

REPORT OF ASSESSMENT COMMITTEE ON VIJNAN MANDIRS



सत्यमेव जयते

VOL

I

1960

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**MINISTRY OF SCIENTIFIC RESEARCH
AND CULTURAL AFFAIRS**



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MINISTRY OF SCIENTIFIC RESEARCH & CULTURAL AFFAIRS
GOVERNMENT OF INDIA

FOREWORD

At the initiative of the late Dr. S. S. Bhatnagar, the Vijnan Mandir experiment was started by the Council of Scientific and Industrial Research in 1953 in order to stimulate science-consciousness among the people in the rural areas of the country. The first Vijnan Mandir was established at Kapashera near Delhi in that year and two more followed at Masauli in Uttar Pradesh and Kallupatti in Madras. When the Ministry of Scientific Research and Cultural Affairs came into being in April 1958, there were 18 Vijnan Mandirs distributed in 15 States and Union Territories of India. Since then, 20 more Vijnan Mandirs have been established bringing the total up to 38 in 17 States and Union Territories.

India lives mainly in her villages, and the 18 Vijnan Mandirs which were in existence in April 1958 seemed pitifully inadequate for the needs of a predominantly rural sub-continent. I felt that we should speed up the development of this scheme and we were able to establish 13 new ones during 1958-59. I had then hoped that it might be possible to establish at least five Vijnan Mandirs in each State by the end of the Second Five-Year Plan, and one in each district of India by the end of the Third Plan.

We, however, came up against difficulties posed by shortage of resources and personnel. It also seemed advisable before embarking on a large-scale programme of expansion to obtain an objective assessment of the work already done by the existing Vijnan Mandirs. I therefore appointed a committee under the distinguished Chairmanship of Shri Balvantray G. Mehta, M.P., to examine the working of the Vijnan Mandirs and make recommendations for their improvement and consolidation. The original terms of reference of the Committee are given below:—

- (1) How far have the Vijnan Mandirs fulfilled their objectives?
- (2) What are the difficulties they have faced and how can these be overcome?
- (3) Is there any need to change the nature and extent of the assistance given by the States?

- (4) The desirability of widening the scope of Vijnan Mandirs and of adding a Cultural Wing to them.
- (5) Any other suggestions for improving the work of the Vijnan Mandirs.

The Committee has now submitted its report and held that the idea is essentially sound and the programme should be pursued vigorously to make the rural areas science-minded. At the same time, the Committee has pointed out deficiencies in the scheme and indicated how these can be overcome. It has rightly observed that if some Vijnan Mandirs have not justified the hopes with which they were established, the fault is more often in the execution of the programme than in its conception. In any case, the Vijnan Mandirs are breaking new ground and we must watch their progress for some time more before a final judgment can be passed.

I am grateful to the Chairman and members of the Committee for the industry and care with which they have studied the working of the Vijnan Mandirs and the many constructive suggestions they have made. Most of their recommendations seem to me to be eminently reasonable and designed to improve greatly the effectiveness of the Vijnan Mandirs in disseminating scientific knowledge and creating a scientific temper among the rural masses. The workers in these Vijnan Mandirs will, I hope, be encouraged by the findings of the Committee and devote themselves to their task in the consciousness that in spite of occasional mistakes and lapses, they have begun well a work that is of the greatest significance to the future of India.

सत्यमेव जयते

(HUMAYUN KABIR)
*Minister of Scientific Research
and Cultural Affairs*

NEW DELHI,

22nd September, 1960.

Balvantray G. Mehta, M.P.,
Chairman, Assessment Committee on
Vijnan Mandirs

New Delhi, the 27th June, 1960.

My dear Kabir,

It is a happy coincidence that on the very day you are returning to New Delhi after your successful tour in Europe and the United Kingdom, I am able to present to you the Report of the Assessment Committee on Vijnan Mandirs of which you asked me to be the Chairman in September last.

The Committee having finished its labours, I can now look back on the many experiences we have had and feel truly, that it had been worthwhile to have studied the Vijnan Mandir Scheme and to have met so many people in different parts of the country in connection with it. It was something of a voyage of discovery in a field of vital importance in the life of the Nation, i.e., the spreading of scientific knowledge amongst the people, particularly in the rural areas. All of us in the Committee were ourselves going through a process of education in some of the realities facing the country. We came face to face with the appalling lack of even elementary scientific knowledge among the people who otherwise were shrewd and possessed of a fund of common-sense. We realised that there was a gap in National Reconstruction which, if not filled, can hold up every other programme.

I must, therefore, thank you on my behalf, and on behalf of the members of the Committee, for the opportunity you gave us to study this problem.

I am happy to say that our Report is unanimous. Some delay has been caused due to the accident which befell me in Travancore in January last and which incapacitated me for more than two months. I am grateful, however, that we are now able to present the Report.

I trust you will find the Report useful and it may be possible for you to make it a basis for further progress in this field.

With best wishes and regards.

Yours sincerely,

(BALVANTRAY G. MEHTA)

Prof. Humayun Kabir,
Minister for Scientific Research and
Cultural Affairs,
New Delhi.

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CHAPTER I

INTRODUCTION

1.1. The Assessment Committee on Vijnan Mandirs was appointed by the Government of India, Ministry of Scientific Research and Cultural Affairs in terms of their order No. 1/19/59-VM.I., dated the 14th September, 1959 (Appendix I)* to review the working of the Vijnan Mandirs and consider the desirability of enlarging their scope by the addition of cultural activities. The Committee consisted of the following:—

1. Shri Balvantray G. Mehta M.P.—*Chairman*.
2. Shri M. P. Bhargava, M.P.—*Member*.
3. Shri Muhammed Khuda Bukhsh, M.P.—*Member*.
4. Shrimati Yashoda Reddy, M.P.—*Member*.
5. Shri N. K. Sreenivasan, Under Secretary, Ministry of Scientific Research and Cultural Affairs—*Secretary*.

Shri G. Ramachandran and Thakur Phool Singhji were coopted as members of the Committee with effect from the 17th October, 1959.

1.2. The terms of reference of the Committee were:—

- (a) How far have the Vijnan Mandirs fulfilled their objectives?
- (b) What are the difficulties they have faced and how can these be overcome?
- (c) Is there any need to change the nature and extent of the assistance given by the States?
- (d) The desirability of widening the scope of Vijnan Mandirs and of adding a Cultural Wing to them.
- (e) Any other suggestions for improving the work of the Vijnan Mandirs.

1.3. With a view to eliciting opinion on the working of Vijnan Mandirs, the need for their continuance, the desirability of enlarging the scope by the addition of cultural activities and various other aspects, the Committee issued a Questionnaire (Appendix II) to the various State Governments, Universities, Rural Institutes, prominent educationists and others interested in the Vijnan Mandir or community development work. As the Committee was anxious not to restrict the scope of suggestions only to the points included in the Questionnaire, it was made clear in the covering circular letter that appropriate views and suggestions even on points not covered by the Questionnaire would be welcome. A list of State Governments, Universities, Organisations and individuals who furnished replies to the Questionnaire or sent written memoranda is given in Appendix III. The Committee desires to express its gratitude to all those who responded to the Questionnaire.

1.4. The Committee held its first meeting at Delhi on the 14th September, 1959, and subsequently held 53 sittings. At the first meeting the programme and procedure to be followed by the Committee

*For all appendices see Volume II of the Report.

were laid down. It was also decided that the Committee should visit some of the Vijnan Mandirs. Accordingly, the Committee visited 19 Vijnan Mandirs out of 38 located in the various States (Appendix IV) and studied in detail their working and the problems confronting them. At each Vijnan Mandir, the discussions covered the points arising out of the reviews prepared by the Officers and those that occurred to us during our visits to the Vijnan Mandirs. The Officers-in-charge of Vijnan Mandirs which could not be visited by the Committee were invited to attend discussions at selected Vijnan Mandirs. Advantage was also taken of the presence at Delhi of Vijnan Mandir Officers who had come to attend their Annual Conference, for detailed and useful discussions, between them and some members of the Committee. The Committee also held discussions with the field officers of the State Governments like Collectors of the Districts where Vijnan Mandirs are located, District Agricultural Officers, District Medical Officers, District Project Officers, Block Development Officers, the Sarpanchs of the villages and others engaged in the teaching of science or who have given thought to rural development problems.

1.5. Apart from general discussions and the usual form of replies to the Questionnaire issued in advance of our visits, much valuable material has been supplied to us by voluntary study groups set up at our instance at different places to consider the matter further in the light of our discussions with them (Reports of study groups at Appendix V). Further discussions were held at State Capitals with some Chief Secretaries of State Governments, Development Commissioners and with heads of various State Government Departments like those of Agriculture, Health Service, Medical Service, Education and Community Development.

1.6. In making this appraisal, therefore, the attempt has been to cover as wide a cross-section of the community as possible. The meetings and discussions were of considerable value to the Committee as they afforded the members an opportunity of having free and frank discussions with officers of State Governments and persons connected with or interested in Vijnan Mandirs. A list of the States, Institutes, etc., which the Committee visited and the persons whom the Committee met is given in Appendix VI.

1.7. In the session held at New Delhi during April 1960, the Committee had discussions with representatives of several Ministries, Council of Scientific and Industrial Research, Indian Agricultural Research Institute, University Grants Commission and the Ford Foundation. Appendix VII shows the total number of days spent by the Committee on tour and on discussions at Delhi. The Committee specially desires to record its warm appreciation of the valuable suggestions received from Dr. C. D. Deshmukh, Chairman, University Grants Commission, Shri S. R. Das, Vice-Chancellor, Visva Bharati, Drs. Ensminger and Stepanek of the Ford Foundation in Delhi and Prof. K. S. Krishnan, F.R.S., Director, National Physical Laboratory.

1.8. The Committee gave careful consideration to the views expressed by the various State Governments, Universities, Educational Institutions and prominent educationists and others, and also kept in view the paramount need for the propagation of scientific knowledge

in rural areas while preserving vital cultural values. The conclusions that the Committee has reached as a result of its deliberations and the considerations that have led to those conclusions, together with the recommendations, are set forth in our report.

