

A Brief Memorandum on Agricultural Reform in S. India.

(An Appeal to Govt. & M. L. C's.)

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The nucleus for scientific agriculture was formed in 1865 by Sir Charles Denison, then, Governor of Madras. Sir Arthur Cotton, the greatest Engineer-benefactor of India, while on furlough in England prevailed upon Messrs. Ransom and Jeffries, Agricultural Engineers, to demonstrate labor-saving tools, machines, etc., used in English agriculture. A large consignment of ploughs, harrows, seed drills, sickles, harvesting machines etc. were received by the Government of Madras for demonstrative education. After several vicissitudes the services of Mr. W. R. Robertson were secured for the purpose. He established an experimental farm and an Agricultural College at Saidapet, and laid the foundation for the present day activity in agricultural reforms. The controlling authorities were still sceptical for a long time about improved systems of husbandry; no definite policy was enunciated and no methodical work was undertaken. The fragmentary results of successes were never popularised for assimilation. The Indian cultivator was pronounced to be stupid, illiterate and conservative and he was judged unfit for progress. The merits of his conservatism and the sagacious economy locked up in his so-called stupidity never appealed to officials in their aloofness. Thus both of them were never on one common platform. There was no hearty co-operation for common good. The ryots are even now suspicious of the well-intentioned ways of Government. The position was graphically described by Sir F. A. Nicholson in his report on Agricultural Committee in 1888: The "organism of 1865 conceived in error, born by chance, bred up by accident, developed by starvation, and guided by change, never had any vigorous vitality."

2. The now developed department of Agriculture has not, for want of the required number of trained graduates, satisfactorily promoted the popularisation of approved results. It may take a long time. But in the eyes of the matter-of-fact agriculturists and the sceptical politicians, the reformed dept. has not justified its existence, since two blades of grass have not yet been grown in the country in the place of one under empirical conditions. The poverty of the land is proverbial. Its indebtedness is getting more intensive. The empirical practices and crystallised ignorance continue to prevail unaffected. Oil engines though appreciated for irrigation are not widely adopted. The productions are coarse and inferior. Economy has not been imbibed to save waste. The wooden plough still rules agriculture; sowing and weeding are still crude in the Tamil and Kerala lands. Other handicrafts and trades offer larger wages and greater attractions to labor in towns and cities. The land holders are left in the lurch.

While the work of the past was gloomy and dismal, the future is not less dark. If so, is it not sane to abolish the Agricultural Dept. and its college at Coimbatore? But as a matter of fact scientific agriculture has enriched the United States and other countries. Why she has failed here is a question to be looked into? Somewhere the rot is; it has to be discovered.

3. The U. S. Dept. was organised in 1868, three years after its inception in Madras. She progressed steadily step by step, taking lessons from failures and familiarising farmers with their successes. The Govt. instituted a sound survey with reference to soils, springs, climate, rainfall etc., and deputed a host of experts to study agriculture in European and Asiatic countries for the purpose of introducing disease-resisting, hardy, and prolific varieties of seeds and plants into suitable localities. Smyrna Figs, African dates, Egyptian cotton, Arabian stallions, Indian mangoes, Nellore cows, Chinese ducks, Japanese rice, various fadders as Cholam and sugarcane, and a host of other seeds, plants, and animals are examples of their introduction. The result of this single line of work was manifested in extra profits to the agriculturists. Stimulated by several lines of profit in various channels, the Department has now grown

to be one of the largest in the country, tackling questions connected with every Department directly or indirectly connected with the welfare of farmers and their wives. Its magillody can be realised if one knows that the controlling Department at Washington manages with a formidable array of over a thousand hands composed of professional and ministerial officers. The department by its intelligent and useful work made itself indispensable. She is ambitious of producing the world's requirement of cotton, rice and sugar. In consequence of the increasing wealth the country acquires and accumulates, the department is daily expanding. The superfluity of wealth amongst farmers led them to invest it even as low as 2% per annum. Over 20,000 million dollars were loaned out to Europe and other places. The farmers have become leaders in scientific civilisation. The flourishing condition of the U. S. Dept. of Agriculture will convince the most sceptical politician to entertain a new hope in regenerating South Indian agriculture from its chronic indebtedness, penury and poverty.

