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THE APPLICATION OF ECONOMIC RESEARCH TO A VILLAGE IN BENGAL

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I FEEL I am here under false pretenses. I can claim to be neither an economist nor an agriculturist by profession, and for this reason I trust you will excuse a few words of personal explanation.

In February, 1922, at the invitation of Dr. Rabindranath Tagore, and as part of the work of his university, twelve of us, including ten Indian students and one member of staff, set out to take possession of a small farm on the edge of the village of Surul in order to try and discover what lay behind the apparent breakdown of village life throughout that region. Perhaps it was natural, fresh from two years' study of agriculture at Cornell, to wish at first to find a way out mainly through agricultural improvement and a study of the agricultural economics of the village. Those of you who are familiar with any part of rural India will know, however, that the village over most of that vast country is not just an agricultural unit of production but a social organism with not less than 3000 years of civilisation behind it. The village takes precedence over the single family, the single farm or the single enterprise as the significant unit and must therefore be looked at from every aspect and not solely as an economic problem. In the application, therefore, of the results of such research work as is available, there has to be a coordination of method and attack of a kind that will take into account the emergency of the whole village situation. The research-worker must examine social and industrial as well as agricultural conditions. In addition to this, as those of you will know who come from countries where agricultural economic research is still fighting for funds and even for existence, when there is only a very limited budget allowance for the tackling of a very practical and sometimes a desperate rural situation, the amount of money available has to be spread very carefully between research and those methods of extension and education whereby the emergency is dealt with on the spot.

I propose, therefore, to sketch for you a threefold picture. The first describes an attempt between the years 1922 and 1924 to establish in the district of Birbhum in western Bengal an Institute

of Rural Reconstruction. This was to be a center of research into every aspect of village life and a training school for extension workers. The second is an account of the economic aspects of a single village drawn from a survey in 1925, which will serve as the background for the third picture, a report of the results of five years of extension work applied to this same village.

Bengal lies on the east side of the peninsula and forms the delta of the Ganges and Brahmaputra rivers. Rice, jute and fish are the chief products of the deltaic area. Birbhum forms the most westerly district of Bengal and is an arid upland area lying between the delta and the hills of Bihar. Here the rain falls during three months in the year only, and the cultivator, unless blessed with irrigation water, is fully occupied for not more than three and a half months. Looking back at the records of the first two years' research, the following sentence was used to sum up the situation as we found it. "At the basis of the social and economic troubles of the village in this area lie malaria, monkeys and mutual mistrust."

With an incidence of malaria rising often to 95 per cent among the cultivators just when their full time and energy is needed on the land, the economic wastage is considerable. The staple article of diet being rice, it is difficult without fresh fruit and vegetables to withstand any general epidemic, but the monkeys in this area made vegetable and fruit growing almost impossible. They can destroy completely a crop of sugar cane or potatoes. The scourge of malaria seems to have come into the district with the railway some sixty years ago. The felling and clearing of timber that followed resulted in the rapid elimination of the old grazing grounds through soil erosion; and economic stability, always liable in older days to be upset by occasional famine, had disappeared altogether and with it social stability inside the village. Fear of what may happen tomorrow and of the ever possible destruction of his last resource turns every villager's hand against his neighbour and makes difficult the building up of any element of trust between him and his fellows or between him and any extension service however well-meaning and well organized. In such an atmosphere it is very easy for the economist to try and justify his existence by concentrating on what he calls pure research and by publishing his figures and facts without having to visualize the end for which he exists, or to concern himself

with the building of that bridge of mutual trust across which must travel the results of his research if such a situation is to be remedied. The following quotation from Mr. K. M. Ghose, the head of the village work of the Institute for the last nine years, will illustrate the difficulties of an extension service in a village typical of the area. "Forty years ago there were 300 families in this village; in 1923 there were 88. Progress is difficult because the villagers are indifferent and do not trust their headman; they have no energy or vitality and an attempt to combine them for anti-malarial work in 1924 failed; 95 per cent on examination by a qualified physician showed enlarged spleen; the village is full of jungle and malarial pools; the tanks built to store water for irrigation and household purposes are silted up; no vegetables are grown; the landlord is money lender and legal adviser to the village; his tenants are all in debt to him but are rapidly decreasing in number." It was five years before this village opened its doors to extension work and began to put itself in order.

