

CONTRIBUTION OF AGRICULTURAL EDUCATION TO
ECONOMIC DEVELOPMENT OF INDIA

by

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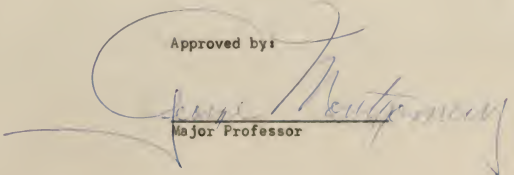

Major Professor

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INTRODUCTION

In case of any developing country, some of the basic requirements for sound development have to be looked into. Amongst most of these, priority will have to be given to education. This has a great bearing in those countries where most of the people depend on agriculture--and this is true of practically all the underdeveloped countries. As Galbraith points out no illiterate peasantry has been able to prosper. Literacy and education go hand in hand. In fact, the prior is the precursor to the latter. The thesis of Galbraith is that education has been a form of investment and that if it is developed, it gives rise to rewards in manyfold ways. This has to be recognized in the years to come.

Education to be effective has to be coupled with infrastructure. This structure will include mostly off-the-farm institutions such as the credit giving institutions. The basis of any development is agriculture and it has to be kept moving. Some of the other essentials include process of capital formation, changes in the institutional structure, foreign exchange and such other. It is not possible for a developing country to do all these things together in view of scarce resources. For this purpose, therefore, priorities will have to be fixed. There are likely to be differences as regards this, even amongst the experts. Each would like to treat his area of study as most important and therefore should receive greater attention. There can be more difficulties as regards setting up priorities particularly in countries like India which has adhered to democratic ways of solving her problems. All the same, if there are no eminent dangers to the integrity and solidarity of a country, there should not be any difficulty in reaching a common agreement in

placing priority on educational development. It may be that an illiterate mass of people can be controlled by a foreign power more effectively and that is why no great attention was paid to this important point in India during British occupation. Even if education was developed to some extent, it did not reach the mass of the common people. May be that literate mass of people can bring about revolution more effectively than the foreign British power remained aloof to this problem and spread education only amongst certain sections of the people. Whatever it is, with independence achieved, the country has to be responsible for educating the masses.

Under Indian conditions, education has been the concern of the State Government and is coordinated with the Central Government through Educational Councils. Though masses are getting literate through educational developmental schemes, the rate of growth is very slow. It is particularly deplorable in case of agriculturists of the rural areas. Since nearly 80 percent of the people live in the rural areas and depend on agriculture, it is here that education must spread amongst them. This is however no easy problem. Taking India as a whole, the percentage of literacy is 23.7 with 33.9 in case of males and 12.8 in case of females,¹ based on 1961 census. The backwardness of women's education is equally thought-provoking. There are social barriers, scarcity of staff, lack of initiative and a number of factors responsible for it. Here the change is very slow, and wherever it has taken place, it is mostly restricted to cities and towns. No country can boast of development and in fact there can be no real development by keeping the better half of the society illiterate. The problem of female education along with others is also

¹ Government of India, India 1962, p. 78.

discussed in later pages.

There are other aspects of economic development. When once the people are reconciled to priorities, for supplementing the growth of education, there has to be necessary amount of capital expenditure. This can come about through its formation inside the country by deliberate attention to saving and putting that capital for production purposes. The recent crisis of China-border dispute has shown to the country that there are savings in the hidden form. The appearance of gold ornaments has been a token of the same. Savings like these, have to be utilized for investing in educational purposes. Defense is a vital necessity to any country but ^{an} equally defensive weapon in any country is the enlightened mass of the people. That is simply unbreakable. Capital may not come forth internally alone. On more occasions the developing countries will have to provide a lot of it. This will raise problems of foreign exchange. It is a tough problem and can be solved by the developing countries only through developing proper international relationship and utilization of whatever credit is obtained to the best possible end. In solving problems like these, a country will have to have an integrated approach and a band of workers who will follow the ideals in team spirit and not each of the agencies following its different ways. Fortunately, India is wedded to democracy and having a stable government is able to achieve its goals through its agency of planning--the Planning Commission at Delhi. This is the ultimate agency which coordinates on matters of national importance and pushes forward economic planning through the ruling party--at present the Congress.

The present report does not deal with all the problems of economic planning mentioned above. It has a restricted sphere limited to education and

more particularly to agricultural education. Even here, it does not refer to higher forms of education popularly termed as college education. Neither the level of education at the higher secondary school is dealt with. Attention is paid therefore to middle school or lower secondary and general education meant for adults, which comes under the category of social education. This form of adult education is mostly being dealt with by the Community Development Organization--a powerful organization which will be covering each and every village by the end of 1963. Under this type of organization, education amongst the adults takes the form of out-of-school education which has developed a technique of itself termed as extension education. The general structure of education in India is given in a separate chapter. The factual information as well as some of the financial details are also enumerated for understanding the magnitude of the problem. The development of education in broader aspects both at the Central Government as well as the Maharashtra Government level are dealt with. It is stressed that development of agricultural education under Indian conditions has to follow the pattern of basic schools. These deal with, besides agriculture, crafts like smithy, carpentry, spinning, weaving, etc. At the high school stage these are grouped usually under the broad category of technical and vocational school education.

History of agricultural education has been traced with a view to understand that agricultural education is in the stage of infancy and has to make a great progress. There are achievements on the higher levels of agricultural education but considerable attention needs to be given at the secondary level and particularly in the schools located in the rural areas. The development of the country lies in the transformation of these mass of people in the countryside through education. Some of the information pertaining to courses,

and curricula may more aptly pertain to higher forms of agricultural educational improvement but this is given to know as to what shape the superstructure may have in the years to come.

The main part of the report lies in the thesis that economic development can be carried through the education of masses in general and spread of agricultural education in the rural areas. The basis of development has to be essentially agricultural and it can only be brought about by paying increasing attention to it. In doing so, the scope of the term agriculture will have to be broadened so as to include other aspects such as dairying, forestry, fish industry. All these are not dealt in detail. What is done is evolving the approach to the developmental problem and some of the changes in the institutional structure as well as suggesting some new ones. There has been no statistical information and this is primarily due to its dearth and limitations. Hence, the analytical approach may not appear very scientific in the statistical sense of the term. Information on most of the points relate to the work of authors like Galbraith, Schultz and Naik. This is more because these are the personalities who talk of education as investment and I feel that it is the right approach which a developing country can benefit from. The Report of the University Education Commission has been the most important document dealing with the comprehensive problem of education and deserves mention. The various types of obstacles in the form of limitations have been discussed and methods suggested to overcome these. Agricultural development and agricultural education in particular can be benefited from foreign assistance. The way of doing it is dealt under "Paucities."

Appraisal of Indian conditions by foreign visitors and Indo-American Team, and the criticism, recommendations and measures of improvement

suggested by the experts from the United States of America in particular, needs consideration. This is in view of the fact that it is the only country which has been able to bring about a successful agricultural revolution. I have drawn on the experiences of some of these.

The case of India--one of the most populous countries in the world (second to China)--where agricultural revolution is being brought about through democratic ways, affords a good ground for introducing improvements suggested by the foreign experts. The problem of agricultural education assumes a greater significance because 82.2 percent of the population is rural and only 23.7 percent of the population is literate.

NATURE OF THE PROBLEM

On the background of these conditions certain facts come out. Some of these are:

1. The problem of education in India, has to deal with the mass of people living in the rural areas.
2. Since most of the people have to depend on agriculture, the education to be imparted should relate to agriculture. Thus,
3. The problem of agricultural education in India has been an Indian Rural Problem.
4. In solving the problem of agricultural education, institutions, programs of education, courses, syllabus should be in conformity with the conditions which exist around these people who are not accustomed to new ideas and modern methods of communication.
5. A consideration will have to be given to the receptivity of these

people, the background they have and the culture in which they have been brought up.

6. The resources which the country already has and the ones which can be developed inside the country as well as the ones which can be developed with the help of foreign assistance should be considered. And lastly,

7. In solving the problem of agricultural education, two things must be looked into namely,

(a) It is a problem which has to be solved, within as small a period of time as possible and

(b) The problem is a magnificent one.

Evidently, the means to be adopted and measures to be taken must come from the people themselves and in this sense, the local participation is of great importance.

India is a country with 460 million of people. The process of economic development of so many people is certainly a gigantic task. Besides, the political framework of the country is essentially democratic. In other words, any program of development cannot be rushed on to the people. Since the resources are few and a number of tasks lie ahead, the country has resorted to "planned development." In this sense, the formulation of the first Five Year Plan and the second Five Year Plan have a definite meaning. At present, the third Five Year Plan has commenced.

The ultimate goal of any plan of economic development relates to the increased productivity, per capita productivity as normally understood. In talking about economic growth or development there are two distinct categories, though both of them are covered by a single definition, "the case of steadily

increasing per capita income." Ackley¹ refers to the first type of "growth" or "development" is that involved in the shift from an "underdeveloped" to a "developed" economy. The second kind is the growth of the already "developed" economy. Though in the ultimate analysis, the phenomenon of development has a blend of both elements, it would help a good deal if these are treated as separate for purpose of analysis of problems and taking measures to solve them.

The problem of economic development of India belongs to the first category. This involves many aspects of cultural and social organization. The most important aspect is the change in the "attitude" of the people. The people will have to be motivated from the non-economic to economic motivation. In this sense, some of the basic requirements of such type of economic change would include:

1. A change from the simple form of economic organization to a more complex form of organization.
2. A growing adherence to the market economy.
3. Abandonment of old ideas and primitive methods of production.
4. Adoption to new techniques of production.
5. Development of social capital in the form of roads, communication facilities, public works, governmental organization.

Summarily, the economic development of India, is the process of "transformation" of the mass of people from the "undeveloped" to "developed" stage of economy. The role of education in this process is of a greater significance.

¹ Gardner Ackley, Macroeconomic Theory (New York: The Macmillan Company, 1961), p. 505.

All the above shortcomings cannot be fulfilled unless there is capital formation or a scope would exist to savings and investment. For this purpose, acquisition of new skills by the majority of the population (and since the majority is rural, by the rural population), in the rural areas, there will be no increased productivity. Since savings can come only through "increases," it is necessary to see that productivity per individual increases. Along with the skills, the abilities of the people, will have to be increased manyfold and their desires to achieve a better standard of living have to be stimulated. The people will have to be fired with the imagination that their development is a process which must come out from within themselves. They have to be ambitious to achieve the goal of economic development set before them by their government. This is the task of education and the ways and means to achieve it is the problem before the educational leaders of India.

There are many facets to this gigantic problem. Briefly stated, these relate to

1. The size or magnitude.
2. The content or subject matter of agricultural education.
3. The resources available.
4. The form of local government or the village administration.
5. Possibility of getting assistance of technical nature.
6. The evaluation of achievements made in the sphere of education.