4. In order to bring about between the Govt. and the agriculturist a mutual trust, a healthy co-operation and scientific enterprise aided by indigenous capital, labor, and knowledge, the following requirements must be rigidly observed by the local agricultural department.

(a) A healthy policy must be boldly pronounced and undertaken. The progress of research and experimental work should be, without regard to criticism by the public and the press, published regularly and systematically, showing with reasons the general results thereof, so that the tax-payer may be conversant with the work of experts. This will warn the country to avoid pitfalls leading to failures and to accept only the successes. Then a correct knowledge can be imparted. If by illiteracy and shyness ryots do not freely co-operate with officials, the latter must endeavour to secure confidence by giving up their aloofness brought about by differences in social position, affluence, and education. The ryot's experience of ages cannot be trifled with. His co-operation is essential. His calculative shrewdness can avert many a costly

undertaking. The Botanical garden and the sugar station are just examples. The former suffers from want of water and the latter is impregnated with salt. Thousands of rupees were spent to mend them.

(b) Continuity of work as found in Rothamsted Farm should be enforced. Since inopportune and inexperienced officials often succeed capable and original workers, the costly and good work of their predecessors are, for want of a definite code or policy, often mutilated or undone according to their knowledge and fancies.

The breaking of epidemics for the first time in Sydpet Farm during Mr. Keess' time, the loss of the Belgian cow at Coimbatore are examples. Sydpet breed of sheep, the manuscript notes of Cullapa agricultural survey obtained at a great cost of labor and time are nowhere with all their merits.

(c) Recruitment of officials must be on a utilitarian basis. The best men irrespective of nationality and of tropical experience and education should alone be appointed. English and other lads being brought in direct from schools and colleges to get experience in India is a wasteful and unscientific procedure. Of late Indians are appointed to high posts. They too for want of foreign travel and study are wanting in a general breadth of vision and a thorough grasp of agricultural conditions. The Pallopians and the West Indies supply our requirements. A knowledge of Chinese and Japanese Agriculture with their manual and home industries is essential for stimulating local thought and for dispelling intolerance amongst the intellectual and parasitical members of the village society. Expert knowledge and cost must alone be the rating factors in the choice of officers.

(d) The subordinate staff is only nominal. In education and position they must be similar to vaccinators. With primary education they must be fully conversant with the art of collecting and preserving village manures. They must be adepts in ploughing, sowing with drills and weeding with bullock implements and harvesting with perfect efficiency. They must be skilled workmen in selecting and testing seeds, propagating plants by grafting

and cross fertilisation. Castration of farm animals must be freely done by them. They must be trained in the preparation and application of Fungicides and Insecticides. These subordinate demonstrators must be drawn from village agriculturists. The country requires thousands of them—men marked by dexterity of hands rather than endowed with brains—and they will cost least.

(e) The supervising staff as Inspectors or supervisors have in general proved themselves unworthy of the task imposed upon them. The fault is in the system of education. It requires to be modified to satisfy the present day needs, on the lines adopted by Booker Washington—the greatest reformer in America for coloured men. In his world-renowned Tuskegee Institute, every lad gets in the forenoon a training in the arts of gardening, smithy, carpentry, masonry etc., and the afternoon is devoted to intellectual culture. Thus the University trains the hand and the brain simultaneously to make the boys ideal citizens. Their spirit of building the Town Turkiji without the aid of foreign material and finishing it is an example of their valuable education. Here graduates lack manual training, artizans lack a rational knowledge of their arts. The present political difficulties and labor troubles are the natural outcome of the modern one-sided education.

(f) Agricultural associations must be organised at every taluq and district, controlled by a central society at Madras. Its members must be agriculturists and the officials of the Department. Honorary workers must be selected in villages and taluqs. Annual conferences must be arranged in taluqs, districts and the city, and supplemented by exhibitions and demonstrations. Officials must submit a review of their work. Agriculturists must give an account of their successes and failures in adopting improvements. This is the royal road for improvements with the least cost.