In 1922 the Institute of Rural Reconstruction was established as a permanent part of Dr. Tagore's educational enterprise. After a preliminary survey of the area we set out to study and master methods of dealing with what seemed the most serious problem—the prevalence of disease. We planned to educate students in preventive methods and at the same time to explore possible ways of extending a knowledge of simple health precautions to the village. Our health work, in fact, offered us our first opening into the neighbouring villages where we had been for some months regarded with the greatest suspicion and even with hostility. Closer touch with the individual village showed us the necessity of studying the decay of village industry as well as the depression of agriculture, since the prevalence of disease was so often directly associated with the absence of any economic resource. The hereditary weavers and most of the hereditary leather workers we found living in a state of perpetual semi-starvation, so we set up research into these two industries and later established training centres in both. At the invitation of one of the villages we were at last able to gather their small boys together in the evening. For these boys we worked out a system of elementary education directly applicable to their surroundings. Through them we introduced vegetable growing, a fire-fighting organization, an anti-malarial control programme as well as the playing

of games and the singing of group songs. Within two years there were in eight villages groups of boys trained in this way and they formed the backbone of our early extension service. Through them we were at last able to establish a living touch with our environment, to begin to gather significant facts and to extend to the village the early findings of research.

In 1924 the staff which had grown considerably by this time were ready to undertake a detailed survey—social, economic, industrial and agricultural—of one village where the success of some preliminary health work had established a measure of confidence. The staff were already convinced that any fundamental and lasting progress would only be possible where they could establish one of their trained extension workers permanently in one village, in such a way that he could earn his living and make his home there and occupy a part of his spare time in village organization, education and extension work. The Institute, by this time, included the following: an office and store; textile, tannery, garden, farm and poultry departments; a work shop; a training school with headmaster and some fifteen students; a day school for village girls; an orphanage; a boarding school for small boys; a dispensary; and the village extension work department. In the spring of 1924 I left India with Dr. Tagore and an all-Indian staff has carried the work on ever since.

The survey of the village of Ballabhpur was published in July, 1926. I propose to quote from it only sufficient facts to provide a background for further comment since the report is published. This village must not be regarded as typical of India nor even of Bengal any more than a village of Germany or Spain could be regarded as typical of Europe.

Ballabhpur is a small village typical of the uplands of western Bengal. It has an area of 1,248 acres; 916 acres are for the most part eroded waste; 14 acres are occupied by the village; 14 acres are tanks or excavated ponds which from ancient times formed the water reservoirs for irrigation and household use and which for the most part have been allowed to silt up and breed malaria; 67 acres are grazing ground; 87 acres are arable fields; 150 acres are unclassified.

The village is owned by one landlord who has drawn $300 rent a year for the last twenty years at a rate of $1 an acre. He lives in a village two miles away. The main cash crops were rice,

sugar cane, and potatoes. The livestock included the following: 2 bulls; 36 bullocks for working purposes; 77 milk cows, 15 of which were in milk at the time of the survey, giving an average daily yield of one pound of milk each; 50 calves; 40 goats; two pigs; and forty-four head of poultry. The village imported $430 worth of cotton cloth annually.

The population in 1820 consisted of 500 families, most of them weavers for the East India Company. By 1920 there were only 100 people living in the village; by 1925 there were 84 people and 24 families. Of the 84 people, 38 belong to the higher castes including six families of Brahmins, three families of weavers, one family of potters and one of barbers; 46 belong to the lower castes including seven families of tanners. All except seven landless labourers depend on agriculture for their living.

The caste system is the outcome of two factors dating from the descent of the Aryan invaders into India not less than 3000 years ago. They were priests or soldiers by birth and established in India a permanent connection between profession and family. The conquered tribes were given the less skilled tasks and in order to safeguard the blood of the conquerors were termed of lower caste and forbidden to intermarry with the invaders. These lower caste folk often keep their original tribal names and are sometimes referred to as the depressed, sometimes as the untouchable classes, according to the strength of the caste system in the particular area.

In 1925 the income of the one family of means amounted to $569 and the expenditure to $530, leaving a surplus of $39. This family rented 10 acres. Among the depressed classes the average expenditure of a family was $93 and the average income $63. The total indebtedness of the village was estimated at $1,650.

