https://doi.org/10.29321/MAJ.10.A04070

The role of the Agricultural Department in Community Development and National Extension Services with special reference to the development of local manurial resources

by

R. P. TALATI, M. Ag. Ph. D., and T. RADHAKRISHNAN,
Ministry of Food & Agriculture, New Delhi

The Agriculture Department has an important role to play in bringing about an all round improvement in Agriculture. Our Agriculture is in villages and there is growing awareness amidst farmers for adopting all important recommendations in bringing about agricultural improvements. Earnest consideration has, therefore, to be given as to how these recommendations have to be applied on field scale so that the ryots derive full benefits in the shortest possible time. It is considered that the proper medium for application of the expert agricultural knowledge would be through Community development and National Extension Blocks.

The activities of the Department can be brodly classified under three main categories, namely, (1) Agricultural Research (2) Agricultural Education and (3) Agricultural Extension.

Agricultural research: This work is carried out by different subject matter specialists incharge of sections like (a) Botany Section conducting research on plant breeding and evolving new strains of seeds (b) Entomology Section conducting research on prevention and control of insects and pests on crops (c) Plant Pathology Section for researches on prevention and control of diseases of plants (d) Agricultural Chemistry Section on soil analysis and for conducting measures for improving and maintaining soil fertility (e) Agronomy Section for evolving improved farm practices of crops and grasses. (f) Horticultural Section for conducting researches on fruits and vegetables and preservation of fruits and vegetables (g) Agricultural Engineering Section for carrying on researches on improvement of agricultural implements and tools.

Agricultural education: Educating sons of farmers and other youths through Extension Training Centres located in different regions of the country.

Agricultural extension: This section engages itself in bringing scientific methods and results of scientific researches to the doors of farmers.

In addition to above, the research stations of the Agricultural Department, carry out investigations with a view to solve the main problems of the State with special reference to local climatic conditions and types of soils. Amongst the many activities of the Agricultural department stated above, the launching of the local manurial schemes in the Community Development and National Extension Service blocks deserves special mention.

Scope for the development of local manures: Amongst the many reasons for the low average of agricultural production, the most important one is the wide spread deficiency of organic matter and soil Nitrogen under tropical conditions. At the present level of production, the major crops in India remove about 4 million tons of Nitrogen from soil while the actual quantity available for application to crops by way of cattle manure, compost, green manure, oil cakes and in-organic fertilizers is about one million ton. The net potential quantity of Nitrogen available through cattle dung and urine is about 2·82 million tons annually. There is yet another substantial source of Nitrogen through intensification of green manure practices which has yet to be fully developed. The utilisation of human excrements, village wastes through proper composting is the third source. If all these sources are adequately utilised and developed the fertility of the soils can be built up for increased food production.

Launching of manurial schemes: Two Schemes for the development of local manurial resources have been initiated by the Ministry of Food & Agriculture which are expected to result in stepping up food production in the current Five Year Plan period. Scheme No. 1 is larger and better utilisation of cattle dung and other organic wastes in Community Development and National Extension Service Blocks. Scheme No. 2 is night soil composting in bigger Panchayats. The object of scheme No. 1 is to raise the present level of compost manure production in villages estimated at about one ton per adult cattle to two tons per adult cattle and also improve the quality of manure by raising the Nitrogen content from 0·5% to 1%. Under the scheme compost inspectors are appointed after adequate training in the techiniques of composting and other organic manures - one for each block. Similarly selected farmers are also trained in these processes and these trained farmers serve as a media for demonstrating improved methods of composting to their neighbours. Scheme No. 2 relates to the production of compost manure from nightsoil in Village Panchayat areas. At present the refuse material available in Panchayats (two thousand to four thousand population group) is

not properly utilised for compost making. In order to encourage these Panchayats to prepare compost financial assistance has been provided under the scheme to enable them to purchase necessary equipment for collection of human wastes and refuse matter. This would enable each Panchayat to prepare about 350 tons of nightsoil compost manure annually. The scheme is now in progress in about 540 Community Development and N. E. S. Blocks with 418 trained Compost Inspectors and over 30,000 selected farmers trained in the techiniques of compost making.

