TRAINING ROLE OF THE FACULTY OF AGRICULTURE AND ITS LINKAGE WITH TRAINING INSTITUTIONS

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The Faculty of Agriculture of the University of Peradeniya was establishdd in 1947, as a single department of Agriculture. Over the past 32 years the Faculty has grown both in size and stature and presently comprises of 6 departments of study with a student enrolment of about 450. The six departments of study are Crop Service, Agricultural Biology, Agricultural Chemistry, Agricultural economics and Farm Management, Animal Husbandry and Agricultural Engineering. These departments were established during the period 1972/1974. Since then the expansion has been rapid and today the Faculty is actually involved in the nations development effort in agriculture.

The Post-graduate Institute of Agriculture(PGIA) was established as an autonomous unit of the University of Sri Lanka in June 1975. This was established on the recommendation of a widely representative Committee appointed by the then Advisory Board of Governors of the University. Although the Faculty of Agriculture and the Post-graduate Institute of Agriculture are separate institutions they are closely linked in several respects. The Boards of Study in the Post-graduate Institute of Agriculture correspond to the departments of study in the Faculty and senior members of the Faculty constitute the core staff of the PGIA. Laboratory and other facilities of the Faculty are utilised for the teaching and research programmes of the Post-graduate Institute of Agriculture. Until the beginning of this year the positions of Dean of the Faculty and Director of the Institute were vested in a single individual. However at present these two positions a are held by two individuals.

The Dean is the academic head of the Faculty. The administration of each department is controlled by its respective head of department. The teaching and research activities are co-ordinated through a system of departmental committees, Faculty Academic Committee of Heads of Departments. In addition the Faculty has set-up a

Research Committee and a Curriculum Committee to co-ordinate the staff research programmes as well as to make recommendation regarding curriculum changes in the under-graudate programme.

Similarly Director of the Post-graduate Institute of Agriculture is the Administrative Head of the Institute and he chairs the Co-ordinating Committee, Academic Syndicate and Council meetings.

Both the PGIA and the faculty are now at a crucial stage of development. They are strong organizationally, have established creditability through quality of their programmes and their levels of financial support have increased markedly over the past several years. Foreign Agencies such as the U.S. A.I.D. and O.D.M. have already initiated assistance programmes with a view to developing the two institutions and involving these in the nations development effort in agriculture.

Manpower Supply and Demand at the Post-graduate level

From a survey carried out by the Academy of Educational Development the number of university trained agricultural graduates that were available in 1977 were as follows :

	B.Sc.	M.Sc.	M.Phil	Ph.D.	Total
Employee ...	364	93	5	79	541
Studying full-time at PGIA	53	6	-	-	59
Studying Abroad	-	-	-	-	58
Total,University trained agriculturists			5	79	658

The survey thus identified a total of 177 Post-graduate agriculturists working in Sri Lanka. Most of these persons have pursued their Post-graduate studies abroad.

Unsatisfied demand for Post-graduate agriculturists

	1978	1979	1980	1981	1982	Average
M.Sc.	57	51	56	61	70	59
M.Phil.	5	10	4	3	4	5
Ph.D.	4	6	10	7	12	8
Total unsatisfied demand for Post-Graduate	66	67	70	71	86	72

These numbers signify the effective demand. This is indicated by the fact that the public agricultural sector in 1977 authorized 227 new agricultural positions at the intermediate B.Sc. and Post-graduate levels (an increase of 11.8% over the 1976 total of 2466 agriculturists positions. The relative demand for M.Sc's, M.Phils and Ph.D's during the period 1978-82 according to this data will be 7.2% for the M.Phil degree, 10.8% for the Ph.D. and 82% for the M.Sc.

The situation of Sri Lanka contain a number of factors which indicate a continuing and increasing necessity for the employment of high-level agricultural manpower such as :

- The scarcity of mineral resources and the limited internal market which restrict industrialization, signify that agriculture will remain for a long time the mainstay of the economy.
- The limited market for tea implies that future agricultural development must occur through diversification which demands significant number of research and extension personnel.
- The increasing food requirement of the growing population mean that self-sufficiency in food production will undoubtedly remain a major goal of government.
- The limited land base implies that agricultural production increases must occur through increased yields.
- The great diversity of ecological zones, which presents an opportunity for cultivating a wide variety of crops, also means that more research inputs are required than in a country where conditions are more uniform.