In order to achieve increase in the per capita productivity and thus get increased saving there has to be an increase in the productivity of agriculture. This could alone be done by spread of agricultural education. Its main task is to change the attitude of the peasants--the farmers--those 60 million cultivators living in rural areas. The attitude of peasants to work and to

profit is more important than his attitude towards resources and technology. This can come in due course. The attitude affects productive efficiency and organization. There is a significant difference as to the attitude to profit and work amongst Indian peasants. The desire to achieve a higher standard of living can be motivated through the process of education. It is not possible to deal with all the different facets of the problem mentioned before, into greater details within a short paper like the present one. But talking of each of the above, an appraisal and a line of action for most of these is indicated. Some of the highlights include:

1. Regarding the size or magnitude, a reference has been made to 60 million cultivators. Added to this strength will be 32 million children, who are already school going. A provision of trained teachers to educate the children will have to be made. This means a great many children will have to be provided facilities of education in the sense of buildings and equipment. It has been suggested that the personnel should precede the material as the former is the prerequisite for the latter.

The illiteracy amongst the cultivators is a matter of adult education and needs a separate approach for males and females.

2. The contents of agricultural education deals with the development of skills and abilities amongst the rural people particularly the school going children. The ability of the children could be oriented to formation of small agricultural clubs like the 4-H clubs in the United States of America wherein they can demonstrate their skill in raising of poultry, cultivation of garden crops. The training to be imported would mostly be of the "basic crafts," which already exist in the village and which are related to agriculture. This would include courses in smithy, carpentry, etc. The children of the age

group eleven to fourteen are receptive to this type of education and can be greatly benefited.

3. The availability of resources is a matter which cannot be restricted to a single village and therefore requires cooperation of a group of villages nearby. This will be in the form of buildings--temples, rest-houses, mosques--which can be made available to the schooling population. In connection with the adult literacy the extent to which credit can be granted by primary crop credit society needs a serious consideration. When credit is linked with sale and purchase of agricultural products this has proved an effective form of agricultural development. The habit of thrift and savings is the motto for which cooperative agencies stand for. A linking of cooperative organization with the subsidiary forms of subsidiary agricultural enterprises like dairying, poultry raising gives rise to efficient means and modes of transport. Since road transport is a vital necessity, this would demand voluntary participation on the part of farmers. Foreign assistance programs for payment of wages to labor will fulfill some of the resources required.

4. Participation by the people in the matter relating to economic development can only be achieved more effectively by facilitating general education and agricultural education in particular as the increase in the productivity of agriculture has a primary demand of the rural mass of people. The decentralization of administrative activities and the establishment of Village Panchayats demand a greater attention to education.

5. A considerable attention needs to be given to the past experiences and failures in the field of education. Mostly these relate to the concentration of powers at the district level--the authorities holding the financial and administrative resources. On many occasions there have been interruptions

on account of these. The rules and regulations framed by government for admittance of teachers did deprive some of the facilities. Relaxation of age limits, the provision of accommodation for the teachers are some of the considerations. An evaluation of such hindrances would help a good deal and the nature of problem under discussion takes a notice of it.

Summarily therefore the problem of agricultural education is basically a rural problem, and requires the machinery, the resources, the participation by the rural people. The spread of education is a continuous process and is a long range plan. But literacy has to be speeded up and hence a part of the problem of agricultural education is related to the adult education as well as the education of the children of the growing age of eleven to fourteen years. The problem is of a greater magnitude because of the number of people involved in it and needs a change in the attitude towards looking at the problems created due to growth of technology.

ROLE OF EDUCATION

It is a common concept that by education is meant imparting knowledge or training to a person. The mental and moral development is the essential attribute of education. These objects are achieved by providing schooling facilities. This may appear simple to understand but the real difficulty arises when it is to be implemented. Talking about the role of education, Professor J. K. Galbraith,¹ states that, "Education must be considered a part of national investment as well as a consumer commodity and that those who

¹ J. K. Galbraith, Economic Development in Perspective (Cambridge: Harvard University Press, 1962), p. 46.

received it thus have a responsibility for its use. In stating the approach to the third Five Year Plan of Maharashtra State, the Government of Maharashtra makes this point clear in the following way. Apart from the fact that provision of certain social services and amenities are a precondition of agro-industrial development, it is now generally accepted that investment on producers is as important even for economic growth as investment in productive assets. Modern theory also recognizes the importance of outlays on general education and medical and health services in the productive process.¹ In this State, the annual intake capacity of technical education institutions is just about ten percent of the total of India. Provision of adequate facilities for education at all stages especially in rural areas, where ignorance and illiteracy are widespread and linking up the programs of education with work and opportunities for employment are necessary, it forms one of the main objectives of planning.²

The productivity of investment as pointed out before needs careful consideration. Its importance is greatly to be recognized in underdeveloped countries, though the developed ones treat it in the same way. For example, in the case of the United States of America, greater attention is being devoted to it. In planning of development in agricultural education or general education, the experience of the highly developed countries can be a very good guide. In reference to the contribution of education in the United States, Gary S. Becker of the National Bureau of Economic Research in a paper presented

¹ Government of Maharashtra, Finance Department (Planning), Third Five Year Plan (Bombay: Government Central Press, November 1961), p. 11.

² Ibid., p. 87.

to the Seventy-second Annual Meeting of the American Economic Association,¹ estimated that the rate of return on total investment in college education (including direct cost to the student, earning figure during the period of studies, and the share of the cost borne by the college) came to nine percent, after taxes, for white urban males. This rate remained the same for both years considered, 1940 and 1950. The average return for all college graduates was estimated to be slightly lower. In the light of this, the investment aspect of education needs to be stressed. Paul Alpert² points out that in underdeveloped countries the absence or inadequacy of general and specialized education may be particularly serious obstacles to economic development. Indeed, the most important economic benefits resulting from the training of specialized workers such as foremen and managers would not be the increased personal income of the individuals concerned, but the total value of additional production brought about by the investment in their training. These observations of the higher education may be of some application to the lower secondary education, which forms the main core of the present paper. All the same, in considering educational development, it is necessary to deal with the different levels of education. What is more important for underdeveloped countries, is the growth of technical education. It is difficult to say categorically whether agricultural education need not be grouped under technical education, though it would be better to put it in a separate category. All the same, there is a section of people in India who want to treat it as a form of technical education and attach importance in a similar way. Technical

¹ Gary S. Becker, "Underinvestment in College Education," American Economic Review (May 1960), pp. 346-354.

² Paul Alpert, Economic Development--Objectives and Methods (London: The Free Press of Glenco, Collier Macmillan, 1963), p. 104.

education normally deals with the skilled labor but it is debatable how far a growing technology would not allow technical skill in the field of agriculture. If development of agriculture is to receive priority in underdeveloped countries it is absolutely necessary to elevate agricultural education on a par with technical education. Importance of technical education needs no emphasis. Talking about this, Paul Alpert¹ points out that even more obvious is the productive nature of expenditures on the technical education that supplies the skilled manpower required for a modern economy, although assessing its impact on an economy is almost as difficult as measuring the effects of general education. Professor Schultz, examining the increase in real income in the United States between 1929 and 1956,² estimated that between 36 and 70 percent of the rise in income not explained by increase in tangible capital per worker can be considered as a return on the additional education of the labor force. While this estimate gives only a very general order of magnitude, it is more realistic than the estimate of returns of college education mentioned above, since it measures the total impact of technical education on the economy and not only its direct benefits to the individuals concerned. It is therefore necessary to evaluate the spread of technical education as well as other types of education. This alone will help to allocate the resources available effectively. It is necessary to bear in mind the relationship of the different types of education (viz. technical, general) at different levels (primary, secondary, college, etc.). This will enable a country to establish a balance between the system and adopt a sound policy for simultaneous development.

¹ Ibid., p. 104.

² Theodore W. Schultz, "Investment in Human Capital," American Economic Review (March 1961), p. 13.

Any lop-sided development is bound to be injurious. A planning is required for proper development right from the primary level to the highest form. A disproportionate growth at the lower end of the educational structure will either delay proper utilization of manpower at the next higher level in lieu of the super structure or waste the human resources. This is a dangerous situation for an underdeveloped country which has to gear up the economy in as short a period as possible.

STRUCTURE OF EDUCATIONAL INSTITUTIONS: AN OUTLINE

Broadly speaking, in India the following different types of educational institutions exist. These are:¹

	<u>Number (1959-1960)</u>
1. Pre-primary	1,351
2. Primary	320,586
3. Secondary	57,863
Vocational and Technical	3,836
Special education schools	56,434
4. Higher Secondary	
Research Institutions	42
Boards of Education	13
Universities	40
Arts and Science	946
Professional	723
Special education	<u>177</u>
Total	442,016

Primary educational institutions top the list, followed by the secondary schools. Besides this, normally one comes across the term, basic educational institutions. This is a category in itself and mostly includes primary and secondary schools mentioned above. Though the present report deals mainly with

¹ Government of India, India 1962, p. 75.

the secondary school system of education, a broad idea of each of the above form is given in later pages. A term "middle" schools is also applied in place of secondary schools.

The number of students on rolls during the year 1959-60 and the teachers was 446.39 lakhs (one lakh = 100,000) and 14.0 lakhs respectively. The following is the breakdown of the total expenditure showing the different sources. During the year 1949-60, this was to the tune of Rs 297.78 crores (Rs 1 crore = 10,000,000 or ten million dollars).

	Percent of Total	Amount in Crores Rupees
1. Government funds	67.4	200.6
2. District boards funds	3.5	10.3
3. Municipal boards funds	3.1	9.5
4. Fees	17.4	51.8
5. Endowments	3.1	9.2
6. Others	<u>5.5</u>	<u>16.4</u>
Total	100.0	297.8

(Source: India 1962, p. 76)

By government funds is meant the grants made by the Central and State governments. The states are divided into districts and for cities and small towns the administrative authorities are the Municipal Boards in charge of education and other civic matters. Actually, these are forms of government organizations. Thus, the share of government is to the extent of about 75 percent of the total expenditure. By way of fees the contributions do not come to more than 20 percent. The breakup according to management was as follows:

	<u>No. of Institutions</u>	<u>Students</u>
Government	95,070	10,309,119
District Boards	189,663	16,066,160
Municipalities	13,171	3,213,231
Private aided	128,949	13,611,607
Private unaided	12,690	1,428,104

The fact emerges from these figures that the number of private institutions (as against governmental) whether aided or unaided have a definite place in the educational development. Education is primarily the responsibility of the state governments, the union government concerning itself with the coordination of educational facilities and determination of standards in respect of higher education and research and scientific and technical education. Coordination in regard to elementary and secondary education is secured through All-India councils. Under the Government of India budget, education forms a part of the category of "Social and Development Services." During 1961-62, the budget provision for education was Rs. 219,15 lakhs of Rupees.

A breakup according to different levels of education (primary, secondary, etc.) for the year 1960-61 is as follows:

Number of primary / Junior basic schools	342,000
Number of middle / Senior basic schools	39,600
Number of high / Higher secondary schools	16,600
Number of multipurpose schools	2,115
Number of training schools	1,307

(Source: India 1962, p. 77)

Obviously, the institutions imparting college education have been dropped from this list. This is because, for imparting agricultural education on a level below the college level, one has to consider these sets of institutions. An analysis of the students according to different age groups is as under.