The Demand, production and deficit for manure in Madras State: The cattle population in Madras State is about 10·49 million according to the All-India Livestock Census of 1955—56. The principal manure used by ryots is farmyard manure. It is obtained not only from these cattle-yards but also from collection of droppings on the way-side village boundaries. At present there is no data to show the existing level of cattle manure production in the State. If, however, we assume that Natarajan's report (1) on manure production in Chingleput District of the Madras State apply to the conditions of the whole State, the total cattle manure production would work out to 14·27 million tons annually. If we also consider the average quantity collected per head of cattle per annum at 0·67 tons according to his report, the total quantity collected for the whole Madras State would work out to 7·03 million tons. The total production of farmyard manure in Madras State would roughly then work out to 21·30 million tons.

Adequacy of farmyard manure: If we estimate the manurial requirements @ 5 tons per acre of irrigated areas and 2 tons per acre for unirrigated areas, then according to the acreage given in the All-India Statistics of 1953—54 the total requirements of cattle manure would work out to 49·28 million tons. The deficit is thus 27·98 million tons annually.

There is another method of computing the dificiency in estimating the quantity of Nitrogen removed by cros. According to Sri. M. S. Sivaraman, I. C. S., the requirements of Nitrogen in the Madras State is estimated at 2·79 lakh tons of Nitrogen. He has also stated that green manure has contributed about 33·4% of the total requirements of Nitrogen in the Madras State, in other words 0·93 lakh tons of Nitrogen is derived from green manure. The cattle dung manure estimated at 21·3 million tons annually would give 0·85 lakh tons of Nitrogen (calculated at 0·4% Nitrogen) and the

Ammonium Sulphate would supply about 0·30 lakh tons of Nitrogen of the total Nitrogen requirements. This is summarised as under :

1. Total Nitrogen requirements of the Madras State.		2·79 lakh tons.
2. Green Manure coverage	33·4% of the Nitrogen requirements.	0·93 lakh tons.
3. Farmyard manure available	21·30 million ton at 0·40% N.	0·85 lakh tons.
4. Nitrogen from Ammonium Sulphate	0·30 lakh tons Total Nitrogen available	2·08 lakh tons.

The total quantity of Nitrogen actually available is thus 2·08 lakh tons which make a dificiency of 0·71 lakh tons annually. This deficiency of 0·71 lakh tons of Nitrogen can be made up by intensifying green manuring pratices from the existing 33% to at least 50% and intensifying compost production and improving the quality of farmyard manure by about 50%.

Development of local manurial resources in Madras State : The Madras State has realised the importance of the local manurial schemes and trained 81 Compost Inspectors and about 8100 farmers who are now intensifying the work in 81 C. D. & N. E. S. Blocks. During the current year 1958–59, 25 more blocks are proposed to be covered and arrangements are being made to train additional 25 compost Inspectors and 1600 farmers.

The nightsoil composting in bigger Panchayats is also receiving careful attention and it is expected that during the current year 250 bigger Panchayats will be taking up of nightsoil compost production. If the progress is maintained at this rate there is no doubt that the deficit of organic manures will be wiped out in the very near future.

Conclusion : It will be noted from what has been discribed above that the proper medium of spreading the correct ideas will be first through the C. D. & N. E. S. Blooks where a well-knit organisation exists for giving ready help to the farmers. So far as

the local manurial schemes are concerned none can deny that our cattle wastes are not fully exploited and conserved and that concentrated drive is needed to utilise this useful fraction to the maximum possible extent. Let us hope that this important work occupies a permanent place in the activities of the Agriculture Department and its application is done through people of faith working in the C. D. & N. E. S. Blocks.

REFERENCES

1. Report on Pilot survey into manure production in Chingleput district by Dr. B. Natarajan, D. Litt. 1954 publication.
2. Compost & Sewage Bulletin vol. 9 and vol. 10 Nos. 2 and 1 of 1956 and 1957.
3. Sivaraman M. S. 1957 Soil Fertility in India "The March of India" Volume 9 (No. 12) (Pages 43—45).