1.9. The Report is in two volumes. The first volume contains the results of our examination of the various problems connected with the working of Vijnan Mandirs, a summary of recommendations which we have made and a note on financial implications of some of these recommendations. The second volume contains a note showing the efforts made by some other countries to popularise science, a gist of replies received from the State Governments, Rural Institutes and others, important observations and suggestions made during our discussions, as also the appendices to various chapters of Volume I.

1.10. The Committee is greatly indebted to State Governments, representatives of the various organisations interested in rural development work, representatives of the Central Ministries, Indian Agricultural Research Institute, Council of Scientific and Industrial Research, Government Agricultural College, Kanpur, Vijnan Mandir Officers and others for their cooperation in the Committee's work by giving oral or written evidence before the Committee. It is our duty to mention the Planning Research and Action Institute, Lucknow, the Sheila Dhar Institute of Soil Science, Allahabad, the Allahabad Agricultural Institute, Naini, the *Lok Bharti*, Sanosra, the *Sarvodaya Ashram*, Shapur, the *Hatundi Ashram*, Hatundi (near Ajmer), the *Vidya Bhawan Rural Higher Institute*, Udaipur, the *Gandhigram* (near Madurai) and the *Gandhiniketan*, Kallupatti, for the very valuable help and assistance they gave to the Committee in its work. Our grateful thanks are due to the latter six institutions for the generous hospitality they extended to us during our visit. The Committee takes this opportunity of thanking all those who submitted memoranda, notes or replies to the Questionnaire. Its thanks are also due to the Union Ministry of Scientific Research and Cultural Affairs and the various State Governments and their officers and other organisations for so kindly arranging to provide the necessary facilities for the Committee's work and its visit to the various Vijnan Mandirs.

1.11. The Committee had in Shri N. K. Sreenivasan an unassuming, efficient and very hard-working Secretary. He made all the arrangements for our tours with meticulous care and thoroughness, while at the same time he also undertook the analysis and collation, of the heavy volume of evidence which came before us, besides preparing all the relevant materials needed for the drafting of this Report. We wish to place on record our high appreciation of his services to the Committee. The Committee also places on record its appreciation of the efficient services rendered by the Section Officer, Shri D. P. Mukerjee and the assistance received from Shri K. C. Jain, Shri V. N. Tahiliani and stenographers and other members of the staff connected with the Committee's work. Shri H. S. Nema, Vijnan Mandir Officer, Sehore, who was specially called to assist the Committee's work was very helpful and he also deserves our thanks.

CHAPTER II

HISTORICAL SURVEY

(VIJNAN MANDIR—CONCEPT AND APPROACH)

2.1. Developments in science and technology are changing the world picture with phenomenal rapidity. After a long and hard struggle with entrenched interests, the scientific method of observation and experiment has been accepted as eminently suitable for the solution of material problems. Besides making life easier, happier and more prosperous for millions, science has emancipated man from many irrational and harmful practices and superstitions. Dogmatic religion has been vigorously shaken, though several superstitions still linger.

2.2. Learning has been a time-honoured tradition in India. In the words of our Prime Minister:

“The *Upanishads* are instinct with a spirit of inquiry, of mental adventure, of a passion for finding out the truth about things.....there is an element of the scientific method in that approach And the famous invocation is for light and understanding”.¹

How the mind of India turned to increasing emphasis on tradition and custom through the centuries and lost in the race for acquisition of knowledge is a sad story. The predominantly agricultural bias of India's economy influenced her national character. The village became largely a self-contained economic and social unit without vitalising contacts with the changing world outside. More and more the peasant came under the mercy of natural as also external forces which he could neither understand nor control. Adverse seasonal conditions and recurrent bouts of pestilence lowered his vitality and provided a congenial climate for growth of fatalism. Fear of attacks and invasions from outside led to a negative attitude; social injustice and tyranny were suffered in patient ignorance. Doubt and curiosity which are so essential to progress tended to weaken in a community riddled with centuries of social and religious inhibitions and superstitions.

2.3. When industrialism was heralding the machine age in the West, India was politically subject and so lost her place in the march of events. And the type of Western education which was introduced in 1835 for the avowed purpose of “promotion of English literature and science”² was not real enough and did not provide a remedy for this situation. Further, whatever technical education was given was theoretical and unrelated to the practical needs of the country. Writing in the *Harijan* more than two decades ago, Gandhiji observed:—

“I have a painful experience of some agricultural graduates. Their knowledge is superficial. They lack practical experience”.³

¹Discovery of India (1946 Edition), page 66 and 67.

²Rise and Fulfilment of British Rule in India—Thompson and Garrett.

³Educational Reconstruction (1938 Edition) page 4, (Publishers Vora & Company, Bombay)

Education in applied science and technology had, of course, made some limited progress, but even the talent thus trained was not properly harnessed to improve the country's economy and there never was any organised national effort to take science to the villages. As a result, many trained men drifted into fields not related to their training and the money and time spent on scientific education bore little fruit in terms of national progress.

2.4. The rapid increase in population led to fragmentation of land holdings to such an extent as to render agricultural operations uneconomic. Subsistence farming dependent on the vagaries of monsoons and the growing number of landless peasantry reduced rural economy to sore straits. Several rural industries which have always had a definite place in the economy of the country withered away, being unable to compete with Western capitalism. Industrialisation was geared mainly to the war effort in both World Wars. It did not build Indian economy on an integrated basis and industry did not make any appreciable change in the economic situation of the land. Agriculture by primitive and outmoded methods is still looked upon as a way of life and not as an industry.

2.5. But with India becoming a Republic conditions have begun to change and a new force has begun to transform the people from tradition and custom to initiative and action. People have come to realise that poverty is the enemy of spirituality and that simplicity must not be confused with insanitation and squalor. The impact of industrialisation has, to some extent, shattered the isolation of villages from one another and the wide world and villages are no longer centres of placid credulity and traditionalism as before. The Community Development movement which was inaugurated in October 1952, lays emphasis on the need for wide mobilisation of available resources on something like a war-footing. The objective is not only to increase the standard of living of the tiller, but also to transform the psychology of the people. Social beliefs, prejudices and inhibitions have still a powerful sway over the minds of people. The tragic 'miracle' girl incident at Zinzka near Bhavnagar which resulted in the death of 58 persons in a senseless stampede in September 1959, is a significant pointer.

2.6. Serious thought has, therefore, to be given to the measures to be adopted to "outflank the strongholds of conservatism"¹ and all the inhibitions of the untaught peasant and to build up his strength and awareness. Speaking in the Parliament on 1st May, 1958 in connection with the debate on the Scientific Policy Resolution, the Prime Minister reminded the nation that to develop science in a country like India which is "..... a mixture, if I may say so, of the bullock cart and atomic energy" was no easy thing.²

Vijnan Mandir Concept

2.7. It is, however, heartening to find that the problems confronting us are not unique and that countries like the United Kingdom, Japan and the United States of America were in the same predicament years ago and that even today there are others grappling with similar problems. We were told that until some years ago agricul-

¹Historical Geography of India—P. E. Roberts. (1935 Edition, page 589).

²Lok Sabha Debates (Vol. XVI, No. 58), 1st May 1958, page 12766.

tural practices in the United States of America were generally guided by almanacs in farm houses. Dr. Ensminger of the Ford Foundation pointed out that the peasant all over the world was conservative with his roots in past traditions and to orient his mental attitude and influence him to adopt improved practices and methods was never easy.

2.8. The Vijnan Mandir concept appears to have taken shape in order to help villagers to move with the times by convincing them that a life of happiness and prosperity is possible only on the basis of science and technology. The establishment of small scientific centres in rural areas for the purpose of dissemination of scientific knowledge among the people and creating a scientific temper in them was envisaged by the late Dr. S. S. Bhatnagar. In his address at the opening ceremony of the National Physical Laboratory in 1950, Dr. Bhatnagar requested scientists to organise themselves for voluntary service in villages and stated:

"We have proposed that we should select a certain number of villages near the seat of our Laboratories and visit them in teams on Sundays and holidays and help villagers by improving their cottage industries, hygiene and sanitation and their general scientific knowledge by popular scientific talks. There is nothing more infectious than personal contact and we hope the simple experiment will enable us to take science to villagers".

2.9. In this brief para we have the whole charter of functions for every Vijnan Mandir. Here, in the words of the great scientist who initiated the Vijnan Mandir Scheme, we have the directives and inspiration in one. Dr. Bhatnagar lays down that science laboratories and villages must be brought together. He has stressed the improvement of village industries and rural sanitation and added to this the need for spread of scientific knowledge among the people. And finally, he has pointed to the importance of personal contact between the scientist and the people without which this work cannot succeed.

2.10. We understand that some pioneer work was being conducted by Prof. K. N. Kaul near Lucknow to impart knowledge through service programmes. It appears that Dr. Bhatnagar was impressed with the efforts and so the principle underlying them was given concrete shape by establishing the first Vijnan Mandir at Kapashera (near Delhi) on 16th August, 1953. Kapashera was reported to have been selected as there were a number of schools in the locality, though it was realised that it was not a proper location in view of its proximity to Delhi. Inaugurating the Vijnan Mandir on 16th August, 1953, the Prime Minister observed that the miniature "house of science" would teach villagers how they could tackle their problems in daily life in a scientific way.

2.11. The Vijnan Mandir at Kapashera is located in the premises of the late Dr. Bhatnagar's farm house. The working of this Vijnan Mandir was reported to have shown some good results. With the approval of the late Maulana Abdul Kalam Azad, the Chief Ministers of States were consulted on the establishment of similar centres in their States. The Chief Ministers were informed in April, 1954, that

¹From *The Hindu*, dated 17-8-1953.

the functions of the centres would be (i) to popularise among the people principles of general science; (ii) to make rural people scientific minded and (iii) to advise villagers on matters of agriculture and health. Each Vijnan Mandir was to be in charge of a Master of Science, specially trained for this work. The cost of staff, equipment and apparatus along with honorarium to a medical man who could give advice on a part-time basis was to be met by the Centre, and the States were requested to provide accommodation. The Vijnan Mandirs were to be located at the sites recommended by State Governments.

