts to be engaged in the job of food production. By 1943 there was a temporary re-orientation of the energies of the field staff towards the direction of food production in what were called "state chenas". Rice, being the staple food of the nation, the government of the time attempted to produce all the requirement of rice locally, as the lines of supply of imported rice were threatened by enemy activities. Towards this end a Paddy Advisory Board was appointed in 1944 to advise the government in all matters concerned with cultivation of paddy. The objectives of this Board were "to bring one million acres of new land under rice, and to raise the average yields of rice to 40 bushels per acre, in order to produce locally the country's rice requirements." It will be thus evident that the country's goal of achieveing self sufficiency in rice was set as far back as 1944.

1947–1963

A resurgence in agricultural development was experienced immediately piror to and after the grant of independence in 1947. Greater attention was paid by the state to the production of rice. Irrigation tanks and systems that had fallen into disuse through long periods of neglect were renovated or reconstructed. More lands were opened up for cultivation. Large numbers of peasants were settled in colonisation schemes. All this development work exerted more pressure on the Department of Agriculture not only for improvement in the technology of rice production through research but also for a more effective and efficient system of taking the technology to the farmers.

The organisation of the Department of Agriculture, however, did not undergo any qualitative changes to meet these challenges. There was a small increase in the staff of the Instructor grade. Between 1952 and 1957 about 70 Field Demonstrators were appointed to assist the Agricultural Instructors in organising field days, cinema shows etc., These Demonstrators were not utilised for advisory work with farmers.

A number of Female Demonstrators were also appointed in 1952 to work at the village level with farm women mainly on preparation of food, food preservation, needle work and handicrafts. The Agricultural Instructors continued to be the extension workers in direct contact with farmers.

Extension programmes were planned and executed at the Divisional level by the Divisional Agricultural Officers. There was hardly any national planning. Popularisation of pureline seed paddy, sporadic drives to expand the cultivation of some crops like chillies and onions and the introduction of some new technology like row seeding and row planting were the type of extension programmes carried out during the early 1950s.

Extension was still weak and ineffective and was characterised by:

1. lack of national planning and coordination;
2. paucity of field extension workers in direct contact with farmers;
3. lack of coordination with research to find solutions to farmers problems;
4. lack of in-service training to develop and improve the competence of extension workers; and
5. multifarious duties which were not directly involved with extension or advisory work.

Food production was considered so important that a separate Department of Food Production in the Ministry of Agriculture was created in 1952 and was entrusted with the "responsibility of coordinating the activities of all departments connected with the production of food," thereby weakening the efforts of the Department of Agriculture to build up a strong advisory service to meet the needs of the farmers. In 1957, the Department of Food Production was disbanded and the staff was absorbed into the Department of Agriculture. About 500 Food Production Overseers came into the Department and a new cadre of Food Production Ovrseers was created. Many of the Food Production Overseers had no agricultural training whatsoever. The designation of the Food Production Overseer was later changed to Krushikarma Vyaptha Sevaka (KVS) and subsequent recruitments were from persons with a one year training in practical farm schools. With this emerged a new cadre of extension workers below the Agricultural Instructor who came in direct contact with the farmers.

The youth of the country were for a long time left out of the mainstream of agricultural development. All extension programmes were directed to the adult farmers. In 1951, with a view to reach the rural youth, a Young Farmers Club movement was started. At the start the clubs were organised in schools and in 1958 the formation of clubs was extended to villages. The movement

started with about 196 clubs in 1951 and today there are 1815 clubs with a membership of 64,000. These clubs are purely voluntary organisations open to young people between the ages of 14 and 25.

From about 1955 a few changes in the extension approach were made. The former demonstration plots were replaced with more objectively designed demonstrations called "method and result" demonstrations. The group discussion method was also introduced for the training of local leaders and voluntary village workers. The extension staff were required to pay greater need to the problems in the field and to convey to the research staff those that required their attention.

