

Integration of Research, Education and Extension in Agriculture

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At a time when our country is passing through an unprecedented period of agricultural or rural development towards the building of a welfare State, one thing more than another that provides the pre-requisites for success is a co-operative endeavour on the part of the educationalist, scientists, and extension personnel of the Agriculture Departments. Agriculture has been rightly stated to be in the midst of a revolution in our country at present. Increasing application of science to Agriculture has become not merely important but essential for our economic survival. The National Plans have as their objective a balanced development not only in agriculture but also of different branches of agriculture itself. These various plans for agricultural development have to be based against the background of general picture of our economic, social and administrative set up.

In this State, as in the rest of the country, land is almost the only source of the farmers' income and this means that increase in crop yields forms the pivot of all plans for increased prosperity of the peasant. It has been estimated by some authorities that during the last two decades, the population grew faster in our country than cultivated areas, dependance on agriculture for gainful employment increased as also the non-earning dependents of farmers and the number of cultivators and cultivating labourers, while the land *per capita* declined. Against this sombre picture, it is not clear if there has been adequate compensation by increased productivity of land in proportion to the increase in the pressure of population on agriculture. If there is no such development, we have to conclude that the land is becoming an increasing source of impoverishment of the masses rather than of promotion of wealth.

Even if the facts point to a different direction, the overriding importance of increasing agricultural wealth in our national economy and for national security, is obvious. The three-fold channels

of agricultural improvement are through research, education and extension service. A review of the present set-up in each of these fields of activity is, therefore, of topical interest and value.

Agricultural research forms now a field where a multiplicity of agencies are at work in the country. The Indian Agricultural Research Institute, the Indian Council of Agricultural Research, a number of Commodity Committees under the Food and Agriculture Ministry, a few Boards under the Commerce Ministry and some National Laboratories are dealing with different and sometimes the same aspects of agricultural research, while in the States the Departments of Agriculture are battling to an extent with similar problems. There are also a few private agencies including a large number of individuals, to whom science or research is a secondary activity in life. To have a multiplicity of agencies is all to the good, but when research is done by a worker in an isolated manner, often blissfully ignorant of the efforts of others, there is bound to be wastage and much overlapping, which the country can ill afford. Research is a life long profession to most in these days, and this not uncommonly gives rise to a tendency to look down upon the work of part-time scientists as of no consequence. We cannot forget that a good part of the world's outstanding scientific contributions were from those to whom scientific pursuits were a hobby and not the main calling. To harness the efforts of all scientific workers into an integrated system is an ideal of Indian Council of Agricultural Research, but it does not seem possible to claim yet that we have reached the ideal.

Scientific ability is not by any means synonymous with intimate experience of plant life and plant husbandry. A gifted agricultural scientist can never rise to his full stature without a good agricultural background, any more than an intelligent practical farmer or an Extension Specialist can claim competence to propound the intricacies of agricultural science merely by claiming competence in his respective vocation. Just as results of research get enriched and scientific ability grows with the practical experience of farming, so does the efficiency of the farmer and extension worker grows with intimate contact with scientific progress in agriculture. Can we say that we have evolved a perfect system to provide for all such attainments in the various types of extension personnel?

Adverting to the field of agricultural education, the divergence and disparity are even greater in magnitude. There are many Agricultural Colleges in the country where only matriculates are

admitted, while in others as in this College, Intermediates in Science are only eligible for admission. The syllabi consequently vary and so are the examination systems and the competence of the agricultural graduates and teachers. The University Grants Commission is charged with the responsibility and resources to bring about an improvement in the standard of University education, but its impact is yet to be felt in the agricultural Colleges. It has been admitted on all hands that no longer is it possible for the agricultural colleges to live a cloistered life and be isolated units amidst surroundings which are fast changing with kaleidoscopic rapidity. It is the desire of all to create our agricultural institutions to be a part of the social, economic and cultural life of the region and be a component part of the society, influenced by it and influencing it. The system of agricultural education has to have a determining influence on the rate at which economic progress is achieved and the benefits which can be derived from it. The pattern of education has, therefore, to be changed constantly to the changing needs and circumstances.

With science developing at a fast pace, it is not easy for any teacher to keep himself abreast with the rapidly accumulating knowledge. Some are tempted to rely on the old stuff and there is no generally accepted method to pull him up if he does so. What to teach is as important, as to how to teach it and when to teach it. A standard or set syllabus and examination system does not aim to bring out the best in each teacher. These are problems of great importance which deserve serious attention. The recent Seminar on Agricultural Education at Trivandrum focussed attention on many of these aspects, but the ills of agricultural education are bound to take time to be solved.

The effectiveness of future development will depend, to a very large extent, on the quality of personnel available for absorption. No efforts should therefore be spared in achieving a high level of competence in those to be trained during the coming years in our Agricultural Colleges. A graduate in Agriculture taking his first degree cannot be expected, however, to have an encyclopedic knowledge of agriculture such as to be a full-blooded or useful research or extension worker straightaway. Extension work involves not only an intimate understanding of practical agriculture and of the particular branch in which the extension worker is called upon to render service, but also the requisite skill in dealing with persons and situations. Fundamental theories taught in a college when presented in an

elementary fashion often lead to the giving away of half-truths. Such half-truths or even facts when incautiously or capriciously put across by an ill-equipped extension worker, leads to confusion, if not worse. It is not uncommon that in the hands of an ill-equipped extension worker, the farmers are therefore treated as guinea pigs.

Let us also recognise the reality that extension work even with a capital E cannot by itself bring salvation, if it is not based on tested facts from carefully planned research. An extension worker does not become more useful just because he has been in the job for a long time. In fact, his value diminishes in proportion to the extent he is divorced from research or results of research. This fact needs to be remembered and recognised if we are to build up the agricultural edifice of a welfare State. Education is a continuous process of acquiring new knowledge and neither age nor profession is a bar to the acquisition of such knowledge. Extension personnel need such continuous flow of knowledge as much as the under-graduate. It is not by rigid differentiation of the sphere of activity that the current of knowledge can be made to flow smoothly, economically and effectively. The inverse of differentiation is integration. It is I believe, the mission of this Institute to bring about such integration between all those apparently divergent fields of activity so that both student and staff efficiency in research, education and extension wings are promoted and maintained at a high level.

Development in all directions can at times lead to a bewildering stage. Credits and subsidies are undoubtedly useful planks in agricultural development, but in the ultimate analysis the stability of agriculture must depend on the efficiency of farming, for which education, research and extension are the means. It is only through these that the scaffolding of subsidies and other aids can be progressively dismantled, and a flexible, self-reliant, prosperous and independent agriculture can be developed to be the strongest element in our national economy.

This pioneer institution which is celebrating fifty years of existence now, dealing with the basic vocation of the largest body of our people, has just begun to feel the vitalising influence of National Planning. New buildings and equipments for about Rs. 38 lakhs from the Central and State Governments with a substantial measure of help from the T. C. M. of U. S. A. are opening new vistas for more

useful role of this Institute to play. Having regard to the requirements of this State and region and the contributions that can be expected by this Institution in future in a planned economy, it is necessary to regulate purposive education, research and extension. That the Government both at the Centre and in this State are fully alive to these, is evident from the fact that a blue print for integration of all these services for more efficient functioning in future has already been formulated. We await the decision of Government on these proposals.