Percentage of Total

Age group	6 to 11	61.1
Age group	11 to 14	21.1
Age group	14 to 17	9.9

This indicates that about 82.2 percent of the students going to school can be brought under the scheme of agricultural education if training is intended to be started from the initial class. Since, it is desired to tackle the students between the age group of eleven to fourteen, this is the real mass of students who may be considered. Thus, roughly 21 percent of the students can be paid attention to, in case, agricultural education in the middle school is to be spread on scientific lines. The estimated number of pupils under the age group mentioned above was 63.0 lakhs during 1960-61.

A general idea about the progress of education or achievements in the First and Second Plan and Third Plan targets can be seen from the chart.

(P. 19a)

A brief idea as to the content of the different educational institutions mentioned in the structural framework may be helpful at this stage.

Basic Education

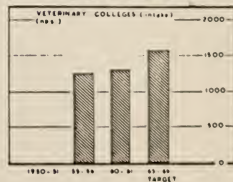
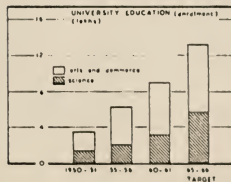
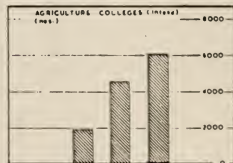
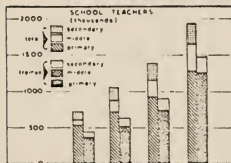
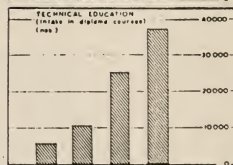
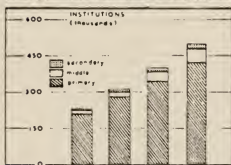
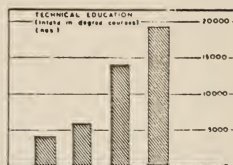
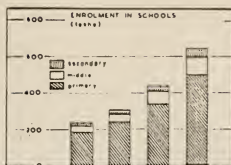
Basic education is now the accepted pattern of educational system at the elementary level. It is an activity-centered curriculum wherein the process of learning is correlated with the physical and social environment of the children.

At the end of March 1961, Junior and Senior basic schools formed 29.3 percent of the total number of elementary schools. The main demand in the resources of the country available for education is for the expansion of

EDUCATION: FIRST AND SECOND PLAN ACHIEVEMENTS

AND

THIRD PLAN TARGETS



educational facilities for children of the age group six to eleven. Therefore, the efforts in the field of basic education are confined at present to introducing in the non-basic primary schools such important features of basic education as do not entail heavy expenditure. Orientation programs for education officers and primary school teachers are being implemented to reduce the differences to the extent possible, between basic and non-basic schools alike. Meanwhile, all the teachers' training institutions for elementary school teachers are being progressively converted into the basic type.

Post basic schools have been started to enable pupils who have been educated in the junior and senior basic schools to continue their secondary education along with the basic lines. Since these institutions have been established by voluntary organizations and their syllabus and curriculum are different from those of the traditional secondary schools, students who pass out of these schools meet with difficulties, both in pursuing higher studies and securing employment. To resolve these difficulties, it has been recommended a common scheme of examination for both the types of schools, and acceptance of crafts of post-basic schools as at par with the elective subjects of multipurpose schools.

The National Institute of Basic Education, set up in 1956, is engaged in carrying out research and offering training and guidance to teachers and administrators of basic education. It also provides suitable material and literature for pupils and teachers.¹

¹ Government of India, India 1962, p. 82.

Vocational and Technical School Education

Vocational institutions include schools for agriculture, arts and crafts, commerce, engineering, forestry, industry, medicine, physical education, teacher's training, veterinary, science, polytechnics and others.

The number of institutions, enrollment and teachers and expenditures on vocational and technical school education for the year 1959-60 is as under.¹

<u>Number of Institutions</u>	<u>Number of Students on rolls</u>	<u>Number of Teachers</u>	<u>Direct expenditure (in crores of Rupees)</u>
3,836	362,893	23,660	9.25

(Source: India 1962, p. 82)

This evidently considers secondary institutions and not higher and university education which is normally termed college education.

Special School Education

Special education institutions include schools for the handicapped and for social workers; schools of music, dancing and other fine arts; schools of oriental studies, adult education, etc.²

¹ Provisional.

² Ibid., p. 82.

Social Education

Social education provides, an educational base for community development programs in the country and includes literacy, use of libraries, education in citizenship, cultural and recreational activities, utilization of audio-visual aids and organization of youth and women groups for community development. Most of the work is done in the development blocks, the center providing certain ancillary services such as the production of literature, research and training.¹

Rural Higher Education

On the recommendation of the Rural Higher Education Committee, a National Council for Higher Education in Rural Areas was established in 1956 to advise the government on all matters relating to the development of rural higher education. The courses as approved by the council and adopted by the rural institutes are: (1) a three year diploma course in rural sciences, (2) a two year certificate course in agricultural science, (3) a three year certificate course in civil and rural engineering, (4) a one year sanitary inspector's course and (5) a one year preparatory course to initiate matriculates into the three year diploma course.

¹ Ibid., p. 82.

IMPORTANCE OF AGRICULTURE AND AGRICULTURAL EDUCATION

Agriculture affords unlimited opportunities for improvement through well trained men and women and that it is only by lifting agriculture to a highly technical business involving scientific knowledge and management ability that the country can hope to develop an economy so buoyant as to stimulate all aspects of national progress and so necessary for human welfare and social justice.

Success will depend on our ability to attract the talented youth to agriculture, the resourcefulness with which we train them and the zeal, vision and dedication that we instill in them. In the ultimate analysis it is the planning of our agricultural training programs today that will determine the quality of all work and progress in agricultural sector tomorrow. Without this basic strength and quality in agricultural education programs, the very spring-board for progressive improvement in any of the branches of agricultural production, research, extension, vocational skill and administrative understanding, real advancement will be impossible. The greatest challenge we face today lies in the sphere of agricultural education.

"The effectiveness of future development of the country will depend on the strength of agriculture. No education is of greater importance to the country than the agricultural education, as the medium of achieving a high level of competence in the farmer, scientist and extension worker and the administrator." This is how, Vice President, M. S. Randhwa, of the ICAR voices his opinion in the foreword to the publication titled as Agricultural

Education in India, authored by Dr. K. C. Naik.¹

In order to meet the needs of the rural areas and the educational system to be satisfactory, Dr. Naik advocates the following three objectives.²

1. Training of farmer's sons who will go back to their farms and work on them more effectively.
2. Training of a variety of persons for education, extension work, etc.
3. Training for research.

The plea forcefully advanced in the Report of the University Education Commission for a vast expansion of facilities for agricultural education, the formulation of an agricultural policy for the country and for ensuring that agricultural education reflects the national agricultural policy, represents in effect the cardinal features that should influence the economic development, social change and democratic growth, which the nation has decided to promote under the national plans.

Improvised solutions or ad-hoc methods to cope up with the immediate problems, have necessarily to be replaced by a long term approach which may foster agricultural education and develop it on an ever expanding scale. Recognizing the basic fact that farming provides the biggest avenue of employment and is the basic source of food and human needs, there can be nothing more important to the country than a suitable system of education for imparting a sound knowledge of agriculture. Achieving a high level of competence in those to be trained at various levels of agricultural education, forms, a major task of the present stage of India's development. It is necessary to have trained

¹ K. C. Naik, Agricultural Education In India (New Delhi: Indian Council of Agricultural Research, 1961), p. 5.

² Ibid., p. 6.

technical personnel both in public and private sector.

The educational arm of the I.C.A.R. known as the I.C.A.E. (Indian Council of Agricultural Education) is doing an important work in this respect. At the present moment, agricultural education is in a state of flux. On the higher plane, Agricultural Universities are getting a start--one of such is already established at Rudrapur in Uttar Pradesh. In the near future, more are expected.

The place of agricultural education is vitally important in production of food. In discussing the role of community development movement, the Food-grains Enquiry Committee feels that the movement can make cultivators more receptive to improved methods of cultivation. The committee feels that this should be supplemented to a much larger degree than is being done, by giving an agricultural bias to education in rural areas, particularly at the secondary education stage.¹ The Secondary Education Commission has stressed the necessity of providing much greater opportunities for agricultural education. The All India Council for Secondary Education framed a syllabus for Agricultural High Schools. By 1954-55, there were only 44 agricultural schools in the entire country, with 3,088 pupils. Of these, 17 were in the state of Bombay and 27 in the rest of the country. This may be compared with the 27,518 ordinary secondary schools and the 4,459,752 pupils on the rolls. It was clear since then that agricultural education has much leeway to make up. The committee recommended that the aim should be that every Tehsil (Taluka--a district unit), should have at least one agricultural high school, and that as far as possible all secondary schools in rural areas should adopt the

¹ Government of India, Report of the Food Grains Enquiry Committee (1957), p. 116.

syllabus for agricultural bias prepared by the All India Council for Secondary Education.¹ The committee has thus stressed importance of spread of agricultural education at the Tehsil-level.

THE BACKGROUND OF AGRICULTURAL EDUCATION²

The story of development of agricultural education in India does not precede beyond 150 years. For most of the time, the village structure had been a self sufficient unit. The industrial revolution and the British Rule has brought about some changes in the system of education. Dr. J. A. Voelcker of the British Royal Agricultural Society was sent by the Society in 1889 to study Indian agriculture. He wrote, "Certain it is that I, at least have never seen a more perfect picture of careful cultivation, combined with hard labor, perseverance and fertility of resource than I have seen at many of the halting places in my tour." It is thus clear that when one talks of development of agriculture in India or agricultural education, the fine attributes of the Indian farmer should lead to plan out a better place for him, in the present scientific era.

The result of Dr. Voelcker's visit and his recommendations is seen in the creation of a post of agricultural chemist at the Government of India level. An Inspector-General of Agriculture and a mycologist were added after ten years. The year 1903 marks an important event. At the Central Government

¹ Ibid., p. 116.

² The account of the background is based on Chapter VII of the Report of the University Education Commission, December 1948 to August 1949, Vol. I (Delhi: Manager of Publications), p. 177.

level an entomologist was added. A foundation of the Pusa Research Institute was laid around the same year. The credit of establishing the Institute goes to Henry Phipps of Chicago who gave a donation of 30,000 pounds for this purpose. It is interesting to note the initial help granted by Phipps of the United States of America to the Pusa Institute which has grown into one of the leading institutes on agricultural research and education now named as the Indian Agricultural Research Institute, New Delhi. The passing of the Indian Cooperative Societies Act in 1904 and the expansion of the central and provincial departments of agriculture mark the next stage of development. In 1906, the Indian Agricultural Service was constituted. History of development of Indian agriculture will not go unworded without the mention of the appointment of Royal Commission on Agriculture in India in 1928, to study agriculture and rural life. It made an exhaustive report on research, marketing, financial credit and rural welfare. One of its main recommendations was that a research institution should be established. The Imperial Council of Agricultural Research is the outcome of this recommendation.