Although the use of inorganic fertilisers was introduced earlier, yet the adoption of this practice was very slow. The soils had not been mapped satisfactorily for fertiliser response. A programme of experimentation in farmers' fields was commenced in 1956 to test rice soils for response to the application of nitrogen, phosphate and potash and for the availability of these major nutrients. In 1957 the Director of Agriculture reported that for the spectacular spread of fertiliser use, credit is due to the department's extension staff. The rice acreage receiving artificials was the highest on record 31% of the Yala acreage and 32% of the Maha acreage were fertilised. This was the beginning of a programme of experimentation in farmers' fields.

Another major breakthrough in rice production came with the introduction of the yaya scheme of seed production in 1957. Earlier, seed multiplication had been scattered over a multiplicity of small plots. The yaya scheme of seed production launched in 1957 concentrated seed production in complete tracts and simplified supervision, processing, storage, purity maintenance and disease control. By this method farmers were given seed paddy that carried a guarantee of purity and viability. The production, purchase and sale of seed paddy was part of the extension programme.

Extension organisation underwent a major change in 1957. The Divisional Agricultural Officer grade was abolished and was replaced by the grade of District Agricultural Extension Officer. The Divisional Agricultural Officers who were in charge of the agricultural programmes in the nine provinces, had a multiplicity of functions such as management of farms, agricultural extension and advisory work including animal husbandry and veterinary services. Each DAO was in charge of two or more districts. The District Agricultural Extension Officers were appointed to each of the twenty two districts and were relieved of the management of large farms and commercial enterprises. However, they continued to manage the smaller farms, tractor units and farm schools until 1963, when the Agricultural Farms and Education Division was created.

A long felt need to combat epidemic outbreaks of pests and diseases was met with the formation of a Plant Protection Service in 1957. Seven mobile units equipped with sprayers, dusters and agro-chemicals were provided to demonstrate the methods of control of pests and diseases and to collect data for pest and disease control. This service was progressively enlarged with the appointment of specially trained Agricultural Instructors for plant protection in each district.

A unit of Land and Water Use was next created in 1958. This unit has had a tremendous impact on agricultural development. Identification and characterisation of the agro-ecological zones has helped agricultural planners to decide on cropping patterns and systems for the different agro-ecological zones. The unit of planning of all agricultural activities today, be it extension, production, research or training, is the agro-ecological region.

The Farm Women Extension component was strengthened in 1952 by the appointment of a number of Female Demonstrators to educate farm women on better nutrition, processing, storage, and utilisation of farm products, home management, needle work and handicrafts. In 1959, five Farm Women Advisers were appointed to guide and supervise the female demonstrators. The programme, however, made very little progress and its impact on the rural women was minimal. The programme was terminated in 1964.

This programme was re-examined later and a decision was taken to have a more objective programme for the farm women. A project with the assistance of the FAO, termed the Farm Women's Agricultural Extension Project, was inaugurated in 1970.

1963–1979

No major change in the organisational structure of the Department as far as extension was concerned took place till 1963. From 1921 to 1956 the Divisional Agricultural Officers worked directly under the Director of Agriculture. In 1957, the Deputy Director of Agriculture was in charge of all government farms, school farms, school of agriculture and agricultural extension. In 1963, three posts of Deputy Directors of Agriculture were created. One Deputy Director was given in charge of Farms and Education. The other two Deputy Directors were responsible for extension work in Rice, Subsidiary Food Crops and Horticulture.

Upto this period the extension work concentrated mainly on the production of rice through the spread of pureline seed paddy, demonstrations on improved management practices such as fertiliser application, transplanting, row seeding, pest, disease and weed control. Extension work in other crops was done in sporadic drives for the popularisation of crops like chillies, onions and potatoes. Crops like cotton and tobacco also received some attention.