The one thriving concern in the village was the liquor shop which belonged to the landlord. On an annual expenditure of $735 the profit and loss account showed an income of $1,172 out of which a commission was paid to the Government of $287. The net profit to the owner was $417.

In 1923 eighty to ninety per cent of the population was infected with malaria. After some preliminary work this number had decreased to 20 per cent in 1925. In the course of five years 22 people had died from malaria—a quarter of the population—

and 29 babies had been born, 20 girls and 9 boys. There was no system of sanitation and no pure drinking water supply.

You will see from this picture that here was an emergency problem which could certainly be measured in figures but the cure to which was necessarily a change in attitude of mind. At the time when the survey was taken the people were all anxious to leave the village but were too poverty stricken to do so. They distrusted each other and the better off exploited the poorer; they put no trust in the Institute and laughed at any suggestion put forward. So much for the survey of 1925. I shall now turn to the account printed in January, 1930, of the results of five years' extension effort.

In 1925 while the survey was being taken, a Cooperative Health and Reconstruction Society was formed and registered with the Government. This represents perhaps the most primitive of all forms of cooperative activity. It opened with 23 members, each paying eight cents a month, two cents being credited towards the purchase of a share and six cents going to improve the sanitation of the village. Poor members contributed half a day's work and then were credited with full membership. From its foundation the District Board contributed an equal amount to that raised by local contribution. Twenty-three dollars was raised by the village; $22.50 was received from the District Board. The District Board is the county unit of local administration, and is an elected board of Indians.

The following works were undertaken by the Cooperative Association: In 1925, two stagnant pools were filled, 440 yards of road were made, 900 yards of drain were opened, most of the jungle was cleared, kerosene was put on water in the tanks, and quinine pills were distributed. In 1929, 18 pools were filled, 43 yards of road were made, 1,800 yards of old drains were cleaned twice, and 272 yards of new drains were dug. By the end of 1929 the total of 4 years' work included the following: 48 pits filled, 943 yards of road made, and 2,270 yards of drains dug.

The test of such a society must be the results which it obtains over a period of years. The foregoing figures give certain evidence that a bridge of trust had been built, across which the findings of research from the Institute have traveled to the village, and across which emergency problems from the village have

traveled to the Institute. How then has the bridge stood when confronted by the more complicated social problems of debt, party quarrels, and law suits; by the struggle to improve industry, agriculture and education?

Unless complete confidence has been established between extension worker and village, it is always a difficult matter to discover the exact amount of indebtedness, but there were already figures to show that in 1925, 23 out of 24 families were in debt, to the amount of $1,650. By 1929, 18 out of 24 families were still in debt; and the amount had increased to $1,956. This increase was largely due to the famine of 1927 when crops failed completely. Of this debt $663 was owed to the cooperative bank, $654 was owed without mortgage, $625 on the mortgage of land and $15 on pawned property.

The following are the usual methods of obtaining loans:

1. Loans on mortgage where the creditor obtains from the debtor temporary possession of some land until the principal is fully paid up. Use of the land takes the place of the usual interest payment.

2. Loans on the mortgage of land at 18 to 24 per cent compound interest.

3. Loans made on condition of automatic transfer of mortgaged land if principal and interest are not paid up by a given date. As a result of drought and failure of crops in 1927, many cultivators, who were paying the landlord 25 per cent interest on their arrears of rent, borrowed funds on condition of automatic transfer at 37½ per cent to meet the expenses of cultivation. Most of them failed, automatically lost their land, and became labourers.

4. Loans at an interest rising to 37½ per cent against pawned ornaments, jewels, and household utensils.

5. Loans taken on note of hand bearing 37½ per cent interest.

6. The paddy loan system. This system is common with the small cultivator whose stock of paddy or unhusked rice runs low in May. He borrows paddy to feed himself and his hired labour and for seed at a rate of 50 per cent payable in paddy after the harvest in November.

7. Loans taken by the landless labourers from the Kabuli merchants of Afghanistan bearing anything from 150 to 170 per cent interest. Once in the clutches of these men the labourer rarely escapes during his life except by bolting from the neighbour-

hood—hence the high rate of interest which more than covers this risk.

8. Loans from a Village Cooperative Credit Society inspected, audited and guaranteed by the Provincial Government at not more than 10 per cent.

Loans are taken to pay expenses of cultivation, to meet marriage and funeral expenses, and, on the occasion of decimation of working bullocks by disease such as rinderpest, or foot and mouth disease, to buy new cattle.