The economic depression of 1929-30, was instrumental in the reduction of Indian agricultural income to about half. However, interest on debts, rents, taxes and the prices of manufactured goods did not similarly fall. Therefore, the plight of farmers became steadily worse. By the end of the nineteen-thirties recovery had begun, but then came the second World War, and attention was centered on military considerations. However, the Council of Agricultural Research has grown and expanded its work. With independent India coming into being, the Imperial Council of Agricultural Research was named as Indian Council of Agricultural Research and about 1951, the Indian Council of Agricultural Education--an educational arm took its root.

PROGRESS OF AGRICULTURAL EDUCATION

The first move in evaluating the present status of agricultural education in the country was made by the Radhakrishnan University Education Commission. It studied the pattern of agricultural education in the United States of America and made valuable suggestions for its adaptation to the agricultural policy of the country. The report has laid emphasis on the need for providing facilities for developing and promoting agricultural statesmanship and leadership.¹

The next important stage of development is in the form of establishment of the Indian Council of Agricultural Education in November 1951. The conference which discussed the establishment of such an organization also gave rise to the sisterhood relations between American and Indian Universities with a view to effecting mutual exchange of professors and students. It resulted in the Indo-American Inter-Institutional Arrangement now in operation between five important Land Grant Colleges of the United States of America and the agricultural and veterinary colleges of India. All this refers to the activities at the center and does not deal with the attempts made at different state-level. The Inter-institutional arrangement has been of invaluable help in developing and improving the standard of many of the agricultural and veterinary colleges in the country.²

The appointment by Government of India of a Joint Indo-American Team to

¹ L. S. S. Kumar, "Progress of Agricultural and Veterinary Education in India," Indian Journal of Agricultural and Veterinary Education (August 1958), Vol. 1:1, p. 1.

² Ibid., p. 2.

go into the question of agricultural research and education and to submit a report on the lines on which these should be reorganized in the country is another important landmark. As days pass on, the implementation of the recommendation of the team is being effected.

The second session of I.C.A.E. (Indian Council of Agricultural Education) held at Lucknow has been instrumental in setting standing committees, working groups and executive committees to enable the council to function more effectively.¹ The outcome of holding seminars for agricultural and veterinary colleges for the southern and northern zone is attributed to the Lucknow Session. The seminar on "Teaching Methods" held at Trioendrum from May 14 to 18, 1957 marks the beginning in this respect. This was followed by the second seminar held at Mussoorie from May 12 to 16, 1958. This has now become a yearly feature and the system is playing an effecting role in spreading agricultural education on sound lines.

EDUCATION IN MAHARASHTRA STATE

During the decennial period 1951-61, the percentage of literacy increased from 21 to 29.7 percent. The literacy percentage among females has almost doubled during the decade, though it continues to be 60 percent below literacy rate among males. All towns and two-thirds of villages have schools. The percentage of children in age group eleven to fourteen going to schools increased from 13.8 to 28.5 percent during the period 1951 to 1961.² This is

¹ Ibid., p. 3.

² Government of Maharashtra, Third Five Year Plan (Bombay: Government Central Press, November 1961), pp. 29-30.

the section which is important when we consider the spread of agricultural education in the rural areas. Primary education is free except in Vidarbha and Marathwada, where steps are being taken to introduce compulsory, free education for the age group seven to eleven. The percentage of the enrollment to the population in the age group six to eleven is estimated to increase from 73.3 at the end of the Second Plan to about 90.5 by the end of the Third Plan.¹ The activity will have to be speeded up a good deal in later years since according to the 1961 census, nearly 70 percent of the population is illiterate.²

Secondary Education in the Third Five Year Plan

During the period 1950 to 1960, the number of secondary educational institutions in Maharashtra State increased from 1,100 in 1950-51 to 2,110 at the end of March 1960; the number of pupils attending them has increased from 3.72 lakhs to 7.47 lakhs during the same period. The pupils in the secondary stage classes--eight to eleven--are expected to increase from 3.15 lakhs in 1960-61 to about 4.97 lakhs by the end of Third Plan. The proportion of the pupils in these classes to the population in the age group fourteen to seventeen is estimated to go up from 13.6 percent to 18.2 percent during this period.

To serve the growing requirements of students who desire to take up scientific and technical courses at higher stages, education at the secondary

¹ Ibid., p. 88.

² Ibid., p. 93.

stage has been made broad based to serve this purpose. This would also meet the needs of technical manpower for the implementation of the Plan. During the Third Plan period multipurpose courses in 29 non-government secondary schools will be introduced and five government multipurpose schools would be strengthened. A financial outlay for this purpose would be Rs. 24 lakhs. Out of this, 50 percent would be borne by the state plan and the remaining would come from the central plan. In addition, ten new technical high schools will be established and some of existing ones, will be developed. A provision of Rs. 57.12 lakhs is made in the Third Plan.

Agricultural Education in Primary and Secondary Schools

The policy of progressively converting primary schools into basic schools continue in most of the states. In case Maharashtra, in the Third Plan, provision has been made for converting 150 full grade schools and 240 lower primary schools into basic with agriculture as the basic craft. There will thus be about 4,000 basic schools in the state by the end of the Third Plan.¹ For purpose of economic development, the spread of primary education is a precursor. Paul Alpert² maintains that it increases the flexibility and the occupational mobility of the population, and awakens interest--and facilitates active participation--in the implementation of development programs. Its general productivity appears therefore to be quite certain. Attempts to estimate the return from investment in primary education have been made in

¹ Government of Maharashtra, op. cit., p. 88.

² Paul Alpert, op. cit., p. 105.

the Soviet Union,¹ where it has been stated that the introduction of a four-year program of universal education produced benefits amounting to forty-three times its cost. The basis on which these estimates have been made, however, is not known.

An introduction of agricultural curriculum in the secondary stage will necessitate consideration of how far the basis of primary education mostly of general nature, has to be broad. It is natural that all throughout the underdeveloped countries, an attempt is made to deal with primary education as universal and mandatory as readily as possible. Under Indian conditions the Directive Principles of State Policy include a provision for free and compulsory education for all children up to the age of fourteen.² This requires a serious consideration of the resource sufficiency, the relative growth of different levels and fields of education and their proper coordination. As pointed out by Paul Alpert,³ a program that concentrates exclusively on primary education but does not at the same time create or develop secondary and higher education is fraught with danger, especially for newly independent countries or those in the process of achieving independence. He cites an example of the former Belgian Congo, where the base of primary education was considerably broader than in most other African colonial territories, but where there were few secondary schools and scarcely any university graduates, has quite convincingly demonstrated the problems that can result from such a structure of education.

¹ Statement by Professor Kairov at a meeting of the International Sociological Association.

² India--A Reference Annual 1962 (Delhi: Government of India), p. 34.

³ Paul Alpert, op. cit., p. 105.

The above way of thinking is particularly important, because an imbalanced growth of primary structure of education, is much more connected ultimately with the higher secondary form of education. Unless, the educated mass of people is able to get a satisfactory level of maintainance--and this would again depend on the rate of growth of technical education, there is bound to be discontent in the educated mass of people. Professor Arthur W. Lewis¹ feels that in order to prevent frustration, discontent, and mass migration of rural youth to the cities, the output of primary schools should be limited to the rate of growth of the modern sector of the economy--that is, those activities which use more capital-intensive methods than traditional agriculture and handicrafts and whose productivity of labor is accordingly higher. This is the only part of the economy able to pay the relatively high wages that, under existing conditions, even graduates of primary schools, putting an excessive premium on education, are led to expect.

Model Public Schools

A new feature in the Third Plan of Maharashtra State is the provision of Rs. 43 lakhs for establishment of three model public schools in the state, which are intended to provide opportunities to meritorious students, particularly in the rural areas, to have good education. Adequate provision has been made for stipends to enable the children and the dependents of the poorer

¹ Arthur W. Lewis, Background Paper: Reflections on the Economic Problem (Oxford, 1961), p. 5.

sections of the community to get benefits of the scheme.¹

IMPROVEMENT IN AGRICULTURAL EDUCATION

Compared to the contribution made by agriculture to the national income of the country, the rural population has not been getting a proper share. There is a heavy burden of taxation and other exactions. Education to promote the interests of agriculture is extremely inadequate. The University Education Commission took cognizance of this glaring deficiency and has made several recommendations.² Some of the important ones are as follows.

1. Agricultural education be recognized as a major national issue.
2. Since in a democratic country, sound agricultural policy must rest on the understanding and participation of those engaged in agriculture, the study of agriculture in primary, secondary and higher education be given high priority in national economic planning.
3. So far as is feasible, agricultural education, agricultural research, and the formulation of agricultural policy, shall be in the hands of persons and groups or associations of persons, who by intimate association, participation and experience, have first hand, penetrating knowledge of agricultural life.
4. So far as is feasible, agricultural education be given a rural setting, so that it shall include direct participation in and experience with agricultural life and practice.

¹ Government of Maharashtra, op. cit., p. 90.

² The Report of the University Education Commission (December 1948 to August 1949), Vol. 1 (Delhi: Manager of Publications), p. 203.

5. A wide-spread series of experimental farms be developed by the central and provincial governments as resources and adequately trained men become available; these experiment stations to represent all major types of soil, climate, crops and topography (the system of experiment stations in the United States of America and the Rothamsted Station in England are good examples), that as nearly as possible every basic elementary school, every rural secondary school and every rural university, should have its own small experimental farm, so that the spirit of research and experiment shall pervade all rural life and that where practicable every experiment station or experiment farm be located in association with a school or college where students on work and study programs may provide labor, while becoming acquainted with experimental and research methods.

6. Since fisheries, like agriculture, deal with food and fertilizer supply and since they have been historically associated with agriculture in administration, a careful inquiry be made as to the wisdom of rapidly developed and far-ranging research on ocean resources as a possible means for rapidly and greatly adding to the nation's food and fertilizer supply.

Two important points emerge from these recommendations. Firstly, that the attack on the spread of agricultural education has to be multifold and engulf even the smallest unit of educational system viz. the primary school. Secondly and more important enough is that in dealing with the problem of agriculture, attention must be focused adequately on allied source of food viz. fisheries. In doing so, equal attention is paid to the manurial constituents of fish-meal and fish cake. Unfortunately, this aspect is not receiving adequate attention on an all-India level, though some of the state governments are making an attempt to develop these natural resources.

Certainly it is absolutely necessary to realize the importance of this oft-neglected problem in talking of food problems. How can an effective way be introduced will be discussed in the over-all integrated structure of agricultural development.

