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Agricultural And Mechanical University System

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THE Agriculture and Mechanical University System has been developed in USA. Popularly known as Land Grant College System it brought a rapid technological change in the agriculture sector of the United States of America. Significant changes occurred both in agriculture production and way of life of the rural people. This has sharply reduced the socio-economic gap between the rural and the urban people.

Many of the developing countries aspire to build such system. An understanding of the concept with its historical perspective as well as the operational procedure of the system may give us an insight in our existing institutional framework for promotional activities and their probable mode of re-organization to achieve a rapid rate of technological change in the agricultural sector of the country.

Excluding health and family planning sector Bangladesh has employed about 16000 extension workers under more than a dozen of organizations. The number of agricultural extension workers are continuing to increase. Yet the rate of technological diffusion among farmers is too low to meet the developmental need of the country. This is mainly due to institutional weakness. To overcome this basic weakness of the system policy makers are often inspired to search at alternate institutional framework. Many still believe that the Agricultural and Mechanical University System of the USA is the appropriate alternate institutional arrangement for rapid agricultural development of the country.

HISTORICAL PERSPECTIVE

The concept of Land Grant College System developed in the USA over a period of time. In early Eighteenth Century industrial revolution along with massive expansion of trade and commerce took place. Cities grew in size and activities. Classical educational institutions grew in volume and status to meet the growing demand for higher education of the growing elite of the cities. The privileged class of the society pursued higher education to build a carrier as professionals like philosopher, historian, writer, lawyer, doctor, etc. The universities were perceived as a higher seat of learning and people learned there for learnings sake.

On the other hand, people in the villages were struggling against the unkown forces for just a living. Around 90 percent people were at that time engaged in agriculture. The farmers though having relatively big farm could not achieve a comparable standard of living to their city due to scarcity of labour, capital and improved agricultural production technologies. Problems like low production, efficiency of the primitive crop and lives stock breeds, natural hataards, disease and pest infestation, health hazards, isolation, etc. compelled people to live below the subsistance level.

The people were, however, ready to struggle and find out the problems. They organized clubs, societies, schools, lectures, exhibitions, fairs, etc. to help each other learn from each other's experiences and solve their problems. But these activities did not bring much improvement.

It helped to develop a national realization that application of the latest science and technologies can only help people to solve their problems of low agricultural productivity and poor living conditions. It requires an opportunity of learning the changing science and technology. The classical educational institutions and universities have little scope and opportunity of imparting to each and every adult people engaged in agriculture and mechanics. What benefits do the American tax-payers accrue from those institutions was then the big political issue. Why the farmers and artisans should not get the opportunity of learning modern technologies for increasing their professional efficiencies which would help them increase production and achieve a better standard of living?

In response to this public demand a group of senators headed by Mr. Morill took the leadership to prepare a bill for establishing a College of Agriculture and Mechanical Arts (Engineering) in each State for providing practical education to farmers and artisans. It was known as morrin Act. The act was presented to the Congress of USA in 1857 but due to strong opposition it could not be passed.

Three years later it was again placed in the Congress and was passed with strong support from President Abraham Lincoln. The provision of the Act was that each State Government was to donate land and the Fedreal Government was to provide fund for A&M College. As land was granted to the college, it was called Land Grant College. It was a departure from the classical education to education of applied sciences. The Morrill Act was amended in 1930 to provide further support to these colleges

The colleges were built and boys and girls were admitted. Problems then arose as to who will teach what. There were no scientific knowledge of agriculture. The general scientists joined as faculty members. They took the boys and girls to the nearby farmers, enquired from them what is what and how they perform agricultural activities. That was all about learning agriculture. The matter of standard of education then became a national issue. The problem of knowledge gap in agriculture was at last recognized. Hatch Act was then passed in 1887 with provision for establishment of research station attached to each college to generate new scientific knowledge in the fields of Agriculture and Home Science.

Soon these colleges were also turned into classical educational institutions. Research piled up new knowledge. Increasing number of boys and girls were getting higher and higher degrees in Agriculture. The educated boys and girls took up jobs in Government organizations like the United States Department of Agriculture, research stations, Land Grant Colleges and the private input selling agencies. Very few in fact took up farming as profession. The purpose of establishing Land Grant College was then frustrating. Meanwhile private effort of helping each other intensified. Farmer's institutions like clubs, societies, co-operative associations, etc., were formed. The demand for education of rural farmers were getting momentum. But the colleges found little scope to meet such a huge changing educational needs of all adult farmers of the country.

The College then attempted to disseminate their research findings to the farmers of the respective State. Books and journals were published but very few were read outside the college campus. Mobile libraries were then set. A large volume of leaflets, handbills, pamphlets, bides etc. were printed and distributed among farmers often free of cost. Such an effort brought little change. The colleges then began to offer series of short course training to the farmers. But very few farmers could be accommodated in the campus. The professors then went out of the campus and offered series of lectures. All of these endeavours brought little improvement. How to achieve a rapid rate of adoption then became a burning problem.

Dr. Seaman A. Knapp, a pioneer man in agriculture set a few demonstration on how to control the cotton weevil pest and what benifit a farmer can accrue from the application of such technologies, cotton weevil was a meanace at that time. Local chamber of commerce provided him finance for setting the demonstration. It was a great success to control weevil infestation resulting a bumper cotton crop. The result was so striking that it received a very wide press coverage which swept the whole of USA. His work proved that a professionally trained person has to live with the farmers and continuously explain and show them what is to be done and how and what should be the benefits. Farmers will then understand and become confident about the benefits. Then they will be ready to accept a practice and apply with confidence and perfec-

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tion. Land Grant College, private business organization as well as farmer organizations began to employ such agents. The demand of such educational services become so intense and wide that the Congress passed Leve Smith Act in 1914 providing all such out of school educational services to all members of each farm family of a country. The service was named as Co-operative Extension Service as it was to be financed by Federal, State, and County Governments with almost equal share. Who should govern this service, the United States Department of Agriculture or the Land Grant Colleges? There was a big tussle. The verdict was in favour of Land Grant Colleges. This brought the fulfilment of the Land Grant College concept in a period of 54 years of working experiences. Thus the Land Grant Colleges of USA are the agriculture institutions in which resident teaching, research and extension functions were integrated at the state level. In the fifties the A&M colleges were upgraded to universities and have been named as Agriculture and Mechanical University or State University.

In USA, Agricultural and Mechanical University is the seat of all agricultural development activities at the State level. The State Department of Agriculture carry out the regulatory functions only. In the University campus, the Dean of the Faculty or Agriculture (Crop & Animal Science), Director of State Co-operative Extension Service, and the Director of State Agricultural Research Service work as a team under the administrative control of the President (Vice Chancellor) of the A&M University.

Since the establishment of the Land Grant Colleges, the institutions have undergone marked changes both in term of structures and programmes. Most of these college have not been developed as multi-faculty University serving the entire population of the state. But Faculty of Agriculture and Faculty of Engineering are the major faculties in these Universities. These Universities carry out research under local environmental conditions identify and innovate appropriate agricultural production technologies as well as means of living, train the local boys and girls on campus about the latest developed technologies, employ them to educate the farmers at the county level as County Extension Agents. The production and distribution of inputs were promoted through private agencies. Since 1914 these universities successfully carried out one after another educational campaigns resulting a rapid rate of diffusion of the latest technologies developed. The system is said to be the secret of USA's fabulously increased agricultural production. In USA only 7 per cent of the population are now engaged in farming and they produce food for half of the population of the world. This great success in Agricultural production in USA is the result of the establishment of an A&M University in each state.