2.12. The proposal was welcomed by State Governments, who offered accommodation facilities for the opening of such centres. The second Vijnan Mandir was set up at Masauli in Uttar Pradesh taking advantage of accommodation offered by a Bombay donor. In June 1955, the third Vijnan Mandir was established at Kallupatti near Gandhiniketan in Madurai District of Madras. This Vijnan Mandir was inaugurated by the Chief Minister of Madras.

2.13. The Vijnan Mandir Scheme which was initiated by the Council of Scientific and Industrial Research in 1953 was transferred to the Government of India in August 1955. Four additional Vijnan Mandirs were set up by the former Ministry of Natural Resources and Scientific Research. On the bifurcation of that Ministry, the Scheme became the responsibility of the Ministry of Education and Scientific Research which established 11 Vijnan Mandirs. On the eve of the formation of the Ministry of Scientific Research and Cultural Affairs in April 1958, 18 Vijnan Mandirs were functioning and 20 have since been added, bringing the total number to 38. A statement showing the distribution of Vijnan Mandirs in the States and the dates on which they were established is at Appendix VIII.

2.14. The objective of the Vijnan Mandir Scheme is to explain to the people in rural areas the methods of science and to make them familiar with the scientific principles involved in their day-to-day problems of agriculture, crop protection, village sanitation, etc. Under the Scheme, each Vijnan Mandir is to be equipped with a laboratory for conducting simple analysis of soil, water and food. The cost of equipment, furniture, etc., is about Rs. 16,000 per Vijnan Mandir. Some facilities exist for identification of common pests and insects as also for plant pathology and imparting education in rural health and sanitation. A small museum is attached to each Vijnan Mandir. The museum contains specimens of flora and fauna, minerals and rocks available in the vicinity of the Vijnan Mandirs. Each Vijnan Mandir is manned by the following staff:—

- 1 Vijnan Mandir Officer on Rs. 250—15—400.
- 1 Assistant Vijnan Mandir Officer on Rs. 160—10—330.
- 1 Laboratory Attendant on Rs. 35—1—40—2—60.
- 1 Peon-cum-watchman on Rs. Rs. 30— $\frac{1}{2}$ —35.
- 1 Part-time sweeper (on local rates).

Facilities for pathological work are now available only in seven Vijnan Mandirs (Appendix IX); similar facilities are not available in the remaining 31.

2.15. All expenses, both recurring and non-recurring, the running of Vijnan Mandirs are borne by the Government of India, except for accommodation which is to be provided free of rent by State Governments. The recurring and non-recurring expenditure on each Vijnan Mandir is as follows:—

(1) Recurring on Staff and contingencies	Rs. 12,000
(2) Non-recurring on furniture, fixture, equipment and apparatus	Rs. 16,000

Details of equipment, etc., authorised for each Vijnan Mandir are given in Appendix X.

2.16. An allocation of Rs. 45 lakhs was originally made in the Second Five-Year Plan on the basis that 92 Vijnan Mandirs would be set up according to a phased programme:—

1956-57	...	...	...	...	20
1957-58	...	...	...	...	20
1958-59	...	...	...	...	20
1959-60	...	...	...	...	20
1960-61	...	...	...	...	12
					<u>92</u>

The allocation has since been reduced to Rs. 35 lakhs, exclusive of the sum of Rs. 5 lakhs made available by the Cultural Division of the Ministry for the cultural wing proposed to be attached to Vijnan Mandirs. It appears that in view of the non-availability of suitable accommodation at the sites suggested by State Governments, Vijnan Mandirs could not be set up according to schedule. The annual expenditure incurred and Vijnan Mandirs set up up to the end of March 1960, are as follows:—

Year	No. set up	Total number in position	Actual Expenditure
1956-57	14*	14	Rs. 52,632
1957-58	4	18	Rs. 3,05,599
1958-59	13	31	Rs. 2,06,872
1959-60	7	38	Rs. 4,15,513

*Including the 3 taken over from the Council of Scientific and Industrial Research.

2.17. We now understand that according to targets, as since revised, 70 Vijnan Mandirs are to be set up by the end of the Second Five-Year Plan, and 320 Vijnan Mandirs by the end of the Third Five-Year Plan on the basis of one per district.

CHAPTER III

FACTUAL PICTURE TODAY

3.1. As already stated, our visits covered 19 Vijnan Mandirs in 14 out of 15 States, besides the Union Territories of Delhi and Himachal Pradesh. We also had discussions with officers-in-charge of the remaining Vijnan Mandirs which we could not visit owing to the limited time at our disposal. Apart from their replies to our Questionnaire, all the officers were invited to send detailed memoranda indicating the special difficulties experienced by them in the administration and work of Vijnan Mandirs and how they could be overcome. At our instance, some Vijnan Mandir Officers formed themselves into a few study groups and their reports were also made available to us. The impression gathered by us during our visits and discussions are set out in subsequent paragraphs.

Location

3.2. Of the 38 Vijnan Mandirs, 27 are located in rural areas covered by Development Blocks. The rest are situated in urban or semi-urban areas including the two at Sehore and Amravati, which are District headquarters. The selection of sites in eight cases at least seemed to be unsatisfactory for the reason that they were not easy of access. Some are not served by good roads while others being situated in remote corners of the villages are cut off from inhabited areas. An atmosphere favourable to stimulate the receptivity of the people is also lacking in certain cases. Certain elementary facilities like electricity and water which are essential for the successful functioning of a Vijnan Mandir have not been made available. Electricity for laboratory work and for arranging film shows, demonstrations, etc., is not available in as many as 17 Vijnan Mandirs. This is indeed a big number. (This figure does not include the Vijnan Mandir at Kapashera, near Delhi, which has a generator). In the absence of electricity several items of useful equipment are lying idle.

Accommodation

3.3. Accommodation for Vijnan Mandirs under the scheme is to be provided by the State Governments and they have done so, except in a few cases where private people have either donated the buildings or provided rent-free accommodation. According to the scheme as circulated to State Governments in 1958, the minimum requirement of accommodation for each Vijnan Mandir is 1,300 sq. ft., against an accommodation of 900 sq. ft. envisaged earlier. Only 15 Vijnan Mandirs satisfy the revised requirement of 1,300 sq. ft. Twenty-four out of 38 Vijnan Mandirs have a floor area of over 900 sq. ft. Of the remaining 14, in respect of seven Vijnan Mandirs, the accommodation falls short of even 650 sq. ft. Of these seven the Vijnan Mandir at Itachunna in West Bengal has an accommodation of only 360 sq. ft. Generally, some accommodation was provided by the States for the Vijnan Mandirs within a month after the posting of Officer-in-charge. However, for one Vijnan Mandir the staff had to wait for nearly six months to get even mere temporary accommodation from the State Government. In eight more centres it took more than six months to secure the present accommodation, though some accommodation had

been provided earlier as a stop-gap arrangement. No laboratory had been set up at 15 places due to lack of space, equipment and other facilities. (Details at Appendix XI).

3.4. There are no satisfactory arrangements for good maintenance of the buildings at 21 Vijnan Mandirs. At some places, the buildings are in such a state of disrepair that there is the risk of apparatus being damaged during the rains. We understand that there is no provision in the Vijnan Mandir Budget for repair and maintenance of buildings.

Residential Accommodation

3.5. At 24 places, the staff of the Vijnan Mandirs were not able to secure suitable residential accommodation and we were told that some of them had to stay at a distance of five to ten miles. Such a state of affairs is hardly conducive to the efficient working of the Vijnan Mandirs.

Supply of Equipment

3.6. There have been delays in supplies of stores and equipment and supplies have also been reported to be inadequate in many cases. Some Vijnan Mandirs which had been functioning for over six months at the time of our visit had received about 20 per cent of the equipment. When questioned, the Vijnan Mandir Officers stated that they had no indication as to when the remaining equipment would be received. At 22 centres the first consignment of equipment, apparatus and chemicals was received within three months of the posting of the Officers. In two cases, however, the first consignment reached the Vijnan Mandirs only after six months.

Furniture

3.5. Only eight Vijnan Mandirs had received the first consignment of furniture within three months of their establishment while seven of them did not get the first consignment of their supplies even after nine to ten months of their establishment. We were told that quotations are invited by the Vijnan Mandir Officers from local firms and by the concerned State Governments and sent to the Ministry which places the orders. Others got their supplies within a period of three to nine months.

Supply of Chemicals

3.8. We were informed that certain essential chemicals required for Vijnan Mandir work have not been supplied despite repeated requests from the Officers. It was represented that such inordinate delays had created a sense of frustration in the minds of Vijnan Mandir Officers.

Library

3.9. There are no libraries worth the name in the Vijnan Mandirs. Some free publications in English and Hindi are displayed. No popular scientific literature written in an attractive style in regional languages is available. A bibliography of books that ought to be kept in the library is also not available. Even the books, pamphlets, etc., supplied to Blocks are not reaching the Vijnan Mandirs. The Vijnan Mandirs are not linked in any real way with researches conducted at various research centres and laboratories in the country, especially those having a bearing on rural problems.

Science Museums

3.10. Most of the Vijnan Mandirs we visited have organised small museums where specimens of local flora and fauna, of diseased plants, and samples of rocks and minerals available in the vicinity are displayed. The exhibits were mostly collected by the Officers themselves except in a few cases where supplies had been received from other outside agencies. The information about the exhibits was generally in English and not in the regional language. Some of the other exhibits were of such a type as might not be easily understandable by the average farmer and doubts were expressed how far such exhibits which were beyond the comprehension of the common villager would help the extension of scientific knowledge. Working models of simple and useful machines were not available. However, some Vijnan Mandirs had on their own initiative prepared models of cow-dung gas plants, janata frigidaire and improved water lift, as also non-erodable and water-proof housing materials. But enquiries revealed that adequate action has not been taken to popularise the models in rural areas. Lack of accommodation and other facilities are, as in other cases, serious limiting factors that have affected the development of museums on an efficient basis.