5. A comprehensive knowledge of the agricultural practices in the country is the keystone for agricultural improvements and economy. Sir Arthur Cotton realised this truth. He respected Indian Engineers who constructed the grand Anicut across the Cauvery and repaired it from the example set by them at a cost far beneath

the estimated amount. Raja Veeranna built the Anicut with mud and stones with the help of empirical masons. It has stood for over a thousand years resisting the tremendous pressure and force of the Cauvery freshes. Fortified with such experiences, he was bold enough to the surprise of thinking Engineers to bridle the wild Godavari and the furious Kistna rivers. Thus he fertilised the high level deltas and provided the cheapest service in the shape of navigation.

The agricultural department should not deem itself superior to the ryot, but should court consultation with and suggestions from the farmers. Confidence will then generate confidence and the spread of improvements will flow unimpeded.

6. It is imperative that the whole Presidency must be surveyed exhaustively with reference to climate, rainfall, soil, subsoil springs etc. as was done in the United States of America. It will lead to the importation and acclimatisation of a host of economic seeds and plants from similar parts of other tropical and sub-tropical regions.

The floating gardens of China, the practice of dwarfing fruit trees to make them more prolific, the method of artificial hatching without incubators, the utilisation of birds for fishing, the adeptness of the Chinese in smithy, carpentry, masonry and a host of other arts and crafts deserve to be studied by us. A deputation of officials to study agricultural industries in China and Japan, and a large importation of Chinese workers as demonstrators of several manual industries will secure our object at a very greatly reduced cost.

Irrigation is the panacea of the ills South Indian agriculture is exposed to. Of the various economic necessities irrigation demands the greatest consideration. In a tropical country governed by a fitful and precarious rainfall conserving the wasteful freshes is essential. For want of secure irrigation the present day agriculture is highly speculative, nay, it is a mere gambling with nature. Till this major occupation is insured with permanent irrigation, the country will never be freed from the grasp of want, scarcity, and famine.

The possibility of developing India into a land flowing with milk and honey has been beyond question proved by Sir Arthur Cotton. India is said to possess ten times more water than is required for her full irrigation in the shape of monsoonic rains and melted ice. Sir Arthur estimated his "All Indian Canal" for irrigation at 50 million pounds. It would now swell into three times the amount.

Is there no way to find this capital for Indian regeneration? Swami Vivakananda proved that money was our slave if we evolved patriotism. Mahatma Gandhi raised a crore of rupees for his political school. The Government of India found a similar contribution to the late European war. To this end the determined will and the sympathy of the government are required to be intensified. The people of England may be reluctant since their luxury is at present suspended. But the Government is bound to help India. She must raise a loan at least under Land Improvement Loan's Act to finish the project and realise the amount with interest if necessary in several instalments. This piece of work should never be calculated as speculative. It is a necessary and urgent affair in a nation. Improvements in other lines as education, sanitation, may be taken up one after the other.

7. The largest industry in India is food production, in which nearly 65% of the population is directly engaged. Excepting a small percentage which is either parasitical as beggars or mental workers, the rest are engaged in the preparation of food and dress and other home industries. All labor is on an unscientific basis. It is imperative that labor should have the active co-operation of experts. These experts in their useful and productive work will become fountain heads for the formation of Factories, Workshops and Laboratories. The fruit of such concerns will satisfy the necessities of scientific farming.

With the just expansion of scientific agriculture, workshops for manufacturing tools, machines, laboratories for chemical manures, biological cultures and power stations for multitudinous concerns in manipulating industrial crops and myriads of subsidiary industries will be the inevitable outcome.

Commerce and civilisation breed metal roads, waterways, and air navigation resulting in the building of motor and railway cars, steamers, and air-ships. These enormous necessary developments demand hearty co-operation of labor, capital, and experiences of the country and the Government. It means an unlimited capital as National Loans and Limited Companies; diversion of charitable and temple funds, contributions, donations and subscriptions.

8. Legislation is imperative for the people to do duties to themselves. Under the present conflicting conditions of society, even the most beneficial system of *Kudimaramet* has a woeful tale to tell. In Mysore, roads and avenues, tank bunds, irrigation channels are maintained neat and clean so as to be more efficient. Here minor repairs of above works devolve on pattadars, the state supplying the required materials. Hence compulsory labor and its honest enforcement are inevitable.