In December of 1927 the Government Registrar of Cooperative Societies established a Central Cooperative Bank at Surul, under the control and supervision of the Institute, which is audited and backed by the Provincial Government. With the assistance of this bank, in January, 1928, a cooperative credit society was opened in the village of Ballabhpur under the guidance of the extension worker, with eighteen members. This society proceeded to borrow $950 at a reasonable rate of interest. With this money in hand nine members were able to clear their high interest loans; two bought cattle and manure; one met his household expenses; and two re-excavated their tanks in order to establish a fishery, a better water supply and irrigation for a vegetable garden. In 1929 every member paid his debt to the bank and the society borrowed $750 more from the Central Bank at the Institute. By the end of the year the villagers had begun to deposit their own money in the bank and their working capital amounted to $2,808.

The chief difficulty about the Central Bank from the cultivator's point of view is that he is as yet unable through his Cooperative Credit Society to obtain from it a long term loan. The chief difficulty about the cultivator from the point of view of the Central Bank at the Institute is that so many of the 258 Unlimited Credit Societies affiliated to it when the Branch was transferred in 1927, remain stagnant and even unsound for lack of the trained leadership of an extension service such as exists in the village under discussion, and of a competent rural economist. A list of the various types of society which have been organised directly by the Institute will show how powerful a weapon a Central Bank can be when it is harnessed to a competent organisation for research, extension, and educational work. The bank has, under the direct supervision of the extension service of the Institute, financed 64 irrigation societies; 8 societies of depressed class mem-

bers, mostly landless labourers; one cooperative sale and supply society; one cooperative rice store; and twelve rural reconstruction and health societies in the villages immediately around the Institute.

So much for the attack upon rural health and indebtedness. The effort to stimulate the villager into raising his standard of life through other kinds of extension and educational work has to take many additional forms. In 1929 there were in Ballabhpur sufficient boys of the right age to make possible the formation of a village troop. This troop was organised like those of 1923 for the introduction of games and sports and was drilled as a fire brigade. The boys were made responsible for the putting of kerosene on the tanks against the malaria larvae, for administering the pills of cinchona, and for recording the completion of the swallowing process. Most of these boys are busy during the day herding the village flocks and herds and therefore give their evenings to their troop activities as well as to the gatherings around the fire in the winter for the singing of songs and reciting of tales after sunset.

One of the most depressing elements in a rural area where poverty, disease and economic disintegration dominate society is the prevalence of party quarrels and expensive recourse to the lawyer and the law-court. To realise a debt of $50 a man has to spend $20, only $10 of which is recoverable from the debtor if he wins his case. Four years of cooperative experiment in the field of health and of indebtedness made possible in 1929 the election of a "panchayat," that is of five men, before whom all disputes in the village are now brought before recourse to the courts. This step forward probably represents the high water mark of village extension work in this area. Five disputes were settled during the first year of the existence of this body.

Until a competent extension service for women has been trained and organised it will always be difficult in India to reach the inside of the home. The three midwives of this village have, however, received special training at the Institute and this is probably a fundamental step. A Women's Association has been established through which the women have learnt tailoring and needlework.

In 1926, a night school was established with 12 boys all of whom can now read and write. In 1929 a day school was introduced with a paid teacher, and the report records that the

furniture was provided by the District Magistrate for the sum of $12 and that the local government authority, the District Board, contributes a grant of $1 a month to each school. Boys from two other villages use the day school.

At an earlier stage in this paper, I referred to village industries and agriculture. It is not difficult to see, however, that progress in these fields is dependent upon the degree to which the extension worker is able to establish an understanding of the elements of cooperation in dealing with village quarrels and village health. Water, capital, bodily strength and mutual trust form the bed-rock upon which alone profitable agriculture and industry can flourish in this area. Certain new crops, tried out first on experimental plots and then on the demonstration farm at the Institute, have been established in the village. Cotton and mulberry were both extensively cultivated in this area up to 1815 when thousands of cotton and silk weavers in this area were thrown out of work and sacrificed on the altar of the newly established power loom industry in Lancashire. High tariffs were established by Parliament to prevent manufactured cotton goods reaching England from India, and India was compelled to accept, without tariff, cotton goods manufactured in Lancashire from her own raw cotton. This action destroyed many of her indigenous crafts, upset the economic balance of village life in the area under discussion, and one of the finest varieties of cotton ever known disappeared from cultivation. In those days there were neither research nor extension men to examine, to record, or to alleviate the suffering.