Science Clubs

3.11. Through the agency of Vijnan Mandirs, Science Clubs have been started for the benefit of the rural population and in some educational institutions located in the neighbourhood. The Vijnan Mandirs arrange group discussions, talks, lectures and demonstrations at the meetings of Science Clubs.

Analytical Work

3.12. In the 23 laboratories which are functioning, 19 were conducting soil analysis, 18 water analysis and 11 food analysis. The total number of samples analysed by these Vijnan Mandirs is about 1,587 in the case of soil, 689 in the case of water and 272 in the case of food since their inception. Details of the work done in the different Vijnan Mandirs are given in Appendix XII. It will be seen from this Appendix that eight Vijnan Mandirs had each analysed even less than 50 samples up to end of 1959.

Survey of Local Problems

3.13. At some places we visited, surveys into the special problems of the area had been conducted, but copies of survey reports were not available in the Vijnan Mandirs as they had been sent to New Delhi. We thought it strange that these reports should be lying somewhere in the shelves in Delhi and not be with the men on the spot. One Vijnan Mandir Officer told us that though he had conducted a survey, he could not bring out a proper survey report as the necessary *pro forma* had not been received from the Ministry. At another place, we were informed that a survey of local problems was initiated after the establishment of the Vijnan Mandir and that it had to be discontinued under instructions from Delhi. In some cases, surveys had been completed but no reports had been drawn up setting out the conclusions based on the survey. The importance of a survey report in planning the programme of action cannot be minimised and without survey reports no study of achievements is possible with reference to the problems of the area. Unless Vijnan Mandir Officers

are initiated into the technique of conducting a survey and drawing up survey reports, they may not get an insight into local problems and be able to establish contacts with village leaders, organise Science Clubs, etc. It appears that in a few cases, survey reports were drawn up and shown to the officers of the Ministry during inspection of Vijnan Mandirs, but the advice received was of a general nature and had no relation to the specific problems of the area arising from those reports and how they could be tackled. Nor had Vijnan Mandir Officers been told what their role was in dealing with the problems brought out during the survey.

Staff

3.14. In several Vijnan Mandirs the full complement of staff had not been posted. In four Vijnan Mandirs there were no Vijnan Mandir Officers and in ten, Assistant Vijnan Mandir Officers were not posted. The posts of Laboratory Attendant were vacant in 19 Vijnan Mandirs and those of peon-cum-watchman in five Vijnan Mandirs. We understand that four Vijnan Mandir Officers and five Assistant Vijnan Mandir Officers left to better their prospects up to the end of December 1959.

3.15. The Vijnan Mandir Officers and the Assistant Vijnan Mandir Officers, where they have been posted, are generally drawn from different groups of science to ensure adequate coverage. For example, if the Vijnan Mandir Officer is a Master of Science in the physical sciences, then the Assistant Vijnan Mandir Officer is a Master of Science in the biological sciences or *vice versa*. In a few cases, however, we were surprised to find that both the officers were from the same group; from Agriculture at Sundar Nagar in Himachal Pradesh and from Botany at Mayasandra in Mysore State. There is, therefore, need to post the staff on a more rational basis.

Training

3.16. We regret to observe that almost all the Vijnan Mandir Officers have expressed dissatisfaction with the initial training imparted to them. Of the 62 Officers in position as on 1-12-1959, 38 Officers were given some training in different institutions like the Indian Agricultural Research Institute, Directorate of Plant Protection and the Delhi Corporation Health Laboratory for short periods. It was put to us that the training imparted to Vijnan Mandir Officers was not realistic enough and did not fully take into account the role and functions of Vijnan Mandirs and equipment supplied to them. The Vijnan Mandir Scheme, as approved by the Government in 1956, envisages training of staff for five months in the fields of Agriculture, Animal Husbandry, Public Health and Sanitation, but this programme has not been implemented. Instead, a shorter course for ten weeks was organised for the staff at the Indian Agricultural Research Institute, etc., but even that was only partly implemented. Some Vijnan Mandir Officers were given no training at all before their posting. One Vijnan Mandir Officer informed us that he was asked to report to Delhi immediately after selection and that no guidance was given to him; nor was he informed of his duties and responsibilities. No curricula of training appear to have been supplied to the trainees; nor were they aware whether any curricula had been supplied to the training institutions concerned. No books appear to have been supplied

to the trainees, nor were they given any guidance as to the type of books to be consulted.

Lack of Powers in the day to day Administration

3.17. The Vijnan Mandir Officers have represented to us that they have no powers whatsoever in the day to day administration of the Institutions and that they cannot incur expenditure even on essential items costing a few rupees without the prior approval of the Central Ministry. In a few cases where some expenditure had been incurred in the interest of Vijnan Mandir work, we were told that explanations of Officers had been called for.

Imprest

3.18. We understand that each Vijnan Mandir is given an *ad hoc* advance of Rs. 250/- to meet expenses connected with its establishment. Thereafter an imprest of Rs. 50/- is allowed for each Vijnan Mandir, which is in the nature of a rotating advance, to meet contingent expenditure. Many Vijnan Mandir Officers have drawn pointed attention to the inadequacy of funds at their disposal to meet day to day expenses. As they have not been declared as the Drawing and Disbursing Officers, contingent vouchers have to be sent to Delhi for recoupment and we understand that there is a time-lag of about three to four months before the amounts are drawn centrally at Delhi and sent to the various Vijnan Mandirs. In many cases a delay of more than three to four months has been reported. During the intervening period, the Vijnan Mandir Officers were often forced to incur expenditure from their pocket either to clear consignments received from Railways to avoid payment of demurrage or to meet other pressing commitments which could not be held over till the imprest was recouped. Even the little latitude allowed to them is thus nullified by the delay in the recoupment of imprest.

Guidance and Inspection

3.19. We understand that up to 31-12-1959, 28 Vijnan Mandirs had been inspected by the Officers of the Ministry, and the remaining ten which were not inspected had a standing of a year or a little less. The Vijnan Mandir at Sundar Nagar which was established more than two years ago had been inspected only once up to the time of our visit. No follow-up action appears to have been taken on the basis of the inspections.

Advisory Committees

3.20. Local Committees have been constituted only at 15 centres out of 38 to review the work of Vijnan Mandirs from time to time and suggest measures for their proper functioning. The set-up of these Committees is understood to have been modelled generally on the lines indicated in the communication issued to all State Governments in March 1957. The functions of these Committees do not appear to have been defined precisely. Except in three cases, the Collector or his nominee is the Chairman; in the remaining cases, the Committees have non-official Chairmen. At some places like Sehore and Vikarabad, no separate committees have been set up, but the Vijnan Mandir Officers attend meetings of the Block Advisory Committees.

3.21. Our study of the working of the Committees shows that their meetings are not held at regular intervals. Some Committees like those at Angul and Barsul had not met even once. At a few places, however, some meetings had been held and the minutes were sent to the Ministry. But the Committees were not aware what action had been taken on the various recommendations made by them. Some members of the Committees expressed dissatisfaction over the manner in which their recommendations had been treated. Such a state of affairs cannot be conducive to the healthy growth of Vijnan Mandirs and cannot produce results without adequate cooperation and assistance from leaders of the rural community.

3.22. The experiment of organising subsidiary agencies to associate local people in educational programmes is being tried by the Vijnan Mandir at Masauli (Uttar Pradesh) in certain adjacent villages. The objective is to enlist popular support and create a more abiding interest in planning the programmes based on local needs. We were told that these agencies serve as forums for study of village problems at close quarters, and that the village intelligentsia participating in group discussions generally report back to the villages and serve as extension agents for diffusion of scientific knowledge.

3.23. The Vijnan Mandirs are working in isolation with little contact with the State agencies operating in their areas, with the result that they have been sometimes described as "islands of central administration". Very few people in the neighbourhood were aware of their existence. The Committee found that there was some confusion in certain places about the objectives and functions of Vijnan Mandirs. In one State the correspondence relating to one Vijnan Mandir was being handled by one Department and that relating to another by another Department. In fact we were surprised to hear at some places that Vijnan Mandirs were not considered by local officers of sufficient importance even to be brought to the notice of visiting Ministers and other dignitaries.

CHAPTER IV

A REVIEW OF THE SCHEME

4.1. In the preceding Chapter we have described the present position in regard to the work of Vijnan Mandirs. It will be seen that this picture and the original concept of the scheme differ materially. It is, therefore, incumbent on us to analyse why this disparity should have arisen between the objectives and achievements.

Centralised Control

4.2. The Vijnan Mandirs suffer so much from centralised control that they can be described as "all brakes and no engine". While the success of the experiment must depend on the initiative and personality of the officers, the machinery is not geared to produce the best results. The Vijnan Mandirs were brought into existence to meet a great need of the country but nothing worthwhile appears to have been done to create the conditions conducive to their healthy growth and development. All that has been done is to plant a few Vijnan Mandirs here and there. Sufficient thought does not seem to have been given to the need to integrate them with bigger institutions engaged in educational or rural reconstruction work. It is not, therefore, surprising that many Vijnan Mandirs have not succeeded in creating a favourable atmosphere.

4.3. Too much centralised control appears to have damped enthusiasm and led to an unwillingness to accept responsibility for action. It is obvious that an institution like the Vijnan Mandir cannot function successfully unless the man on the spot is sufficiently enthused over the work and allowed sufficient latitude in the day to day working of the institution, or unless there is delegation of authority to some one near the Vijnan Mandir.

Duties and Functions

4.4. The duties and functions of the Vijnan Mandir Officers have not been clearly defined. A schedule of duties is not available and when questioned, Vijnan Mandir Officers informed us that no instructions had been issued about the exact scope and nature of their work. The Vijnan Mandir Officers are expected to enlighten the villager on the programme and enlist his interest and secure his participation. How efficiently they do that depends on their own appreciation of the programmes. In the absence of a clear-cut scheme, many Vijnan Mandirs have not succeeded in making an impact on the rural population.