1963 heralded a new approach to the cultivation of subsidiary food crops and vegetables. The Director of Agriculture in his administration report stated that "the overwhelming demands of paddy cultivation had channelled the departmental resources to this crop. Sufficient attention of a sustained nature had not been given to the problems of subsidiary food crops. The creation of a separate section of the department under a new Deputy Director was intended to create the necessary impetus to this line of work. In addition the government offered a new guaranteed price for chillies and brought Bombay onions within the guaranteed price scheme". The continued progress of the cultivation of subsidiary food crops like pulses, coarse grains and cereals, yams and tuber crops depended on many factors beyond the control of the farmers such as weather, pricing, marketing and import policies. As a result the cultivated extents under these crops showed wide fluctuations over the years.

Agricultural Instructors were appointed as vegetable extension officers to work exclusively in special areas such as Kandy district, Matale district the outskirts of Colombo district, Nuwara Eliya district and Welimada area in Badulla district which had specialised in vegetable production.

Import of vegetable seed which was in the hands of the private sector was taken over by the Department of Agriculture in 1964 and sales were done through the Cooperatives and the extension centres of the Department of Agriculture.

Rice extension concentrated mainly on the issue of registered and certified seed of improved varieties and advice regarding the use of fertilisers and agro-chemicals. Cultivators were found to experience difficulties in obtaining their requirements of agro-chemicals. This was primarily due to the fact that the Cooperatives which were expected to stock and sell agro-chemicals were more interested in the sale of consumer goods and not in production-oriented input sales. In order to help farmers overcome this difficulty the Department of Agriculture stepped in to undertake the sales of agro-chemicals and seeds.

A new approach to extension was evolving. An impetus to the production of rice, vegetables, fruits and subsidiary food crops was being provided by making more easily available some of the agricultural inputs needed for these crops through the extension centres. This approach was considered necessary at that stage of development, where the extension worker was considered to be an "encouraging companion who helped farmers obtain inputs which were not made available by other agencies."

This system created the need to have a place within reach of the farmers where the local extension officer could be contacted either for technical assistance or for the purchase of agricultural inputs. Agricultural Extension Centres were consequently developed in the ranges. These centres served the need of farmers to learn about the latest varieties of rice and other field crops, fertilisers and equipment and place their orders for the same. They could also obtain plant protection services in case of epidemic outbreaks of pests and diseases. These centres also stocked the latest publications of technical leaflets and bulletins for the information of farmers. They were also used to conduct farmer training classes and discussions using modern teaching aides. When the production of subsidiary food crops was introduced using lift irrigation methods, the department made available water pumps on hire to farmers who needed them.

The extension centre was further strengthened in the 1970s to include in one building most of the agencies serving the farmers eg. Agricultural Productivity Committee, Agrarian Services Department, Agriculture Department, Bank, Coconut Cultivation Board etc. It now became the Agricultural Productivity Centre, later renamed the Agricultural Services Centre. There are about 500 such centres.

A separate Extension Division was created in 1964 with the appointment of a Deputy Director exclusively for extension activities. This marked the recognition of agricultural extension as a specialised field of agricultural development and was followed by rapid progress in agricultural extension activities.

Crop specialisation demanded strong technical support from all levels of extension staff. It was becoming more evident that the quality and competence of the extension worker had to be up-graded to meet these challenges.

The School of Agriculture at Peradeniya, which was established to provide a two year training in agricultural sciences, was shifted to Kundasale in 1967. The buildings and facilities at Gannoruwa, Peradeniya were utilised for an In-service Training Centre in crops and related disciplines. This was further expanded to provide training to officials of other departments and institutions engaged in agricultural development. Today there are six such centres functioning at Gannoruwa, Bindunuwewa, Maha Illuppallama, Killinochchi, Angunakolapallesa and Karadian Aru with provision for two more centres at Bombuwela and Makandura in each of the eight agro-ecological regions.

The first organised farmer training class was held in Kegalle district in June 1967 where over 2000 farmers participated. This idea was extended to other districts and forms one of the important extension tools in the dissemination of agricultural information.