All this indicate that future requirement in the form of human and material resources will have to be worked out in the above direction. A balanced educational policy will have to be evolved with this objective in view. A beginning may be made at the lower primary level with a gradual rise towards the higher forms of education. In doing so, India can draw out benefits from some of the policies pursued in countries like Pakistan, Nigeria, etc. Indicating the line of approach Paul Alpert¹ maintains that a balanced approach that establishes an educational pyramid at all levels, appears to be by far the most appropriate policy for underdeveloped countries. This is the method used by Pakistan,² where, starting with an attendance of 43 percent of school-age children, primary education is not expected to be universal until the end of a twenty-year period. Instead, great emphasis is put on immediate expansion of secondary education--the basis of recruitment of personnel for industry, agriculture, and government. Paul Alpert³ therefore calls for an appropriate equilibrium to be established between general secondary and higher education on the one hand and training for specific technical skills and disciplines on the other. There are great variations in this respect amongst different countries.

¹ Paul Alpert, op. cit., p. 106.

² Government of Pakistan, First Five Year Plan, 1955-60 (Korachi, 1955), Chapter 3, p. 51.

³ Paul Alpert, op. cit., p. 107.

According to data published for 1954,¹ 40 percent of all higher education in the Soviet Union, and up to 44 percent in Communist China, is concentrated on training in the purely technical, agricultural, or industrial fields. This orientation reflects an overriding emphasis on production, at the expense of all other aspects of civilization. In India, on the other hand, the proportion of technical instruction in higher education is only four percent, which seems insufficient. In the United States, where this proportion is ten percent, it has been stated that requirements for trained technical personnel are not being fully met.²

In order to estimate requirements of the above type, it is necessary to carry out manpower surveys. To begin with the surveys should restrict to major fields such as agriculture. This would obviate errors in the development of educational systems in different fields. Where resources are inadequate and the pace of development is not rapid, such errors would be costlier and would deal to a great deal of wastage of manpower and the material. Ultimately, it would halter the economic growth to a greater extent. A reference is invited to the survey of this kind conducted for Nigeria³ included a projection of the country's requirements for the next ten years for all major categories of manpower that called for senior or intermediate education. Such surveys help to undertake a substantial expansion of the resources allocated for investment in education.

¹ United Nations, Report on the World Social Situation (New York, 1957), pp. 75, 76.

² Paul Alpert, op. cit., p. 107.

³ Federal Ministry of Education, Nigeria, The Report of the Commission of Post-School Certificate and Higher Education in Nigeria, Investment in Education (1960), p. 10.

CURRICULA FOR AGRICULTURAL EDUCATION

Curriculum or list of courses prescribed has to do a lot in the quality of education imparted to students. This will also be responsible to achieve a particular attitude to a problem and search out the method of finding a solution. The fact that there is a considerable rigidity in agricultural curricula in India has to be admitted. The efficacy of a rigid or flexible curricula can be decided in reference to the objectives in view. Dr.

Filinger talks of eight important objectives.¹ These are briefly:

1. Impart to students a body of useful agricultural knowledge.
2. Develop skill in agricultural work.
3. Prepare for a vocation.
4. Making better citizens.
5. Improve means of communication.
6. Develop abilities to think.
7. Develop creative abilities.
8. Improvement of abilities.

There is no dispute that if Indian agriculture is to develop, as it must, more trained men will need to take up farming as a vocation. When Dr. Filinger talks that only one percent agricultural graduates become farmers and more students should be trained for farming rather than away from farming, there is a greater truth warranted than the figure speaks. In case of the United States of America it is reported that as good as 20 percent of

¹ G. A. Filinger, "Rigidity versus flexibility of curricula," Indian Journal of Agricultural and Veterinary Education, I.C.A.R., New Delhi (August, 1958), Vol. 1:1, p. 30.

agricultural graduates turn back to farms. By agriculture is meant agricultural business.

The rigid curricula system is reported to have the following arguments in favor.

1. It maintains high scholastic standards.
2. It assures a thorough coverage of the field of agriculture.
3. It gives agricultural teachers who conduct external examinations additional income to augment their meagre salaries.¹

It is worthwhile in comparing the results of the first two objectives by resorting to the system of some "voluntary accreditation." This will however necessitate more trained personnel. The elective or flexible curriculum system covers a single phase of agriculture with thoroughly enough knowledge of the "subject" to exercise reflective thinking and solving problems.² Any type of system of education must perform this important task and progress is essentially an outcome of a thinking process.

Dr. Filinger talks of higher agricultural education but the flexibility of curriculum is equally important in case of laying a stress on primary and secondary level, as this will alone prepare a better quality of students pursuing higher forms of agricultural science. Thus the fact is that the problems of training and of the curriculum in agricultural institutions should be made the subject of special study and periodical review. The University Education Commission gives some of the guiding points in this respect. These include (1) a comparative study of the methods of education and the curricula

¹ Ibid., p. 32.

² Ibid., p. 31.

in the countries which have shown significant progress in agriculture, (2) an analysis of the occupations of the agricultural graduates and former students of our own agricultural colleges, (3) a discussion of the specific objectives of agricultural education and their relative importance, (4) an analysis of the element of the basic sciences essential to an understanding of the technical courses, (5) by an analysis of the requirements of the agricultural industries in the country, and (6) by an inquiry into the causes of failure in agricultural vocation.¹ A flexibility of curriculum as pointed out by Dr. Filinger which is an important characteristic of American education, would help a good deal in putting some of these above suggestions of the commission.

ROLE OF EXTENSION

In the field of agricultural education, extension as a method of teaching has acquired a special significance. This is mostly due to foreign advisers (particularly those in the United States of America) who are responsible for the usage of this term. In fact as Dr. Busset points out, in most countries, the word "Extension" has become a symbol, a remedy to all the difficulties that beset a country seeking self sufficiency in agricultural production. It is the secret ingredient which can be added to whatever requires solution in the rural field.² But in applying this system, we must understand what constitutes

¹ Report of the University Education Commission December 1948 to August 1949, Vol. I (Delhi: Manager of Publications), p. 200.

² Glenn M. Bussett, "Agricultural Education in India--The role of extension education," Indian Journal of Agricultural and Veterinary Education (August 1958), Vol. 1:1, p. 50.

the substance of extension. The essence of extension has to be properly understood to avoid confusion. Basically we have to be clear as to the distinction between "Extension" and "Extension Services." The latter can be carried out effectively only when the former could be understood properly. Extension is how the matter is put across to the cultivators. It includes "Essential acts" and "Supporting operations."¹ This distinction is particularly important as there is growing confusion as regards application of the technique of extension which follows after the basic information about certain facts is gathered. In this sense, whilst talking about the application part of a problem one is likely to forget the precursor to extension. In the pages to follow amidst other things how the accumulated facts could reach the door of farmers is discussed.

ORGANIZATION FOR SPREAD OF AGRICULTURAL EDUCATION

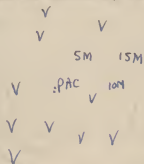
The key to development of masses lies in the diffusion of scientific knowledge from the test tube to the doors of the people. The knowledge may be agricultural or pertaining to home science. The former is being available to some extent, but the latter requires a greater consideration. This would require a psychological approach and hence a need exists for the evolution of teaching methods which would suit the environment. There has to be a specific application of educational psychology with reference to extension education. In the case of the women sector, there is an urgent need for an understanding of the problems which confront the family, and the possible solutions. If the

¹ Ibid., p. 52.

improvement of the standard of living is to take place, an equal attention to the kitchen and field will have to be paid.

Theory of Concentric Circles of Diffusion of Knowledge

I have been thinking of this theory for a pretty long time. The study of the Smith-Lever Act of the United States has been helpful in giving it a more concrete shape. Briefly stating, the theory states that scientific knowledge in a laboratory can be passed on to farmers (and others) by making circular zones of inhabitants near the center of learning. In case of any village, the laboratory of scientific knowledge is the Agricultural College like that at Poona, or the agricultural institution. For example, concentric zones may be formed as follows; in case of villages near Poona.



PAC = Poona Agricultural College

V = Village R_1 = Radius of Concentric Circle No. 1.

5M = 5 Miles R_2 = Radius of Concentric Circle No. 2.

10M = 10 Miles R_3 = Radius of Concentric Circle No. 3.

15M = 15 Miles

The responsibility of carrying out the extension program will rest with the Agricultural College only. It will be the official organ for the dissemination of knowledge on matters relating to agriculture and home economics. At present, an extension wing without a Home Economics section exists. This may be modified suitably and made responsible for a particular zone earmarked.

The radius of the circle may be decreased or increased, depending on the facilities available. Normally, a radius of five to ten miles is enough from the point of view of maintaining efficient contacts with the farmers. Besides, under the present methods of transport, higher radius of concentric circles would mean more difficulties for the extension work. It makes it impossible for the extension worker to establish proper communication of ideas. As the road system develops, the radius can be enlarged so as to cater to the needs of a greater number of people.

Enactment for Extension Work

Like the Smith-Lever Act of 1914, a piece of legislation termed as Old-Young Act may be undertaken by each state. The activities of extension will be included under this act, and the Research and Education Centers already developed and to be developed will be made responsible for diffusion of information to rural areas. I have a feeling that enactments of the type of the Smith-Lever Act of 1914 or the Hatch Act of 1887 or the Morrill Act of 1862 have done their excellent job in mapping the structure of rural development in the United States. I would expect similar provisions in the Old-Young Act envisaged above. The above acts in the United States are very specific and clear in implementation. The terms Old-Young Act, contemplated above, have the basis as follows. Whereas it is proved that technological progress in countries like the United States has helped to solve a number of economic and social problems (though it did create a few difficult ones), it therefore be enacted that rural development in India may be directed on lines of improved technology in different phases of village life. In doing so,

however, every attention will be paid that old culture of the villages which has admirably stood the passage of time for thousands of years, will be suitably modified so as to leave place for young ideas. The financial structure at the state level will be suitably modified so as to give rural people a chance to spend their money for their upliftment. The Act will take into consideration that money so spent, will be for a community progress only and will discourage every attempt focused on individual betterment.

Use of Demonstration Method, Educational Tours, Etc.

The basic core of extension work is demonstration. Things are learned better through demonstration. This may take different forms. Visual form is more important. An appeal to the eye is more important than other senses. In the process of learning, the eye is more important. Military studies denote that 75 percent of learning is obtained through the medium of vision. Mere talk does not help. The key to knowledge refers to an appeal to five major senses such as eye, nose, ear, mouth, and hand. But the first one is the most important of all. Referring to the villages near Poona, there are plenty of chances to make use of the demonstration method. A visit to the Agricultural College, Poona can help one to understand the usefulness of the Japanese method of paddy cultivation. The Artificial Insemination Center near Kirkee would help a good deal in tackling the problem of "purebred" animals. A number of other examples can be cited. This does not mean that attempts are not made on these lines. The issue is that in order to make these attempts effective, the gears have to be changed properly. Pictures and photographs of different improvements in agriculture and home economics would go a long ways

in convincing farmers of the new methods they can take up. As the Chinese proverb goes, "One picture is worth 10,000 words." A two-way flow of information from the field to the laboratory is absolutely desirable and can be obtained through effective extension programs.