4.5. No clear-cut programme of work has been given to Vijnan Mandirs which carry on their activities in a rather perfunctory manner. This deficiency has to be remedied by giving proper shape and content to the programme, bearing in view the objectives of the scheme and the capacity and limitations of the Vijnan Mandirs.

Survey Reports

4.6. No attempt has been made to initiate Vijnan Mandir Officers into the techniques of conducting surveys and the action to be taken thereon. In fact during discussions with the representatives of the

Ministry of Scientific Research and Cultural Affairs we were informed that the importance of this aspect had not been sufficiently emphasised. The result is that many officers do not know what type of reports are required. Nor have any arrangements been made for the supply of reports of surveys conducted by the Block staff. However, we were happy to note that a few Vijnan Mandir Officers on their own initiative had obtained the Block Survey Reports and utilised them for their own work.

Inadequacy of Staff

4.7. Inadequacy of staff has been a serious handicap to the efficient working of the Vijnan Mandirs. We have been told that recruitment to the posts of Assistant Vijnan Mandir Officers has been held in abeyance in view of the doubts felt in certain quarters about the need for a second officer.

Lack of Proper Training

4.8. There is no arrangement at present for imparting technical training to the Vijnan Mandir Officers on a systematic basis. The training that has been given is of a haphazard kind. It does not appear that even those in charge of training institutions like the Indian Agricultural Research Institute have given sufficient thought to the question of training. In fact during discussions the representatives of the Institute informed us that they did not know much about the Vijnan Mandir Scheme, except that they gave some training according to the pattern laid down by the Ministry of Scientific Research and Cultural Affairs. We were told that they were not consulted before the programme of training was finalised.

Infrequent Inspections

4.9. The impression left on our minds is that Vijnan Mandirs are mostly fending on their own without any guidance worth the name. Inspections of Vijnan Mandirs so far have been few and far between. Inspections which provide first-hand knowledge of local difficulties cannot be effective unless they are conducted more frequently.

Accommodation

4.10. In many places, the accommodation provided is not suitable or adequate for the running of Vijnan Mandirs, especially for the installation of a good laboratory and an equally good museum. We have been told by the Ministry of Scientific Research and Cultural Affairs that conditions regarding minimum floor area were stipulated in the last two years or so, but some Vijnan Mandirs were opened even earlier on the basis of assurances given by the States that adequate accommodation and other facilities would be provided by them. Even though some of the States did not keep them, we were informed by the representatives of the Ministry that Vijnan Mandirs were allowed to be opened in the expectation that such action would help in expanding the Vijnan Mandir Scheme in the country.

Inadequate and Ill-balanced Supplies

4.11. In many Vijnan Mandirs, not all the items of equipment, chemicals and stores included in the scheme have been received. This has seriously hampered the proper functioning of the Vijnan Mandirs. Apart from delays and inadequate supplies, we were also

told that some equipment and chemicals of incorrect specifications have been supplied. We were surprised to hear that in some cases, Vijnan Mandir Officers had not been informed of the purpose for which some equipment had been supplied and how it should be used. The complaint that equipment is not properly balanced and that some could not be used in the absence of certain accessories came up more than once. What equipment and stores Vijnan Mandirs should have will depend on their role and functions, but it will be appreciated that equipment cannot be useful unless it is properly balanced. We have had no time to examine different items separately to ascertain how far the criticism about non-rationalisation of equipment is justified but the fact that such criticism has been voiced is a matter for concern.

Absence of Coordination

4.12. Vijnan Mandirs are located close to educational institutions like teachers' training schools, multi-purpose schools, etc., but no attempt has been made to bring them into closer relation with the working of those institutions so as to facilitate the use of all the available facilities to the best advantage. Coordination is lacking at the field level with the Block level specialists and at the district level with the District Officers. What coordination has been effected at some places is mostly due to the personal relations of the officers and other incidental factors.

4.13. The Vijnan Mandir Scheme, as approved by Government is based on the assumption that "the best way to achieve the maximum results would be to integrate the working of the Vijnan Mandir Scheme with the Community Projects and N.E.S. Programmes". Nothing substantial appears, however, to have been done to implement this policy and effect close liaison between the Blocks and Vijnan Mandirs. We understand that since the inception of the scheme, several communications have been issued to State Governments by the sponsoring Ministry and by the former Community Projects Administration, explaining the objectives of the scheme and inviting their cooperation and assistance in the administration of Vijnan Mandirs. In May 1958, the Development Commissioners' Conference at Mt. Abu recommended that Vijnan Mandir Officers should function as full-fledged members of the Block Team in order to link the various activities of Vijnan Mandirs with those of Community Development and National Extension Service Blocks. It was also suggested that the work of Vijnan Mandirs should be technically supervised and guided by Directors of Public Instruction in States in accordance with the programmes and instructions of the sponsoring Ministry.

4.14. No follow-up action appears, however, to have been taken to see whether and to what extent the above ideas were implemented; nor have any measures been taken to get the State Governments associated to a larger extent in the day to day administration and work of Vijnan Mandirs. During discussions with the representatives of the Ministry of Community Development and Cooperation, we were informed that some instructions had been issued in response to the recommendations made at the Mt. Abu Conference, but it is not clear why they have not been implemented.

States' Participation

4.15. The Vijnan Mandir Scheme does not provide for the participation of States except for the provision of accommodation. As one Development Commissioner told us, the contact with the States began and ended with the suggestion of a site and provision of accommodation.

Lack of Popular Association

4.16. No systematic attempt has also been made to associate the people with the working of Vijnan Mandirs. In the absence of any active effort to mobilise local support, it is not surprising that many Vijnan Mandirs have not evoked any popular enthusiasm.

4.17. Yet the present working of Vijnan Mandirs has in it the possibility of their achieving some day what the originators of the scheme had in mind, provided certain necessary steps are taken and proper conditions created. Notwithstanding several handicaps and limitations, a few Vijnan Mandirs have been able to make some real impact on the rural population and we would like to record our appreciation of the good work done by them. We would, however, emphasise that their success is due, not to any special merit in the administration of the scheme, but to the personal initiative and enthusiasm of the officers concerned. It is our clear view that we have among the Vijnan Mandir Officers excellent material for the fuller development of the whole scheme. But over-centralisation, administrative delays, inadequate and untimely supplies, paucity of funds and staff at different centres, lack of training, inadequate powers and consequent frustration in the staff are serious impediments to the success of this National programme.



CHAPTER V

NEED FOR VIJNAN MANDIRS

5.1. The Scientific Policy Resolution of the Government of India (Appendix XIII) with its emphasis on science education recognises that "the dominating feature of the contemporary world is the intense cultivation of science on a large scale and its application to meet a country's requirements". The following, among other things, were laid down as the objectives of this scientific policy:—

- (i) "to foster, promote and sustain by all appropriate means, the cultivation of science and scientific research in all its aspects—pure, applied and educational, and
- (ii) in general to secure for the people of the country all the benefits that can accrue from the acquisition and application of scientific knowledge".

5.2. We have been called upon not to re-examine the need for Vijnan Mandirs but to review the working of existing Vijnan Mandirs and make suggestions for their improvement. Some State Governments and others have expressed doubts about the utility of Vijnan Mandirs, not because of any want of merit in the principles underlying the scheme, which has been accepted as laudable, but because of circumstances like lack of equipment, shortage of trained personnel and other factors. It has been argued that a separate agency for dissemination of scientific knowledge in addition to the existing educational and extension agencies might be superfluous and difficult to justify. In view of the criticism that there is a growing tendency to multiply staff in Government departments by the constant addition of new sections for specific jobs falling within the purview of existing agencies, a large portion of our discussions vigorously centred round the basic issue whether Vijnan Mandirs have a distinct role to play in educating rural people on correct scientific methods and making them science-conscious. Although there has been unanimity of opinion on the urgent need to disseminate correct scientific knowledge and develop a rational outlook on life, we encountered strong dissent from several quarters in regard to this plan initiated by the Centre for achieving the objectives. Some of the more important arguments advanced against the continuance of Vijnan Mandirs as a separate scheme are mentioned below:—

- (1) Creation of a separate agency in addition to the whole paraphernalia already established in the shape of educational institutions, Extension Services, Social Education Agencies, Information Centres, etc., cannot be justified.
- (2) A multi-purpose agency like Vijnan Mandirs to handle such diverse activities as dissemination of scientific knowledge, soil analysis, food analysis, water analysis, pathological work, etc., would need really exceptional persons well-versed in different branches of science. Such persons dedicated to the cause of science and imbued with a missionary zeal in rural uplift work is not easy to find.

- (3) A few stray Vijnan Mandirs unconnected with the local agencies can have no effect on the rural population. Nor can their work in a few villages alter the countryside's picture.
- (4) Shortage of qualified teachers and of equipment for teaching of science is proving a serious handicap to educational progress. So long as such shortages continue, available resources of man-power and equipment should be utilised to the satisfaction of more pressing demands.
- (5) To multiply agencies for analytical work, not followed by facilities for correcting the deficiencies, if any, would be of no practical help; on the contrary, it would raise hopes which may not be fulfilled.
- (6) Rural mind is not receptive enough to appreciate and feel enthused over scientific principles and abstract theories. To force the pace and demolish old foundations before receptivity is properly developed would lead to a vacuum.
- (7) Science education cannot be absorbed in "bits and pieces" by methods contemplated by Vijnan Mandirs. The shell of apathy prevalent in rural areas is such that it cannot be penetrated by any amount of "fanfare and trumpets" by a few Vijnan Mandirs.
- (8) Even if the scheme is allowed to develop, as planned, one Vijnan Mandir per district will still be very inadequate to meet the needs of the country.