The concept of testing varieties and practices in farmers fields for farmer acceptance was established through the Extension Field Trials (EFT) programme for varieties, herbicides and fertilisers in 1969. It were conducted by the Extension Division. The minikit programme was a further extension of the EFT where the more promising varieties were tested by a larger number of farmers. The farmers grew these in small plots along with their own varieties and evaluated them for yield and other characteristics. From the results of the minikits the accepted varieties were selected for wider cultivation. Farmers were then provided with a production kit. The production kit consisted of two pounds of seed together with the required quantity of recommended fertilisers with a short note on the management of the crop.

There were also certain projects operated by the Ministry of Lands, Irrigation and Power, where the Department of Agriculture concentrated its extension efforts by having a more intensive coverage of staff. These were the Special Projects in Colonisation Schemes, Lift Irrigation Schemes and Youth Settlement Projects.

A new element of planning was introduced into the Ministry of Agriculture when the Annual Implementation Programme was produced in 1965. Each year a planned production programme was prepared for the more important crops to meet the national goals of self sufficiency, import substitution or export orientation. The district administration prepared a plan of production based on the resources at their command, which was matched against the indicative targets prepared by the Ministry based on the national goals. After discussion with the District Agricultural Committees, the district plans were accepted with suitable amendements and compiled into an all-island implementation programme. The annual implementation programme was the basis on which the agricultural extension programmes for the districts were drawn up.

By the beginning of 1979 the Extension Division was being consolidated into a more effective orgnisation to meet some of the roles an effective extension service had to play.

Each DAEO had an extension staff ranging from 6–17 Agricultural Instructors and 20 to 138 Krushikarma Vyapthi Sevakas depending on the size of the district and its agricultural potential. The Agricultural Instructor was located at the Divisional level. Each district revenue division was divided into one or more Agricultural Instructor ranges depending on the size of the division and the importance of agriculture in the division. There were 202 ranges. On an average an Agricultural Instructor covered about 3000 ha of paddy land and had to deal with around 3000–6000 farm families in about 20–25 Cultivation Committees.

Each Agricultural Instructor's range was subdivided into a number of KVSS ranges. There were about 4-12 KVSS in each Agricultural Instructor's range depending on the size of the range. Each KVS had between 1000—1500 farm families to serve. The KVS is the officer who works directly with the farmer and is the final link in the extension organisation. There were about 1090 KVSS in the field working in extension.

Although the extension organisation was getting progressively strengthened, yet there were many weaknesses.

The District Agricultural Extension Officer had a wide range of functions. He was responsible for the administration of the district for programming, supervising and evaluating programmes, for advising and servicing the field staff and the district coordinating committees on all technical problems that arose in the district. The contact between the District Agricultural Extension Officer and his field staff was in most cases relatively superficial especially in the larger districts. The DAEO could not thus give the technical guidance and support needed by his field staff.

The Agricultural Instructor was a generalist dealing with all crops and livestock problems that arose within his range. He worked in close association with the Divisional Agricultural Committees under the chairmanship of the Divisional Revenue Officers. The production, purchase, certification and distribution of seed and planting materials and the sale of agrochemicals and other agricultural requisites from extension centres was done by the AI. For this purpose he had to have close links with the Multi-purpose Cooperative Societies and Cultivation Committees and was expected to attend the meetings of these organisations. He had also to assist the Departments of Census and Statistics in assessing the yields of paddy, conduct competitions on paddy and other crops, organise school garden programmes and the activities of the Young Farmers Clubs, and collect crop statistics. The greater portion of his time was thus devoted to these activities, and his role as teacher and guide to the farmer could not be effectively achieved.

The KVSS had too many farming families to serve. When the numbers are too large the tendency is to meet only some of the farmers and leave out the others.

Another factor that affected the efficient working of the extension staff was their lack of mobility. The KVSS were expected to perform their work on push bicycles. The AII were expected to own their cars or motor cycles. If they did not possess these means of transport they were expected to perform their duties using public transport. This seriously handicapped their movement in the field and affected the quality of their work.