Educational Promotion Work

If knowledge is power, education of masses will receive a priority in case of extension programs in a country like India. No real improvement can be obtained if the very people for whom information from the test tube is to be carried are not able to read or write. The constitution of India has helped a good deal to confer (see Article 326) the right of vote on every person who is a citizen of India and who is not less than 21 years of age. That would help to lay good foundations of democracy. But as extension is the educational arm of the U.S.D.A., such is not the case in India. That offers, therefore, a great scope for the spread of education through the extension service. Obviously, in thinking of such a type of work, channels of communication require a greater consideration. A number of channels of communication such as radio, newspaper, motion pictures, 2" by 2" slides, flannelgraphs, puppet shows, posters, and television sets exist in the United States. So far as India is concerned, there is no spread of television at all. In case of any country, dissemination of knowledge through such media of communication must depend upon the resources available. One should not be led away with the idea that all are important and all are necessary. It is certainly not so. The question of which type of medium of communication is suitable to a country would be primarily an economic one, and would depend upon the effectivity of

the particular type. It is reported that the United States spends something like 400 pounds of paper per capita per annum, as against the all India figure of two pounds per year.¹ To achieve such a target would take a long time. Perhaps simple blackboards or flannelgraphs would serve a great purpose. Use of rural broadcast set may be encouraged. India has taken up to it and it has to be vigorously pursued. By this medium, one can reach a greater number of people. In the absence of literacy, this is an effective medium. Above all, motion pictures have a great appeal. Rural people like it and are prepared to walk miles after miles for witnessing a cinema show. Such is the terrific impact of this modern method of communication. This is because 80 percent of knowledge can be had through sight. An extension worker should not sit silent because certain things are not available. He must start his work with what he has, and wait for the future. Tolerance is an important attribute.

Place of Home Economics in the Set Up

In reaching the development of the farm, it is made clear that farm cannot be separated from the farm house or the household of the farmer. Though women have a greater role to play inside the house, women in the village come out on the farm and are more near the nature and know about agriculture and particularly about the cattle, the dairying animals. Home economics or popularly termed as home improvement has a number of aspects. The Home Economics Agent has to deal with education amongst the women. This may mean creating understanding of problems of nutrition, clothing for the children,

¹ "Chemurgic Digest," June 1959, Vol. 18: 6.

sanitation inside and outside the home and family planning. Of the most important may be categorized the problem of sanitation. Who else can be the fittest agent than the Home Economics Agent who can reach women in developing cleaning habits and homely surroundings. There will not be two opinions in saying that women have greater aesthetic sense than men and if they are convinced about a little change in the ordinary way of keeping surroundings clean they would most willingly take up to it. An ugly sight which attracts attention is that of cow dung cakes, covering the walls of a mud house. The other place is where there is waste of cattle feed and urine. Home economics agent can start with problems of sanitation which ultimately include improvements in the health of the people. The place of rural sanitation in village improvement need not be emphasized. Speaking about this Gandhiji remarked,

If rural reconstruction were not to include rural sanitation, our villages would remain the muck-heaps that they are today. Village sanitation is a vital part of village life and is as difficult as it is important. It needs a heroic effort to eradicate age-long insanitation. The village worker who is ignorant of the science of village sanitation, who is not a successful scavenger, cannot fit himself for village service.¹

This is therefore one of the serious problems. The home improvement worker, the other name which may be equivalent to Home Economics Agent, can reach the women folks and persuade them in this respect. There are two types of work for the worker. The first one is of a stationary type and the other one is of the moving type. Even in the same village, regular visits to some of the houses are required. On many occasions it is the latter type of work which warrants greater attention. There has been practically no awakening in rural sanitational work and the reasons are not always economic. It is predominantly

¹ Kurukshetra--Anniversary Number (October 1954), Vol. 3:1, p. 38.
(Quotation by the editor.)

attitudinal and at times just carelessness. The contacts can be established at two more places with the women folks. The wells, where from drinking water is taken out. Often one would find a group of women carrying head loads of water. Problems of hygiene and sanitation touch here also. Secondly, and this is the case, where river water is available where bathing and washing of clothes takes place, the worker can pick up threads of problems of sanitation. To sum up, the Home Economics Agent has to analyze the situation where ever she works. She should have sufficient freedom to put into her ideas into her work and should not be asked to stick up to any set pattern. Often times, she is warned to do what the Social Educational officer wants her to do whether it is applicable or not. It is the local element and the local problem which should receive priority and not the other way. Village development does not mean taking up a great many number of items and leaving them halfway but even if a few items could be successfully demonstrated and are watched vigilantly an example is set towards tangible end.

Adult education is again a vitally important subject and may be tackled in the different ways. Here again, there are no set patterns. The greatest difficulty in the matter of problems related to educational, is lack of flexibility. Always, set pattern of working, leaves a little chance for initiative on the part of the worker. Literacy may be spread for example through picking up a few lines of stanzas or verses in the popular devotional songs and starting the habit of reading and writing those words. Let the women talk out the musical notes which the Home Economics Agent may pick up as her starting point. This process would create interest and make reading or writing more lively. Education is after all a dynamic process and a social worker has to have freedom in choosing the right method according to her

choice. Fortunately, community development projects when started in the country took an immediately mainly through the flexibility, the scope for initiative of the worker and decentralization. But as years pass by, it is feared that red tapism and the routine of the "Governmental Service" is likely to affect this educative process. If the enthusiasm in the community organization is not kept alive and fades, the organization is bound to collapse. When the educative process shows an abrupt rise and a sudden cessation of activities, one can make a note that it is based on the external stimuli and has not based on local initiative. There has been a tendency to mark out the progress of this developmental process by increasing the number of villages under its jurisdiction but it is no wonder if the wave of so called "community development" has swept over a greater number of villages and left them unaffected but showing a few signs like the deserted colonies. All this is meant, that work of the Home Improvement Agent or in fact any village worker must be evaluated as a whole and not piecemeal.

AGRICULTURAL EDUCATION UNDER PLANNED DEVELOPMENT

Although economic planning is intended to be brought about through Planning Commission sitting at Delhi, Indian Government has realized--and not very late--that real development must come about through the development of local resources. The task of the Commission essentially lies in that of effective coordination and looking after the over-all development. It is also meant for finding out ways and means for allocation of scarce resources and set a balancing economy for a country as a whole. In this sense, it has to check lop-sided development of any region. It thus acts as a balancing center for

India-as-a-whole. If the regional development takes place on proper lines it will ultimately lead to development of the whole country. Perhaps moved by this economic motive, the Indian Union has been split into linguistic states. There have been shortcomings in doing so, but in effect if it leads to balanced economic development, the experiment will culminate into strength and solidarity for the country as a whole. A step next to the above action, India wedded to democratic values has started towards another venture. A lesson of the Community Development Projects has brought administrators to the conclusion that local participation and local initiative will lead to a permanent foundation of economic development. This is the basis for democratic decentralization of Panchayat Raj being instituted in various "state governments." India is said to have been fortunate in getting from the Britishers the legacy of Indian Civil Service (now termed as Indian Administrative Service) and to a certain extent it did help to keep the administrative machinery geared at the right direction. Dr. Arthur D. Weber¹ is right when he states,

India has a stable government and intelligent leadership. The British left India one of the best civil service organizations ever developed in a colonial country. The old Indian civil service now has the title of Indian Administrative Service. Most of these officials are well-trained, sophisticated intellectuals.

But referring to the shortcomings he went on to say (and this is perhaps more important),

Their weakness, perhaps is that they are oriented toward the maintenance of law and order and the collection of taxes, not to economic development (underlined by me). On the other hand, India's leaders and civil servants generally, have recognized their weakness

¹ Dr. Arthur D. Weber, "India is Progressing, But Her Pace is Slow," The Kansas City Star (April 21, 1963), p. 4E.

by their unusual willingness to seek advice from other countries, especially from the United States.

One has to be appreciative of the American frankness in this respect. The fact that the old Indian Administrative System was based for efficient collection of revenue and did not quite naturally, pay attention to the enlightenment of the farmer who was paying the land taxes. With achievement of freedom, the same administrative structure had to be continued but people realized that it is giving rise to lot of red tapism and bureaucracy. The foreign-aid programs, and the unofficial programs like the Ford Foundation working in India along with other agencies gave rise to an indication that democracy to be put into action must get decentralized. Concentration of power at higher secretarial level--state level or the central level--does not give rise to development of local initiative. If this is not done, when the influence of the external stimulus is taken out in due course allowing the local system to develop, the improvements brought about go to waste and the old system regains like the touch-me-not plant. Doubts are there and very rightly on certain score, about the success of the decentralization in an illiterate country like India. There has been greater appreciation about the intelligence of Indian farmer, and there lies hope. All the same, the fact is that he is not commercial minded. Dwelling on this point Dr. Weber points out,¹

Because Indian farmers have habitual ways of farming, ingrained through centuries of experience, they are only now becoming slowly oriented to commercial activities and economic development. Agricultural extension workers are trying to understand the reasons why farmers resist change and are taking steps to cope with these obstacles. These workers are assessing the Indian farmer's aversion to taking risks and are devising ways to motivate them to set higher goals for themselves and their families.

¹ Ibid., p. 4F.

I have quoted Dr. Weber extensively. What does this mean for the farmer and his family or to his school going children. In these quotations are some of the answers I seek for educational development. The points emerge out are:

1. The farmers have to be motivated so as to be commercial minded.
2. In doing so, we should analyze why he is (or his children) are avert to risk.
3. What hinders taking risk.
4. Does the educational system give answer to forsake the habitual ways of farming ingrained through centuries of experience.
5. Which agencies can work out towards achieving above end in view.
6. Whether he (the farmer) has the necessary means and ways. And finally,
7. Is it that what is required by the farmer and his family is being put to his door or that a model being copied and not adapted to his conditions, simply because it worked under some conditions very effectively, is being thrust to him to digest. These are some of the points which the democratic decentralization are supposed to answer. It is the challenge to the rural population that given technical assistance, authority and finance, what development can occur in his way of living. The educational set up at the different stages (primary, secondary, etc.) can help this to some extent. There are two facets of agricultural education I consider. The one, refers to its introduction for the children within the age group eleven to fourteen and secondly the adult education.

AGRICULTURAL EDUCATION AT THE LOWER SECONDARY LEVEL

The education for this group relates to both boys and girls. There are

no separate statistics for this age group to show the disparity of levels of literacy. The census of 1961 has shown that, as against a literacy rate of 34 percent for men, only about 13 percent of women are literate.¹ Importance of female education needs no emphasis. Recognizing this fact, under the Third Five Year Plan, of the resources available out of Rs. 175 crores devoted for the education of girls, about Rs. 114 crores are for education at the primary and middle school stages.² As a European educationist has pointed out, the education of girls is in a sense even more important, than the education of boys. To educate a boy is to educate an individual but to educate a girl is to educate a family.³ In terms of priority, it would be proper to concentrate on teaching the children of the above age. Group as against the adults. The problem of adults require a different approach and will be discussed at some other place. It is a question of out-of-school education primarily and need not have curriculum and courses as in case of school education. In terms of urgency, the children of the above group deserve greater attention.