5.3. We have given anxious consideration to this matter. The utility of the Vijnan Mandir Scheme would have to be judged in the light of facilities available for diffusion of scientific knowledge among the rural people. It is true that as a result of steps taken by different agencies—both official and non-official—certain unwholesome practices like *Sati* and infanticide have very nearly disappeared, but much remains to be done to wean villagers from many superstitions and ill-founded beliefs which still linger. Unless special efforts are made to open their minds, which have been shut for centuries, and to create a healthy curiosity in the physical phenomena around them, they are not likely to make useful citizens of a progressive democracy. The Vijnan Mandir is only an attempt to fill the gap. No systematic efforts have been made to pass on the results of investigations conducted by the existing agencies in an intelligible form either to the students studying in educational institutions or to villagers toiling on the land. Here is a lacuna which has to be remedied and some measures devised to correlate the needs of the country with the researches conducted at different centres. It is also important to build up channels of communication through which can flow to villages results of research conducted at various places, with due regard to the local circumstances.

5.4. Our pointed attention has been drawn to the "proverbial apathy" of the villager and it has also been maintained that no single agency like the Vijnan Mandir can succeed in educating the villagers on correct scientific methods. Merely because rural problems are stupendous, it does not mean that nothing can be done at all. To

take such a view is suicidal. If our under-development presents a formidable problem, it also provides a great challenge. If there is apathy, the fault is as much with the various agencies charged with the task of ameliorating rural conditions as with the peasants themselves. Even elementary and essential services which the peasant sorely needs have been denied to him. The fact that the same problems recur over and over again in the fields of rural health, sanitation, agriculture, etc., shows that adequate work has not been done on a systematic basis to find the proper solutions. Notwithstanding the many facilities provided by the Community Development Programmes and other agencies, the villagers are not yet able to find in their areas persons who can give them guidance and advice in regard to their numerous pressing problems. For example, it cannot be said that a satisfactory solution has been found for the water and drainage problems which are so acute in rural areas. The coverage of a Block is stated to be so large that the doctor-in-charge of Primary Health Centre has no time to attend both to the curative and the preventive aspects. The result is that millions of our people still cling to outmoded practices. Diseases are still looked upon as due to past *Karma*.

5.5. The Block pattern, as at present organised, does not provide for a separate agency for Science Extension work. The motive force behind the work of the Extension Officers and other agencies operating at the Block level is more service and less dissemination of scientific knowledge. During discussions, one Development Commissioner pointed out that neither the Block Development Officers nor the Extension Officers were able to attend to educational work in addition to their normal duties. We were informed that some relief had been provided to Block level specialists by entrusting such duties as agricultural credit, supply of fertilisers, seeds, etc., to Cooperative Societies. In any case, we feel that the role of Extension Officers, especially in the field of science education, has not been defined with clarity. No attempt has also been made to see whether this aspect of work is receiving the emphasis it deserves. The result is that dissemination of scientific knowledge which is taken for granted in other countries as the basic duty of Extension agents has not been adequately catered for in our country.

5.6. This deficiency is sought to be remedied by Vijnan Mandirs whose main role is to give a genuine scientific slant to service programmes conducted in the Blocks and to bring its impact to bear on the minds of the people with a view to changing their outlook. About the competence of Social Education Organisers to handle science education work, even those who questioned the need for Vijnan Mandirs agreed that they could not take up this work. Most of the Social Education Organisers do not generally possess scientific knowledge. The Block Information Assistants lack the necessary scientific background. According to the Annual Report¹ of the Ministry of Community Development for the year 1956-57, the Social Education Organiser "has not been quite able to function effectively in the integrated role of a generalist as well as a specialist in adult education and community organisation". There is, therefore, no point in giving a more comprehensive role to Social Education Organisers by including science education work.

¹Page 11 of the Report (1956-57).

5.7. We agree that a permanent solution to the objective of making people science-conscious would have to be found through the educational system. We have taken note of the measures initiated or contemplated to improve the teaching of science at different levels of education, and of the efforts made to attract more students towards science and correct the present imbalance between science and art courses in our educational institutions. A scheme has also been drawn up to meet the increased demand for trained teachers by increasing the intake capacity in existing institutions and also by arranging short condensed courses for the trainees.

5.8. The progress achieved so far to enrich the teaching of science is, however, not uniformly satisfactory. The recommendation of the Secondary Education Commission that provision for teaching of general science should be made in every high school has not yet been fulfilled. There are also wide disparities from State to State about the place given to science in the Secondary School curricula. While States like Madras, Andhra Pradesh, Mysore, Kerala and Bombay have science compulsorily at the secondary stage, others like Uttar Pradesh, Madhya Pradesh, Punjab and Delhi offer science only as an optional subject. It is, therefore, possible for a student of these States to go through the Secondary school stage without studying science.

5.9. It has been put to us that provision for science teaching in our educational institutions is very inadequate and although science has been included as part of the syllabus, lack of sufficient number of well-trained teachers, suitable text books and equipment is proving a serious handicap. We were surprised to hear that a considerable proportion of Secondary Schools teaching science were still without any laboratories. In the words of Shri K. G. Saiyidain "in higher secondary and multi-purpose schools for which assistance is being given under the plan, provision on a fairly generous scale for improving the teaching of science all along the front was made, but the 'dream' as we planned it has been cut to about one-third and the scheme will have to be soft-pedalled". During discussions, Prof. K. S. Krishnan, Director, National Physical Laboratory, informed us that despite all the measures taken, it was paradoxical that more science was taught in our high schools several years ago than at present. At the higher education stage, however, we were glad to note that science was coming more quickly into its own and that better provision was being made for the purpose in Universities and Colleges. The carry-over of scientific ideas and outlook from the Universities to the people still remains the main problem. The Universities and Colleges are doing a limited amount of extension work but there is urgent need for strengthening this programme. The need to integrate more fully the secondary school syllabus with that at lower levels has also to be examined. We find from press reports that the proposal to appoint a high-powered commission to go into the whole question of science education has been shelved for the present and that instead a small committee of experts is to be set up by the Ministry of Education to report on the teaching of science in schools. We hope that this Committee will go into the question on a comprehensive basis in the light of the principles enunciated in the Scientific Policy Resolution of the Government.

5.10. Several measures have been introduced to speed up the implementation of universal compulsory primary education, but it will be several years before universal education becomes a reality. Till then we are confident that even an adventitious programme like Vijnan Mandirs can do something to help the educational process, if properly located, equipped and staffed. Once children are adequately taken care of in the primary and higher levels of education, there may be no need for Vijnan Mandirs. Meanwhile, Vijnan Mandirs ought to be looked upon as an inescapable interim arrangement to bring some knowledge of scientific principles to those who are not too old to learn. Universities, Research Laboratories and other similar institutions are not organised to give the peasant the guidance he needs on problems of agriculture, manuring, improved varieties of seeds, reduction of plant pests, proper utilisation of water, etc. They have no field officers to reach villagers. Meanwhile, something has to be done to *supplement* the efforts of all such agencies and take correct ideas to the people waiting to be educated. Technical agencies generally deal with people who are intelligent and the group mind has not obviously reached the level at which scientific knowledge can be usefully absorbed. By mixing with the rural population freely, Vijnan Mandir staff can prepare their minds to receive the advantages of the work done by other agencies for their amelioration.

5.11. The multi-purpose approach of Vijnan Mandirs has been criticised. There is nothing wrong in that approach which, on the contrary, is in consonance with the principle that multi-purpose agencies should operate at lower levels and specialists at higher levels. As pointed out by Dr. Stepanek of the Ford Foundation, a distinction has to be drawn between science and technology. While technology would require a team of experts, we were told that general aspects of science could be tackled in a fairly satisfactory manner by the two officers working in Vijnan Mandirs. Moreover, if there is need for specialists, there is also need for the "general purpose" man, to deal with problems of village reconstruction on an integrated basis with emphasis on the development of human personality.

5.12. The importance of an institution like the Vijnan Mandir has to be measured alike by the quality and the quantity of scientific information it is able to supply to the peasant. One Development Commissioner forcefully told us that what is required is not only practical agriculture or preventive medicine, but the filtering of the material received from various agencies in the country and communicating the same to the farmer in such a manner as would enable him to improve his daily life and work. A role of this type can be discharged better by a general purpose scientist than by a specialist.

5.13. We were told again and again that the peasant is not likely to be interested in abstract scientific principles. There is certainly some truth in this. Let us remember, however, that the abstractions contained in our *Puranas*, the *Gita*, etc., have been assimilated by our people, despite their being illiterate. Why should we imagine that our people are incapable of assimilating elementary scientific principles when put to them in the proper way?

5.14. Moreover, Vijnan Mandirs are not commissioned merely to spread theoretical science but even more to stress its application to the daily needs of the people. It is also essential that some beginning

should be made to bridge the hiatus between urban and rural life. We feel that an institution like the Vijnan Mandir close to the village and related to its immediate needs can strike the limited horizon of the villager and improve his mental state.

5.15. The Vijnan Mandir concept appears to be a novel idea in our country. But agencies backed by competent scientific knowledge exist in different countries to advise farmers on their problems. The Technique Popularisation Centres in China, the Public Halls in Japan and the Land-Grant Colleges in the United States of America, are attempts made by various countries to cater to the peasant. The Vijnan Mandir scheme is a similar attempt, although it may not be possible for it to produce very soon results comparable with those obtained in other countries.

5.16. It has to be admitted that most of the Vijnan Mandirs have not yet fully achieved the objectives for which they were meant. This is mainly due to various causes mentioned elsewhere. However, a few Vijnan Mandirs have succeeded in creating a favourable atmosphere (details of work done at Appendix XIV); many are still in the process of being developed. The full effect of the scheme cannot, therefore, be judged yet. It is easy to fall into an attitude of sceptical criticism. The goal of a welfare state has made considerable expansion of the administrative machinery necessary to cater for the social services. Viewed in this context, we are of the opinion that it is not difficult to justify an agency or a wing to spread scientific knowledge. Our rural problems are so vast that they have to be tackled from many angles. Duplication will not be a problem so long as Vijnan Mandirs work in close cooperation with other agencies to promote the best interests of the country. We consider that a scheme like this which has been developed to a certain stage has to be carried on to obtain results. To reverse the gear at this stage would not be a sound policy. Even those who were highly critical of the scheme, agreed that it should be given a fuller trial before pronouncing any final judgment. It was Prof. K. S. Krishnan who described the Vijnan Mandir Scheme as "a great idea" to interest the local people in the processes of change taking place around them. As Dr. Stepanek of the Ford Foundation put it to us, these "little islands of science" in the vast rural areas, if properly worked, can help in developing a scientific temper among the people. That represents our mind on the matter very accurately.