The demand is entirely diversified, originating from less than 33 different sources. Thus there does not exist a problem of a single market for agricultural Post-graduates which might become glutted. Much of the demand sources are young organizations which will continue forming their technical cadres for many more years to come. In particular the Mahaweli Development Board alone will require, starting in 1983, some 8 - 10 M.Sc's annually as Subject Matter Specialists. Thus the demand is likely to amount to 70 to 80 Post-graduates or more annually throughout the 1980's. Under the Agricultural Service System,

recently established in the Ministry of Agriculture and most of its dependencies (which together employ about 299 Agricultural B.Sc's or 63% of Sri Lanka's total) a B.Sc. must obtain after 5 years an M.Sc.degree before promotion to Grade II. Since the number of new B.Sc's in 1978-82 will be 99 to 117 annually, and more than 200 annually are expected after 1982, the agricultural service system initially assures an increasing stream of applicants for advanced degrees during the 1980's and beyond.

Total Enrolment Requirements for Post-Graduate Studies

	1978	1979	1980	1981	1982	Average
Number who should start Post-graduate studies	78	82	85	88	88	84

The Enrolment needs for Satisfying 80% of the demand

	1978	1979	1980	1981	1982	Average
M.Sc.	47	47	55	57	57	52
M.Phil	3	3	3	3	3	3
Ph.D.	12	16	10	10	10	12
Total entrants needed to meet 80% of demand	62	66	68	70	70	67

Manpower supply and demand at B.Sc.level

There were 364 agricultural graduates working in Sri Lanka 1977 in addition to the 234 enrolled in 1978 and 1979. Most of these graduates are from the Faculty of Agriculture.

The unsatisfied demand in 1978 to 1982 is indicated as follows:

	1978	1979	1980	1981	1982	Average
Demand for Agricul-Sector	220	185	169	147	131	170
Demand for Agricul-gural High School teacher	75	75	75	75	75	75
Total demand for B.Sc.Agriculturists	295	260	244	222	206	245

The present indications are that the demand for agricultural graduates would be higher than 170 per year. The demand for 75 Agricultural High School Teachers is a result of the rapid introduction of agricultural subjects into the high school syllabus.

Although the Faculty of Agriculture is not directly involved in the training programmes of the Schools of Agriculture and Practical Farm Schools it would however be relevant at this point to look briefly into the demand and supply of personnel at intermediate levels. The Agricultural Diploma entails two years of agricultural studies beyond the 10th grade (G.C.E. Ord.level). There is an available number of 2888 diploma holders attached to various institutions in Sri Lanka and the total demand for 1978 to 1982 is as follows :

	1978	1979	1980	1981	1982	Average
Total demand, Agric. sector	416	328	312	278	243	315

The demand for diploma holders is also increasing due to the expansion of areas of activity in the Land Commissioner's Department, Education Department and Agrarian Services etc. Similarly there is an increasing demand for practical farm school trained personnel. The total employed in 1977 was 4010 and the annual demand is in the region of 800.

While attempting to provide training facilities at B.Sc. and M.Sc.level the Faculty also contributes to the agricultural education and training programmes in many other ways. These are as follows:

(a) Outreach programmes:

Although the outreach activities have been carried out on an ad hoc basis the future plans of the Faculty include specific programmes for strengthening teaching and research in extension as well as other organized outreach activities. Some of these activities that have been carried out by the Faculty include Seminars, training workshops, field days etc.

(b) (b) Publication of Books and Research Articles

The staff of the faculty of agriculture contributes articles to various journals and newspapers both national and international. Findings of research carried out in Sri Lanka are published for the benefit of those who are engaged in agricultural pursuits. These publications include books, scientific articles popular articles and newspaper articles. Furthermore extension leaflets have also been prepared and distributed among farmers on various aspects of agriculture. These publications are often used in training programmes particularly in the Departments of Agriculture and Education.