WHAT SHOULD BE TAUGHT--SOME BASIC CONSIDERATIONS

Agricultural education for the above group should mostly deal with more and more of the basic type. There has been a growing recognition of this fact and the process requires speeding. As pointed out elsewhere, basic education

¹ Government of India, Planning Commission, Third Five Year Plan (1961), p. 591.

² Ibid., p. 592.

³ Humayun Kabir, "Female education in Rural Areas," Kurukshetra (October 1954), Vol. 3:1, p. 14.

deals with an activity-centered curriculum wherein the process of learning is correlated with the physical and social environment of the children. Education is imparted through socially useful productive activities like spinning and weaving, gardening, carpentry, leather work, book craft, domestic crafts, pottery, elementary engineering, etc. The courses or syllabus in this respect should be sufficiently flexible so as to allow the consideration of the "regional development." The term regional development has a special significance. Under the present scheme of Panchayat Raj, there are changes in the structure of district (district is a unit of administration in India. The next higher administrative unit is the State) and in the pattern of rural development. Its significance lies in the fact that, subject to guidance and supervision by the State Government, the responsibility for the implementation of rural development programs will now belong to the Block (Community Development Block) Panchayat Samiti working with Panchayats in the villages and the Zila Parishad at the district level.¹

My idea of regional development comprises of marking out zones of agricultural development based on economic characteristics. Obviously these will not be the same as the present administrative units next to district viz. Taluka, but based on the soil and cropping pattern, irrigational resources, supply of labor, possibility of developing dairying allied industries, educational facilities existing, etc. These Agricultural Zonal Blocks will be further divided into educational districts. Such districts will be considered for development of agricultural education. Because of varying characters it is likely that variations in the courses and subjects is bound to exist.

¹ Government of India, op. cit., p. 338.

Certain subjects such as general science, social studies, languages--regional and national, history, elementary mathematics will have a usual place. But a special elementary course in regional development comprising of agriculture, irrigational resources, lines of development, human labor and cattle population will have a more definite place. Observations on the village studies would form the basis of such a course. It will not be difficult for the boys of the age group of eleven to fourteen to pick up threads of the future lines of development of his region which may be pursued by them. The district or the Zilla (Zilla means a district) Parishad has a definite responsibility for pursuing lines of possible development. The village Panchayat Samitees can know better the needs of the villages which are the integrating structures which are linked with the Zilla parishad.

While framing the course of study, a provision for electives is absolutely necessary. Where brick laying or fishery affords better scope, these should find a place in the syllabus. The courses should be oriented towards facilities already existing in different regional developmental zone and not adhere to any set pattern. All this relates to what should be taught and the basic consideration required for that purpose. There are some shortcomings in implementing these ideas. Some of these are:

1. Paucity of training staff in general.
2. Paucity of female teachers specifically.
3. Shortage of finance.
4. Shortage of buildings.
5. Shortage of equipment.
6. Shortage of land.

Paucity of Training Staff

Each of the above items is important in itself but the first three should receive priorities ordinarily. Amongst these, important is an acute shortage of trained teachers. Shortage of teachers particularly in the rural areas has been a crying need of the day. Whereas in case of urban areas there is a paucity of trained teachers, there are no teachers at all in rural areas even if it is decided to carry out work without trained teachers. Schooling facilities require a greater consideration. The All-India Educational Survey, which was undertaken during 1957-59, revealed important gaps in the distribution of educational institutions. Thus, for the country as a whole, in 1957, about 29 percent of rural habitations and about 17 percent of the rural population (35.86 crores or 82.2 percent of the total population of India in 1961)¹ were not served by any school. In some states, these proportions were very much higher.² Provision of trained teachers in agriculture requires consideration of short training courses in agriculture, animal husbandry and these have to be conducted in vacations. Like the Primary Training Colleges, a network of the Agricultural Training Colleges with duration of nine to twelve months will have to be opened. These are besides the agricultural schools or higher secondary colleges. There has been no requirement for agricultural graduates to undergo any training program in educational methods of teaching, like the one for a graduate in arts or science. Normally such graduates have to undergo a training course leading to a diploma or a degree (Bachelor of Teaching or

¹ India 1962, p. 24.

² Government of India, op. cit., p. 574.

Diploma in Teaching) to get permanent employment. Even if it may not be feasible to have similar training for agricultural graduates for the present, it might be useful to start an Agricultural Training College for primary and middle school teachers. A proposal of establishment of this type of project has already been put up by the Government of Madras.¹ This requires consideration by different state governments.

Paucity of Female Teachers

As indicated before, there has been no bifurcation made as regards education for boys and girls separately. Though some favor a separate schooling facility for girls this will entail duplication of expenditure and is not absolutely necessary. There is great disparity between the education of boys and girls as pointed out before. Pointing out the reasons of very slow progress in the rural areas Humayun Kabir points out the following few reasons.²

1. Lack of women teachers.
2. Single-teacher schools with teacher as a man.
3. Teachers are often comparatively young men while village girls who attend schools are on the whole somewhat older than school girls in towns.

It is true that these factors make the parents reluctant to send the girls to the school. Under Indian conditions where social structure is comparatively rigid, the problem of education becomes complicated. Separate schools for

¹ Government of Madras, Report of the Committee on Agricultural Education (Madras, 1957), p. 19.

² Humayun Kabir, op. cit., p. 14.

girls amounts denial of educational opportunities given to boys. The educational problem may be solved by creating opportunities in the village for the girls who are already educated. The beginning may be made to see that equal proportion of male and female teachers is aimed at. Some of the other suggestions are:

1. To have married couples in a two-teacher school.
2. The wife of the school teacher serving as the school-mother. She may help the girl pupils in gardening, sewing. A small honorarium may be paid for this purpose. The idea in this case is to create confidence in both the girl pupils as well as the parents.
3. Provision of living accomodation for the teachers coming from outside the village.
4. Relaxation of age-limit for recruitment of women teachers as well as prescribing workable qualifications--not to lay down rigid qualifications about diploma in teaching, teaching experience.
5. Investing the authority (power) of appointment in the head of the school and delegation of powers about drawal of pay and allowances.

It is hoped that under decentralization of administration most of the difficulties would be solved and a good impetus will be obtained for spread of education of girls. The problem of accommodation is serious in the rural areas as well as the urban areas. Often times, the teacher is reluctant to bring his wife on account of failure to get proper accommodation. If the school could be provided with a small room and a verandah, it would obviate the difficulty. Besides this, it will help to have regular attendance of the teacher in the school. In order to gather strength for spread of education the school should be located within walking distance.

Relaxation of age limit may come in the way of the younger women--the age limit normally is 25 years; as the posts would be filled in by those who are older. The opportunity for the young girls making education as their career, will be denied. This is inevitable for some time. In case of social education, women who are married and do not have to look after their children--in the sense, their actual presence is not required--may be recruited. Such of the teachers would have reached maturity as well as may be able to run single-teacher schools effectively. The age of entering the profession may be raised up to 40 to 45 years. Rigidity of recruitment rules has been also one of the factors which hinders progress. A large section of people (women sector) kept illiterate retards economic progress as well as gives rise to unbalanced social structure.

For boys and girls formation of small agricultural clubs on the model of 4-H clubs in the United States of America may be tried on an experimental measure to begin with in the suburban areas. Till a greater section of boys and girls get training at primary schools and the elementary middle school, there will not be a better hope of this type of organization for some years to come.

Limited Financial Resources

One of the obstacles in economic development and educational development in particular is the paucity of finance--the factor mentioned before. Finance is required for two main purposes. Firstly for purchase of equipment and secondly, for payment of remuneration to teachers. To a certain extent, where construction work of buildings is to be undertaken, payment to labor forms an

important item. The problem of agricultural education would center around the prerequisites such as:

1. Whether sufficient funds would be forthcoming for payment to teachers' salaries.
2. Which item should receive priority--the teachers or the building and equipment.
3. For demonstration and other purposes sufficient land or cattle will be forthcoming.
4. How far cooperation of the villagers be obtained.
5. Do facilities exist for getting assistance from sources outside the village, town or even foreign countries.

Education is a states' concern, but for educating the masses, it is obligatory for the administrative agency to make a provision. In order that financial procedure should be smoothed, sanction for expenditure on education should be in the form of lump-sum expenditure and should be based on a proportionate expenditure out of the land revenue. A certain part of land revenue has to be set aside for this purpose. Other sources of taxation might also be explored. Like the Local Fund Cess--a part of the fund of the Revenue, an educational cess for the village as a whole may be levied. It has to be graded and the amount collected will be utilized for educational purposes. The taxation has to be reduced as literacy increases. In the initial stage not more than one Naya Paisa per each illiterate person may be collected on the monthly basis. This tax may not be felt by the people, but will at the same time provide for a small equipment to start with. The village Panchayat may also enforce an Excess Cattle Property Tax. An estimate may be made about the optimum size of cattle power which can be sustained by

a village. The idea is to discourage keeping or multiplying unwanted bullock power and encourage scrubbing the bulls. Also, an indirect check is implied on the growing cattle population and the waste of resources. The taxation should again be of a progressive nature. Though well water will not be taxed, non-utilization of water resources for a continuous period of three years would be subject to tax. The villages near the river water would be charged by the state or the (district) Zilla Parishad a water-usage tax. Like the Riparian Doctrine, some common-law will be passed by the state legislature. The Village Panchayat may introduce Land Revenue Exemption Certificates for the cultivators producing an above-average yield and such certificates be utilized for granting cooperative credit. The tax structure should be so devised as to allow graded reduction in land taxation with increase in per capita productivity.

As to whether in the scheme of agricultural education, priority should be given to have buildings to begin with or the teachers, it is obvious that buildings can follow teachers. The village temples, town halls and Dharamshalas (rest houses) be utilized in the initial stages after carrying out a few repairs wherever necessary. Owners of the temples which are recognized as private property may be granted tax-exemptions if the premises could be used for educational purposes.

Wherever new construction work is to be undertaken possibilities may be explored to use local voluntary labor as well as exploring avenues if payment in the form of wages to labor under PL480 and such agreements can be made. In Pakistan for example some of the educational buildings could be built under the Foreign-Assistance-Program.

Shortage of Land. In countries such as India where land shortage is a

greater problem, possibilities should be checked whether common land (pasture land--Gavkuran) or any land which is forfeited exists. It is likely that some progressive farmers may like the pupils to learn the cropping system on the farms or seek their assistance during sowing, harvesting, etc. The agricultural courses may be so timed as to take maximum advantage of the facilities already existing in the village.

Courses of Study, Textbooks and Other Equipment

A list of some of the common subjects like general science, mathematics, social studies, history and a few electives be prepared. The teachers in the primary and secondary schools should be encouraged to write out the books at an appropriate remuneration. The Government has been already working on nationalization of textbooks. This will enable to reduce the cost. The educational department in coordination with agricultural and other departments should be encouraged to bring out their own publications on the various activities of their departments as well as encourage the teachers to translate or write suitable textbooks. Since the cost of paper and printing are important considerations, government may be able to secure cooperation of private agencies.