CHAPTER VI

PROGRAMME OF WORK

General

6.1. The main objective of Vijnan Mandirs is to spread useful elementary scientific knowledge among the rural people in order to enable them to improve their living conditions on the basis of such knowledge. As mere abstract knowledge would have no appeal to people struggling hard for their bare existence, techniques have to be evolved that would meet their real needs. Apart from demonstrations and experiments, Vijnan Mandirs have to bring home to the peasant the value of science in its application to his daily life.

Programme of Work

6.2. The programme of work will have to be framed with reference to the type of people whom Vijnan Mandirs should cater to. While students will be taken care of in regular educational institutions, Vijnan Mandirs may have to concentrate on adults of significant age groups who are not yet too old to learn. They have to be shown the possibilities of science in effecting improvements in their living conditions and particularly in stepping up production in farms and workshops. Apart from guidance in regard to increased production, Vijnan Mandirs can educate villagers on pests and plant diseases, sanitation, health and hygiene, balanced diet, nutrition, etc., taking into account available resources in the rural areas.

6.3. Keeping these considerations in view, the programme of work may be divided broadly into the following categories:—

- (i) Dissemination of scientific knowledge through various activities, such as exhibitions, libraries, demonstrations, etc.;
- (ii) Acting as a Clearing House for general and useful scientific knowledge; and
- (iii) Advising on the application of science to the practical problems of villagers.

Dissemination of Scientific Knowledge

(i) Science Clubs

6.4. Vijnan Mandirs are organising Science Clubs for teachers, students and farmers with a view to harnessing their energy and enthusiasm for diffusion of knowledge. We understand that the All-India Council of Secondary Education has organised separately about 340 Science Clubs, 20 per cent of which are in rural areas. It is stated that the main objective of these Science Clubs is to encourage scientific talent and to afford an opportunity to the students to handle equipment and arouse their curiosity in scientific processes. At present there seems to be no contact between the Science Clubs started by Vijnan Mandirs and those started by the All-India Council of Secondary Education. There is need for close collaboration between these Clubs for their efficient functioning.

6.5. In places where no Science Club has been set up, the Vijnan Mandir Officers may persuade teachers to organise them. They should also assist in starting such clubs for interested groups. It may not obviously be possible for the Vijnan Mandir Officers to attend all

the meetings of the various Clubs started by them. After the Clubs have been properly organised, it will be open to the office-bearers of the Clubs to arrange their own programmes and the Vijnan Mandirs could assist them whenever necessary to ensure that discussions and studies on various scientific topics of interest are kept at a proper level. With the help of a mobile van, which we are recommending, Vijnan Mandirs could arrange experiments and demonstrations at selected meetings of the Science Clubs.

(ii) Subsidiary Agencies

6.6. In an earlier chapter we have referred to the attempts being made by a Vijnan Mandir to associate local people in its work and disseminate knowledge through the agency of progressive farmers. We suggest that other Vijnan Mandirs should also mobilise the agency of progressive farmers to reach the people. There are also other agencies like Youth Clubs, Community Centres, and Mahila Samaj and the Vijnan Mandir staff should participate in their meetings and give talks and lectures on popular scientific subjects. It should be possible for Vijnan Mandirs to locate talented persons in various interest groups and provide some training to them and utilise them as auxiliary agencies to reach ever widening circles. The persons should be such as will be able to carry on the mission of the Vijnan Mandir even if it should disappear from the field. Selected teachers and students may well come into this category.

(iii) Training of Teachers

6.7. The village teacher has a great role to play in rural development. He is traditionally one of the leaders of the village and any idea from him is apt to command more respect than from most other sources. It is good, therefore, that school teachers are already being put through an orientation course in various aspects of rural development and Vijnan Mandirs could give a scientific slant to their training programme by adding a short course in elementary science extension work. The agency of such trained teachers should be mobilised by Vijnan Mandirs and utilised as "intermediaries" to create science-consciousness among rural people.

(iv) Science Museums

6.8. There is need to provide a museum which will be realistic and functional to enhance the utility of Vijnan Mandirs and make them real centres of attraction in rural areas. Vijnan Mandirs should exhibit specimens of a varied nature in a lively manner for the benefit of the rural population. Specimens of local plants, insects, pests and other animal life and samples of rocks, minerals, soils, etc., available in the locality should be displayed in such a manner as to rouse in the villagers a genuine curiosity to understand the common physical and natural phenomena and the broad scientific principles governing the life and characteristics of the flora and fauna as also the bird life of the locality. The exhibits should carry suitable explanatory notes in regional languages.

6.9. There are innumerable modern machines and articles which have already entered the rural areas, e.g., telephone, telegraph, microphone, radio, electric fan, gramophone, etc. It is necessary that villagers should have an elementary knowledge about these machines.

The Vijnan Mandir museums should have ample provision to include working models of such machines, including steam engines, automobiles, generators, motors, etc. The addition of a planetarium, telescope and star charts will enable many people to learn something about the wonders of space. This will have a very stimulating effect on their minds.

6.10. Owing to paucity of funds it may not be possible for all Vijnan Mandirs to be equipped on a comprehensive basis with rare exhibits of scientific and educative value. To get over this difficulty we suggest that exhibits might be stocked at convenient centres in the States and sent to the various Vijnan Mandirs according to a pre-arranged programme. Apart from such an arrangement, it is necessary to lay down a pattern for equipping the museums for the guidance of State Governments, Vijnan Mandirs and other agencies who may work the scheme.

6.11. Elsewhere we have recommended the appointment of a small committee of experts in the Planning Commission to go into the entire question of equipment and training concerning Vijnan Mandirs. That committee could also consider the manner in which the Vijnan Mandir museum could be equipped and organised.

(v) *Audio-Visual Aids*

6.12. For dissemination of scientific knowledge and creating an "awareness" of scientific ideas and practices, various mass communication devices, including audio-visual aids will have to be pressed into service. The percentage of literacy being very low, the influence of books, pamphlets, and in fact of any written material will not be adequate. The Vijnan Mandirs should be equipped with audio-visual aids like projectors, films, film-strips and slides to enable them to arrange educational shows. The mobile van which we are recommending for Vijnan Mandirs will help in carrying such aids to different places. Film and film-strips on topics centering round the life of the community, explaining the application of science to the practical needs of rural life and the working of various scientific devices may be prepared and made available to Vijnan Mandirs.

(vi) *Talks and Lectures*

6.13. Every Vijnan Mandir should draw up a programme of talks, lectures, demonstrations, etc., sufficiently in advance and this programme has to be implemented systematically and continuously, if enthusiasm is to be created in the minds of the villagers. We find that talks are delivered by some Vijnan Mandir Officers without proper planning and adequate preparation. In many cases the texts of talks, etc., were not forthcoming. We are, therefore, unable to judge the utility of these talks and lectures in fostering right scientific attitudes in the minds of villagers.

6.14. Lectures and talks will have to be prepared with due regard to the psychology of the village adult and this aspect should be taken care of by the training programme of the Vijnan Mandir Officers. We would, therefore, suggest that Vijnan Mandir Officers should plan their lectures in the above manner and keep records of their talks.

6.15. The importance of utilising the services of specialists and other experts to give talks at Vijnan Mandirs should not be minimised and Vijnan Mandir Officers should have the freedom to secure their assistance and arrange for special talks and demonstrations on suitable occasions. This, of course, needs forethought and planning. Lectures by outside authorities and leaders of public opinion may often have a better appeal to the local people.

(vii) Participation in Fairs and Festivals

6.16. Fairs and festivals inject some gaiety in the otherwise drab and monotonous life of the community. We feel that the favourable atmosphere provided by these and other important occasions can be exploited to the best advantage by Vijnan Mandirs for dissemination of scientific knowledge. We understand that Vijnan Mandirs are already participating in such occasions by putting up exhibitions and stalls and arranging demonstrations, etc. This is a step in the right direction and we suggest that better facilities may be afforded to Vijnan Mandirs to enable them to arrange such exhibitions, etc., on a wider and more efficient basis.

(viii) Women's Programmes

6.17. Women are an important clientele to be reached. The low standard of literacy among women makes the problem of penetrating the heavy mist of prejudice, inhibition and ignorance more difficult. It requires considerable tact, patience and perseverance to wean womenfolk from their age-old prejudices and established habits.

6.18. We have recommended separately that one of the Officers in a Vijnan Mandir might be a woman to facilitate contacts with women. With the assistance of Social Education Organisers and Gram Sevikas and voluntary agencies working in the area, it should be possible for the Vijnan Mandir Officer to reach the womenfolk and educate them on subjects like environmental hygiene, nutrition, child-care, house-keeping and family planning.

(ix) Library

6.19. For the proper discharge of their role, Vijnan Mandir Officers should be provided with books, journals, etc., of scientific value. The Vijnan Mandir library should make available scientific and technical knowledge of a higher type for those who stand in need of it, especially the Vijnan Mandir Officers themselves. This would be in the nature of "source material" to enable the Officers to "recharge" themselves and keep their own knowledge up to date. Apart from this, the library should also be equipped with popular scientific literature in regional languages.