9. Of the several devices serving the purpose of conveyance, waterways are the cheapest. If it costs 700 units on earth roads, it costs 180 units on metal roads, 16 units on a rail road, and 5 units on water roads, which with steam amounts only to $1\frac{1}{2}$ units. 150 years ago, Holland, France and Russia led the way for advancing countries to prefer canal navigation. Manchester was forced to dig a canal along the rail road to carry its raw products after a 60 years' costly experiences and losses. Hence our Govt. must patronise canal traffic in preference to railways which serve only a single purpose, whilst irrigation canals lead to production power and traffic. Poor India requires the cheapest of roads. Formation of metal roads and their maintenance have become antiquated for agricultural purposes. Thus every attempt must be made to construct anicuts, locks, and aqueducts across every stream and river and deepen them for power and passage.

10. Meteorological forecasts, and news of the world markets require to reach every village to avoid danger to properties during cyclones and to safeguard production and regulate labor and prices. Frequent exhibitions, practical demonstrations, formation of school gardens, instituting travelling railway laboratories and libraries, developing Boys' and Girls' clubs and agencies of the right sort to secure our ends at a nominal cost.

11. Within easy reach of every village at important centres, there must be instituted a biological station, a chemical laboratory, a scientific library and a meteorological station, a workshop, and an agricultural school. In fact it must be a repository of all knowledge on the health and wealth of villages. This may sound ambitious but it is imperative for material advancement.

12. Half the vital force in agriculture is in our women. Keeping them in ignorance disgraced Indian civilisation. Asiatic civilisation made our wives practically slaves, while Europe bestowed equality nay, superiority to them. Family ruptures and other defects resulted in unhappy homes.

Mr. H. B. Small of Canada discovered that women are neither inferior nor equal to men. Both supplement each other in developing a harmonious unit in society. Women by nature are fit only for delicate indoor work. Men are generally fit for sturdy out-door conditions. Following this order he changed education for women to meet domestic requirements. Home economy, chemistry of foods, their blending, cookery, sanitation, laundering, homekeeping etc., are taught in the pioneer McDonald College in Canada. This system is fast assimilated in the United States and Europe. In agricultural India, the Canadian system of education for women requires to be introduced to develop harmony in society.

13. When these and other cognate improvements are grafted in S. I. agriculture, prosperity will smile on the country and genuine patriotism will flourish. The discontented politicians when backed by such a progressive nation can easily attain their goal. Thus scientific agriculture is the foundation for building up true patriotism. It is idle for a poor down-trodden caste-ridden nation to aspire for Swaraj.

Let us jointly pray that the Mighty Vishnu, who devised means to bring from a very long distance, neglecting several other powerful nations between, the deserving Briton to rule over fallen India, will lead us through that sovereign to our deserving ends.

Discussion.

Rao Sahib M. R. Ramaswami Sivan—said that Dr. Kunhikannan, whose paper in his opinion should have been read along with the present one, differed in views from Mr. Nayudu. Dr. Kunhikannan thought that western methods would not suit Indian conditions and that when introduced they should be thoroughly modified so as to suit our conditions.

Rao Sahib T. S. Venkataraman—said, with regard to the remark made by the writer, that Chettipalayam station had, on the other hand, justified the selection and had proved thoroughly suited for the purpose of evolving new strains.

[*Note:* The other 3 Conference papers viz: "Sidelines of Farming," "Agricultural implements in S. Kanara" and "Agricultural improvements in the Cauveri Valley" will appear in our next issue.

Editor.]

Science and Govt. Administration.

"Scientific opinion deserves better regard and esteem than it gets, and it suffers this loss because of the quite unreasonable contempt with which it views the operations of politicians. The world of science abstains from making its voice heard in the only way it can be heard, through the megaphone of the politician, by reason of the pressure of its organisation. It has itself no organisation....."

Merwyn O'Gorman.

Nature April 21, 1923.

Knowledge is proud that he has learned so much ;
Wiedom is humble that he knows no more!

Nature, July 21, 1923.