Adult Education for Men

A reference to the Home Economics Agent and her role in spreading literacy amongst women has been made before. A better place to start with adults, getting interested in literacy is at two places. Firstly, a cooperative

credit society which has been taking root in the rural areas may, appoint Social Education Advisers. Such an attempt would bring literacy very near since financial transactions involve greater and greater use of writing and reading. Besides, the cooperative organizations can exert an indirect form of compulsion in spreading literacy and educating the farmers. Its work will supplement the work of the education department. Such a step is in the interest of the cooperative organizations which can carry out their job effectively through a literate mass of people only. Athavale¹ is right when he says, "Thus the society should remember that it must participate wholeheartedly in all the programs of literacy as a self-interest or in the spirit of self-service." Thus, the idea is that spread of literacy does not mean the job of one single department, but is the task of all political, social or cultural institutions and the literates old and young.

Besides, whilst solving the problem of employment in rural masses particularly through encouragement via the spinning wheel (CHARHKHA-AMBAR CHARKHA which is the modification of the old spinning wheel), the same instrument can bring about group action when the classes of spinning and weaving are conducted together. Such opportunities can be utilized for spread of literacy. It is presumed, that economic planning under the present condition will have a place for cottage industries and hence the medium of the spinning wheel is anticipated for collection of groups of people.

¹ M. S. Athavale, "Cooperative Movement and Adult Literacy," Cooperative Studies, Journal of the National Cooperative College and Research Institute, (Poona, India, January 1963), p. 57.

SUMMARY AND CONCLUSIONS

The problem of economic development of India is primarily one of evolving a balanced economy. In doing so, there are limitations. Some of these are:

1. Paucity of capital.
2. Paucity of trained personnel in general education and technical education, in particular.
3. Paucity of literate mass of people.
4. Paucity of land and mineral resources.
5. Paucity of social mobility.
6. Paucity of a well organized system of transport.

On the background of these limitations, there are some of the well recognized assets for the Indian economy which opens out possibilities of its development. These include:

1. A stable government.
2. Adherence to democracy.
3. A fairly good administrative system.
4. A well developed "legal" machinery
5. A well managed fiscal and monetary system.
6. An intelligent but illiterate mass of rural people.
7. A long historical and cultural heritage.

The idea in giving such an exhaustive list is to reveal that economic development is a complex process and has to deal with a number of factors. A reference has already been made to some of these before. It will not be possible to deal effectively with the different "paucities." The usual method

adopted under such conditions is to decide on the priorities. This is normally a difficult task particularly in case of countries like India, which is wedded to democratic action on the part of the people. Since economic development is ultimately related to the development of the people, it is this element--the human element--which should receive priority. The development of a country is in the ultimate analysis the development of the mass of the people, and how can they be useful to the country. In the economic sense, how will they be able to contribute best to the development of the country. What should be the measure of their contribution? If there is no contribution, what are the reasons for its failure? Are there any organizational weaknesses? What hinders their progress? What measures can be taken to remove the shortcomings? Questions like these are brought forward in dealing with the above situation.

It has been now widely accepted that the economic growth or popularly termed as economic development, could be easily judged (if not quite accurately) by reference to per capita productivity. This is one of the most important measures. Thus, it means that every citizen of India must contribute to the productivity of the country. Since India lives in villages, the stupendous task of development lies in the transformation of the mass of people in rural areas into productive units. As many as 80 percent of the people have to depend on agriculture. The difficult part of this is that most of the people are illiterate. As reported before, the all-India percentage of literacy is 23.7 with its distribution as 33.9 in males and 12.8 in females. Galbraith points out that no illiterate peasantry can prosper. In other words, for each of the units to become productive, education particularly agricultural, is necessary. This is the main part of the present report. Broadly

speaking, the problem of education is divided under two categories--the general and technical education. The spread of agricultural education may be grouped under the second category. Illiteracy is a part of education. Under rural conditions, adult education forms an important problem. Likewise, where primary schools have been initiated it is necessary to spread agricultural education in these schools with a gradual increase in the higher standards (grades).

In the present report, agricultural education for the boys and girls between the age group of eleven to fourteen is considered. This is the link between the higher secondary and the primary school education and is the most receptive group. Higher forms of education do not become available as they are expensive. Besides, all do not need it. The problem of spreading literacy amongst the adults is a problem of general education and is treated under the category of social education. This is the form which is discussed as "out-of-school" education in the present report. In discussing the other part; the "school education," it has been suggested that a change in the curriculum and method is necessary. A plan of development through agricultural educational districts has been suggested. In treating education, it is stressed that local conditions and local resources should receive priority. A suitable administrative machinery for this purpose is necessary and it is hoped that the Village Panchayat and the Regional Developmental Councils will play an important part.

There is a great disparity between the education of the boys and girls. For sake of balanced growth of the economy this gulf must be bridged. No separate schooling facilities are suggested primarily to avoid duplication of expenditure and it is not necessary. There are however difficulties in

the spread of education amongst the girls. These could be solved by changes in relaxation of rules of recruitment and creating conditions for educated people to live in the villages.

In case of "school education" (as against out-of-school education) it is necessary to have flexibility of courses and freedom for the teachers to evolve a pattern suitable to the conditions prevailing in different regions (school districts). The structure of educational institutions and the growth of agricultural education is described in the background to assess the progress to be made. It is mostly on the all-India level. Development of agricultural education in Maharashtra State is touched mainly because of knowledge of this State on the part of the writer and information was available.

As regards the out-of-school education, the role of extension worker, particularly the Home Economics Agent, is discussed. An organization for spread of agricultural education and a way of diffusion of knowledge--the theory of concentric circles and the enactment, depicting the role of extension is described.

In the spread of agricultural education there are some shortcomings. These are described under "paucities." Generally speaking, these relate to trained staff, shortage of capital and equipment, accommodation, textbooks, etc. To obviate the difficulties some local measures referring to taxation are suggested but it is emphasized that the avenues of proper utilization of Foreign Assistance Programs be considered. These may take form such as the school-lunch-program, construction of school buildings and payment of labor out of the AID programs. It is hoped that under the democratic decentralization of administrative machinery and the powers granted to the local village

Panchayats, the pace of agricultural education will be expedited.

From the material so far covered, certain conclusions emerge. These are as follows:

1. The importance of agricultural education must be recognized as a problem of immediate priority.
 2. In doing so, the financial provision made should be regarded as a best form of investment.
 3. This program is regarded as a long term program and tackled on the primary and secondary level to avoid any lop-sided development.
 4. No national progress can be achieved unless the illiterate peasantry becomes prosperous. Each of the units in the rural areas finds a chance and gets facilities to contribute to national development.
 5. In doing so, the means are essentially democratic and attention is paid to utilize local initiative and talent resulting in the per capita productivity. And lastly,
 6. In the development of different regions, there is attention paid to the evolution of a balanced structure of Indian economy.
- All this amounts to a sense of preparedness on the part of each and every unit of the Indian mass of people to sacrifice some of the immediate gains for a few people, in the interest of future generations.

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CONTRIBUTION OF AGRICULTURAL EDUCATION TO
ECONOMIC DEVELOPMENT OF INDIA

by

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AN ABSTRACT OF A MASTER'S REPORT

submitted in partial fulfillment of the

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MASTER OF ARTS

Department of Economics and Sociology

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Nowhere in the world, illiterate peasantry is able to prosper. In this context the problem of education in any country should be regarded of primary importance. Education must be considered as a part of national investment as well as a consumer commodity and that those who receive it thus have a responsibility for its use. These are some of the ideas which Professor J. K. Galbraith puts forward in his small but valuable publication titled "Economic Development in Perspective" (Published by Harvard University Press, Cambridge, 1962). These form the basis of the present report.

Under Indian conditions, the problem becomes serious because only 23.7 percent of the people are literate. Of the total population, according to the census of 1961, 82.2 percent of population is classified as rural and 17.8 percent as urban. Evidently, the educational problem is essentially an Indian rural problem. The problem is complex but has both possibility of solution as well as some shortcomings to deal with. The bright side of the picture includes points such as (1) a stable government, (2) people having faith in democracy, (3) a fairly good administrative system, (4) a well developed legal machinery, (5) a well managed monetary system, (6) a long historical and cultural heritage and finally (7) an intelligent mass of rural people. The limitations are mainly (1) lack of capital, (2) lack of trained personnel in general and technical education in particular, (3) lack of social mobility and (4) lack of communication.

In the present report, agricultural education for the boys and girls between the age group of eleven to fourteen is considered. This is the link between the higher secondary and the primary school education and is the most receptive group. An equally important problem is spread of literacy amongst the adults. This is a form of out-of-school education and comes under the

broad category of social education. In the former form of education (school education), education for both boys and girls is to be considered simultaneously. This is particularly due to a great disparity between the education of the boys and girls. There are greater difficulties in the spread of education amongst the girls. But these are surmountable and suitable measures are suggested for this purpose.

Regarding the out-of-school education, the role of extension worker particularly the Home Economics Agent is for spreading literacy amongst the women. For sake of diffusion of knowledge, the theory of concentric circles and the Old-Young enactment may be useful. It may be worthwhile finding out patterns of diffusion of knowledge amongst the different sections of people and evolve suitable channels of communication. The incentives and motivation which will direct the cultivators to adopt scientific knowledge is a study in itself.

In the spread of agricultural education, there are some difficulties. These refer to lack of necessary capital and equipment, paucity of trained staff, schooling and living accommodation, rigidity of curricular and courses, etc. To a certain extent some of these could be solved by resorting to measures of taxation. It is however suggested that avenues of proper utilization of Foreign Assistance Program be considered. These may take the form such as the school-lunch program, construction of school buildings out of voluntary labor and wherever payment is to be made, use of AID programs. Investment in the form of school building and provision of capital equipment for education should be regarded as a sound form of investment on the priority basis as compared to dams and other huge projects.

It has been recommended that system of agricultural education should not

be rigid and should include courses and curricula which will be problem solving. For this purpose, it is suggested that the District be divided into Regional Agricultural School Divisions and the training given to the children in the school should ultimately help solving these problems of the region. The divisions so formed, would be mostly based on agro-economical consideration. Under the educational system proposed, full participation by local bodies like the Village Panchayats is envisaged. The powers of appointment of teachers, the selection of courses, the availability of finance, accommodation, etc. should rest with the regional groups so as to avoid red tapism, and non-participation of the local element.

Some of the conclusions which flow from the study are:

1. The importance of agricultural education must be recognized as a problem of immediate priority.
2. In doing so, the financial provision made should be regarded as a best form of investment.
3. The program is regarded as a long term program and tackled on the primary and secondary level to avoid any lop-sided development.
4. No national progress is really achieved till the illiterate peasantry becomes prosperous. Each unit in the rural areas finds a chance and gets facilities to contribute to national development.
5. In carrying out agricultural development, through agricultural education, attention is paid to the other sectors of the economy.

All this could only be achieved, through a sense of preparedness on the part of every individual and may mean sacrificing some of the immediate gains for a few people, in the interest of future generations.

Date Due

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