Links with research were very superficial. There was no effective mechanicism to take farmers' problems to the research and to take the research findings to the farmers. Further, research was conducted in the major research stations of the country and was not oriented to tackle the problems of the regions or districts.

TRAINING AND VISITS SYSTEM

Realisation of these deficiencies led to a reoraganisation of the extension system. For this purpose financial assistance was obtained from the World Bank under the Agricultural Extension and Adaptive Research Project. (1980–1984).

Some of the pre-conditions and infrastructural support for the implementation of this project had already been built up: for instance the identification and characterisation of the agro-ecological zones and the grouping of these into eight major agro-ecological regions. These regions have become the units for planning the extension and research programmes for the districts that fall within the region. Eight Regional Technical Working Groups consisting of extension, research and training staff of the districts have been formed to service agricultural development in these regions and provide a link between research, extension and training.

There was also the creation of Agricultural Service Centres in the districts. The area that came within the purview of the ASC became the smallest unit of planning in the district. Each ASC had an agricultural service committee composed of farmer representatives and government officials who were entrusted with the responsibility of attending to the problems in that area. The ASC also provided a building to house the public agencies that served the farmers.

Furthermore, the Department of Agriculture was relieved of the job of sales of agro-chemicals, which was handed over to the Department of Agrarian Services. The production and certification of seed and planting materials was taken over by the Division of Farms relieving the extension workers of this responsibility, while the sales and distribution were still retained by the extension divisions as it had a direct bearing on the extension work by giving it a 'push' effect. Staff training at all levels and the provision of facilities for improving the knowledge and skills of the officers and for career development were taken over by the Education and Training Division.

The main feature of the AEAR Project is the training and visits system It created (1) a professional unified extension service covering all crops with a line of command from the Deputy Director of Extension to village level extension worker; (2) provided for regular fortnightly training of AII and KVSS by Subject Matter Officers (SMOO) in crop, stock or other disciplines;

and (3) programmed visits to groups of farmers by KVSS once a fortnight and every fortnight with relevant information on topics of interest and importance for that fortnight.

Farm families covered by each K.V.S. (750 on average) are divided into six clusters containing 125 farm families each. Within each cluster six groups would be identified. In his regular fortnightly visits the KVS will ensure that some farmers are fully exposed to the information (messages) from the beginning to the end of the season. These are the "Contact Farmers" who are expected in turn to propagate the message. Two days in each fortnight are reserved for school or home gardens, and young farmers' activities.

Extension programmes of the districts are prepared on the priorities decided by the Regional Technical Working Groups. These are eight RTWGG, one for each agroecological region. Each RTWG is composed of the technical staff of the research, extension, education and farms divisions working in the region. The functions of this group are to identify and allocate priorities in research education and extension requirements of the districts and decide on appropriate action programmes for the two cultivation seasons.

Pre-seasonal training programmes for SMOO, AII, and KVSS are conducted by the Regional Training Centres (RTCC) on subject matters decided on by the RTWGG. Staff of the Regional Research Centres and Adaptive Research Units, Subject Matter Specialists from Head Quarters of Extension Division and any other Specialist Officers may be called upon to serve as teaching staff whenever required.

Regional Research Centres are responsible for planning, executing and supervising adaptive research programmes. Adaptive research is conducted in farmers' fields as a link between research and extension. Activities include field trials on new varieties, improved cultural practices and use of inputs for all fields crops as these technologies emerge from regional research centres and their sub-stations.

Programmes for adaptive research are prepared by the Regional Technical Working Groups. Extension Officers are involved in the adaptive research programme in laying out such trials and making obeservations under the guidance of research staff in order that extension messages can be generated from the results of these trials.

Training and Visits system of agricultural extension was first introduced in Maha 1979/80 in four of the twenty four districts. These districts were selected because they were components under on-going IDA financed projects, and had some experience of the T & V system from 1976. In Yala 1980 the T & V system was implemented in all districts. Recruitment of staff and vehicles etc. has been phased out over a period of four years.