(c) Participation in developing curricular and evaluation of teaching programmes

The faculty is also engaged in conducting periodical studies of the curricular in various agricultural training institutes such as the School of Agriculture and it is envisaged that the faculty will participate in improving their teaching programmes in the future. Evaluation of these courses and a constant assessment is essential for maintaining good standards particularly in view of the facility granted to diploma holders to gain admission to the University under special provisions.

LINKAGES

With various functions and training roles of the faculty of agriculture there is already linkages established between this institution and others. However there is a need for improvement and strengthening of these linkages. According to Drillon linkages can be classified into enabling linkages, functional linkages, normative linkages and diffusive linkages. I would briefly discuss these linkages with special reference to the faculty.

Enabling linkages

These linkages help to establish institutions or provide the institution with legal authority to operate. They would open pathways or opportunities to obtain essential resources which under normal conditions would not have been available. These are the relationships which breathe life into the organisation - decrees, charts, directives, or whatever is basic authorisation for the establishment of the organisation. A good example of such a linkage is the establishment of the Post-graduate Institute of Agriculture. The statute for the PGIA while creating an institute of higher learning also enabled it to have a close and effective link with important Ministries, Departments and Institutes servicing the agricultural sector by establishing a council of management drawn up of secretaries of ministries concerned and directors of other institutions. This council no doubt brings the PGIA and other institutes much closer. Another example is the establishment of links between the Academy for Educational Development and the PGIA under the U.S. AID. Programme. The purpose of this link is to strengthen the staff resources, improve the infrasturcture and increase the capabilities for under-graduate and post-graduate training.

The functional linkages

These are relationships or association with organisations, institutes etc. These linkages help the organisation to function and permits the organisation to expand its operations and increase its effectiveness. The linkage between the Faculty of Agriculture and the Ministry of Plantation Industry is a functional one where each year a certain number of under-graduates are trained in the specialised field of plantation crops. These graduates are then placed in a pool until positions are available for employment in the plantation sector. Another example of such a linkage is between the Department of Agriculture and the Faculty of Agriculture where a certain number of officers are trained annually at B.Sc.level for the purpose of up-grading their services .

The third is the normative linkages and these are relationships with organisations that determine the norms, the standards and the values of society. Drillon (1975) refers to these as contacts that establish standards, dictate norms and propagate society's values. For example government policy would set goals for training rural youth for the purpose of providing them with gainful employment, improving social equity, expanding agricultural infrastructure, increase in production targets, integrated development etc. The provision of an educational and training programme to achieve these goals would be a normative linkage.

Diffused Linkages

These are relationships which are not easily categorized. They represent contacts with individuals or groups that are not formally or directly related to any institution or agency. These linkages could be called the informal linkages and such informal linkages exist between the Faculty of Agriculture and other institutions. Although these linkages are not formally written down these involve inter-personal and inter-organisational relationships. An example of this type would be the linkage that exists between the Committee on Agricultural Education and Training and the institutes. The membership consists of two from the Faculty and three from the Department of Agriculture. Such a Committee while helping to formulate a scheme for agricultural education and training would also undoubtedly help to bring about interpersonal and interorganisational relationships.

In conclusion I would like to quote Clifford Hardin "All forms of development agricultural, industrial social cultural political are inter-related. Whatever a nation is able to accomplish is dependent ultimately on its physical resources on the one hand and its human resources on the other. Physical resources vary from country to country. For any given country, however, physical resources at any point in time are relatively fixed. If a country is motivated to improve its lot it must come through a greater development of its people, an increase in their knowledge skills and capacities and this is very much a function of universities and particularly agricultural institutions in a predominantly agricultural country".

1. A E D Report 1977 - Post-graduate Institute of Agriculture, University, Peradeniya.

2. Five Year Development 1977 - Plan Faculty of Agriculture.

3. Agricultural Research Management Volume I South East Regional Centre for graduate study and Research in Agriculture 1975.

4. Getting Agriculture Moving, Essentials for development and modernization 1966 Ed. R.E.Boston.

5. Y D A Senanayake, 1979 Institutional Linkages in Agricultural Research - Proceedings of experimental Station Managers Workshop, Sri Lanka.