The growing of tomatoes, entirely new to the area, and of bananas, was made possible only by the killing down of the monkeys. In 1929, twelve were shot. Twelve households have new and successful vegetable gardens; and the Village Health and Reconstruction Society has itself leased from the landlord one tank from which the water and fish can now be sold. The members undertook the re-excavation themselves. For a variety of reasons the Institute failed in its effort to establish better poultry husbandry among the depressed classes. One other setback may well be mentioned here. The village became so confident in 1929 of its capacity to withstand malaria without consuming the necessary but somewhat unpalatable pills that the incidence rose to 34 per cent as against 17 per cent the previous year.

In the field of industry one village leather worker was trained

at the Institute in the use of scientific method and there is a ready market for his improved product. In the weaving industry it is not generally realised that thirty per cent of the cotton cloth used in India is still the product of the rural handloom industry with factory spun yarn, and that any improved form of small scale ginning and carding and spinning machinery that could be handled in the village would deprive factory industry in India or in Lancashire of a serious proportion of the other seventy per cent. The hand loom in India has withstood every attack by modern industry. Local demand for a special pattern still gives limited markets that no factory wants to fill. In the buying of yarn, in the marketing of his finished product, in the financing of his industry and in his conservatism, the worker has laid himself open to every kind of ruthless exploitation, but the industry has survived. Here again the Rural Credit Bank on the one side and textile research at the Institute have come to the assistance of the weavers in Ballabhpur. The extension worker and his pupils have already worked out from experience dependable figures upon the capital and equipment needed to ensure a reasonable financial return.

As the work of the Institute grows, the problem of marketing the surplus crops and manufactured products is beginning to arise and to engage the attention of the staff at the Institute. Here careful research is needed of a kind that has hardly been undertaken in Bengal, not only into the possibilities of cooperative purchase, storage, and sale of commodities, but into the need for dealing with surplus production and of making proper provision against famine.

I have tried in this paper to give you a picture of an attempt, with limited financial resources, to assess the emergency and to take a long time view of a rural situation, and from small beginnings to mobilise some of the forces of research, education and extension in a coordinated attack. The situation may seem far removed from the experience of any here, but I am inclined to think that the principles of attack are the same whatever the situation. Even where research and graduate training run hand in hand with higher education, the most serious tendency of educational institutions is to drift into isolation from their environment. When the Institute or some member of it has been able and vigorous enough to initiate not only research into facts and conditions at his door, but to establish actual enterprises, agricultural or industrial, and to

run such enterprises on a strictly commercial basis, education, research and extension work have all reaped the benefit.

Intimate touch with the facts of any neighbourhood is not easy to establish inside an institution and this can only be gained when the staff is thoroughly cooperative and so wedded to a common purpose that teacher, research specialist, and enterprise manager are able on occasion to get out into the field on extension work. Unless the extension worker also possesses a feeling that he has in the Institute a home to come back to, with valuable experience of the field from which to teach, he can easily become disheartened and isolated, and fall into a rut of routine.

Out in the field, attention to principle involves a determination so to study the psychology of the villager that nothing is done for him which saves him the trouble of making every effort within his own range and capacity. It means that progress for him must never be measured merely by an increase in his material standard of living but by the quality of his life. In a land of small villages it is probably better for an extension worker to be able to practice some specific profession in the village, part of his time. Men who try to earn solely by the word that proceeds out of the mouth will always be somewhat suspect in a world of very practical people.

If the cultivator of Bengal can once command control, through cooperative effort, over his purchasing, his marketing, and his producing, he can, by making due provision against natural calamities, stabilise his standard of living and devote his effort to the enriching of his leisure. Bengal is full of the memories of a rich and creative village life. Drama, poetry, music, dance, decorative craft and art, all these served to enrich the ample leisure of the villager. Natural events and processes in life were often invested with social, religious or dramatic significance. Cooperative celebration at feast or festival frequently overcame caste distinction. This capacity to cooperate for the enriching of life still exists even though the economic basis that once gave it liberal expression has vanished, but the India of tomorrow will lose much if she fails to rediscover and reestablish it through education, research and extension work.