6.20. There is a great dearth of suitable reading material in the local languages and positive measures have to be taken to equip not only Vijnan Mandirs but also other agencies engaged in development work with popular scientific literature. We understand that Extension Wings have been set up in certain National laboratories and the question of establishing similar wings in other laboratories is under consideration. We feel that the extension wings of the laboratories and research centres should prepare popular scientific literature on researches conducted by them in English and Hindi. The work of

translating them in the various regional languages might be undertaken by the Ministry of Scientific Research and Cultural Affairs or other competent agencies. The Ministry should draw up a scheme to encourage production of popular scientific literature by scholars and other experts in different branches of science by giving them necessary financial and other assistance. The Vijnan Mandirs should be supplied with such literature.

6.21. Easy literature dealing with rural problems such as rural housing, road-making, minor irrigation, utilisation of waste products, etc., should be made available to Vijnan Mandirs by specialised institutions like the Central Building Research Institute, the Central Road Research Institute and the Central Water and Power Commission which are tackling these problems. Brochures and other literature, as also leaflets produced by State agencies, together with information on the results of investigations or field trials conducted by them on various rural problems should also be supplied to Vijnan Mandirs.

(x) *Bibliography*

6.22. No bibliography of books which should be stocked in Vijnan Mandir libraries has so far been prepared. The Committee has been informed that many popular science books are available in Bengali; by and large, the same may be true of other regional languages. We suggest that with the assistance of the National Library, Sahitya Parishads and other competent agencies, a suitable bibliography of scientific books may be prepared. The bibliography might be in two parts; the first might pertain to technical and advanced knowledge and the second to popular needs.

(xi) *Clearing House*

6.23. It is well-known that the results of research conducted at various centres in the country do not reach the villager. Research workers have very few chances of projecting results of investigation or their knowledge into rural areas and as far as we are aware, no systematic arrangements have been made to supply first hand information on field problems to research staff. The research workers do not also get adequate opportunities to know how their findings stand the test of field trials in different parts of the country and whether they need any reorientation or further investigation. Close liaison will have to be established between research institutions on the one hand and peasants on the other to enable field problems being appreciated and tackled in their proper perspective.

6.24. We feel that in Vijnan Mandirs we have an appropriate agency which can provide the nucleus for developing this liaison on a proper basis. With their limited resources in man-power and equipment, Vijnan Mandirs may not be able to advise on all rural problems but they can serve as a liaison with National, Regional and State laboratories and other research institutes, and refer back to them for investigation and advice such problems as cannot be solved at their level. Vijnan Mandirs can also serve as field extension agencies of National and Regional laboratories. Vijnan Mandirs will have to collect useful information from different sources, process it and make it intelligible to the common man. In other words, the Vijnan Mandir has to become a "Clearing House" for local scientific knowledge.

Advice on Rural Problems

6.25. It is not possible to dissociate scientific principles from their application to practical problems at the field level. Mere laboratory demonstrations and experiments may not enthuse the peasant who needs practical help to improve his economic condition. If Vijnan Mandirs are to be effective, they have to inject scientific knowledge at the points where they would catch the imagination of the villager as he struggles with his problems. It is, therefore, necessary that educational programmes launched by Vijnan Mandirs should have a practical bias and be closely related to the daily problems of the villager like those of health, sanitation, nutrition, agriculture and village industries. The types of problems that may lend themselves easily for inclusion in the charter of duties of Vijnan Mandirs are as under:

(i) Health Education

6.26. The Estimates Committee in their 42nd Report on the Ministry of Community Development, observed: "The simplest laws of health, hygiene and sanitation are unknown to the people".¹ The role of Vijnan Mandir in the field of Health Education is defined in the scheme as follows:—

"Experience in the working of the Community Projects and N.E.S. has so far revealed that although steps have been taken to eradicate specific diseases and there are schemes for specific items of work, e.g., cholera, malaria, etc., very little has been done from the point of view of health education and sanitary habits".

This criticism is striking, especially in view of the fact that the scheme is understood to have been drawn up after consultation with the Ministry of Community Development and other concerned Ministries of Central Government.

6.27. The germ theory of disease, for instance, does not exist in the minds of the people. Vijnan Mandirs have a vital part to play in adding to the activities of other existing agencies for the purpose of enlightening the villager on such matters of primary importance as public health. Notwithstanding the efforts made so far by different agencies, it has to be admitted that health education has made no headway and even in primary health centres set up in development Blocks, enough work is not being done on the preventive and the educational sides. The Vijnan Mandirs can educate villagers about the cause of common diseases and how they could be prevented by adopting some simple and prompt measures.

6.28. Vijnan Mandirs can do useful work in educating people on environmental hygiene and sanitation which are so very important in the maintenance of rural health. It is said that an average Indian is proud of his daily bath, but our ideas of social cleanliness leave much to be desired. With the help of simple experiments and demonstrations on items like putrefaction of food and pollution of drinking water. Vijnan Mandirs can convince the villager that the "misery-go-round of poverty, disease, under-production, squalor, ignorance,

¹Pages 47-48 of the 42nd Report (Part III), December 1956.

malnutrition and more disease"¹ is due not to supernatural causes but to his own masterly inactivity which suffers filth and garbage, as if they are of no consequence.

6.29. Vijnan Mandirs have also an important role to perform in educating villagers on "First Aid" measures to be adopted in emergencies like drowning, snake-bites, suffocation, burns and fractures. If we may say so, by a series of 'cautious encroachments', Vijnan Mandirs can enlighten the villagers on the importance of obtaining medical treatment at qualified hands instead of resorting to quack practices, amulets, charms and witchcraft to get rid of human and cattle ailments.

(ii) *Balanced Diet and Nutrition*

6.30. It has been put to us that the general understanding of Public Health does not include nutrition, but we have been informed that nutrition surveys are being conducted from time to time and that a committee has also been set up in the Central Ministry of Health to draw up a syllabus on Nutrition in schools at different levels. Notwithstanding the efforts made to make people nutrition-minded, we feel that this item has not been adequately taken care of, if not neglected. The charts and posters on nutrition showing different items necessary for a balanced diet are often impracticable in that they do not really take into account the poverty of the people and the lack of necessary ingredients in rural areas.

6.31. Vijnan Mandirs can take note of the work done in the field of domestic science by different agencies and pass it on through all available media of communication to the villager. They can also educate villagers on nutrition and balanced diet. Foodgrains like jowar, bajari and other inferior millets which form the staple food of a vast majority of the people, while rich in some respects are deficient in certain others necessary for balanced growth. Food habits of the people would have to be studied and action taken to suggest suitable and inexpensive combinations as well as proper methods of cooking to get over any deficiencies, keeping in view the resources of the people and available foodstuffs in the rural areas.

6.32. Vijnan Mandirs can also supplement the work of Health Departments of various States, investigate the diet habits of the people and suggest suitable remedies to correct imbalances in consultation, if necessary, with expert agencies like the Central Food Technological Research Institute and the Public Health Departments in the States.

(iii) *Wise Parenthood*

6.33. The making of a home and the proper rearing of children are among the major functions of human beings and many of the maladjustments in body and mind of people result from faulty upbringing of boys and girls. The adult man or woman gets no kind of education or guidance in this vital matter of parenthood. Although it may not be possible for Vijnan Mandirs to shoulder responsibility for the complete education of village folk in wise parenthood and home science, yet elementary ideas of genetics, moral and sex hygiene and child care may be spread by them through lectures, charts and filmshows.

¹"Science Makes Sense' by Ritchie Calder (1955), page 180.

(iv) Family Planning

6.34. Family Planning has been accepted as a national policy and work connected with regulated parenthood is gaining momentum. Whatever agency is available should be mobilised for this work. Vijnan Mandirs may not be able to do specialised work in this regard in the absence of the required training and facilities needed for the same. Nevertheless, we feel that Vijnan Mandirs can do useful work in educating villagers on the need for family planning.

(v) Agriculture

6.35. As agriculture is the mainstay of the people, the value of science will be appreciated only when the application of science to the practical situations that confront the farmer in agricultural operations is demonstrated to his satisfaction. Scientific information with regard to soil improvement, conservation of soil and moisture, water application methods, improved agricultural practices, plant protection, food preservation, etc., will have to be spread by Vijnan Mandirs. Information regarding better implements of agriculture and other production and their sources of availability may also be furnished by the Vijnan Mandirs.

(vi) Animal Husbandry

6.36. The Programme Evaluation Organisation in their Third Evaluation Report remarked as follows:—

“Most of the work done so far had been on the veterinary aspect distinct from the animal husbandry side”.¹

Concentrated efforts have to be made to educate the people that proper upkeep of live-stock is an important occupation subsidiary to agriculture. Vijnan Mandirs can enlighten the farmers on methods of raising high-yielding and nutritious grasses like guinea grass, lucerne, etc., and other fodder crops. Vijnan Mandirs can educate villagers on methods of preservation of the nutritional value of available fodder by methods like silage and to avoid wastage by the use of devices like chaff cutters. They can also disseminate knowledge on the need for castration of over-aged and other scrub bulls and for prophylactic treatment like inoculation and other precautionary measures against diseases like rinder pest, and advice on care and sanitary upkeep of livestock. Vijnan Mandirs can also do useful propaganda to wean people from certain unscientific practices like branding of animals to cure them from certain diseases.

(vii) Village and Cottage Industry

6.37. Adequate efforts have not been made to educate villagers about the utilisation of available local resources to increase production at the village level and consequently to raise the standard of living of the rural community. For instance, the soap habit has entered rural life, but neem seeds which form an important raw material in the production of soap are not yet fully utilised for the purpose. There are several other local raw materials likewise which could be economically exploited. We suggest that Vijnan Mandirs

¹Vide page 23 of the 42nd Report of the Estimates Committee on the Ministry of Community Development (Part III).

should make a study of existing resources and their exploitation to the best advantage. In this work they could take the help and guidance of the various agencies which are working on this programme in the country. If solutions are found to even a few such problems, Vijnan Mandirs are bound to make a considerable impression on the minds of the people. Benefits, in that case, will far out-weigh the cost of Vijnan Mandirs.

6.38. There are a number of cottage industries like hand-pound-ing of rice, soap-making, oil-pressing, paper-making, bee-keeping, leather work, pottery, smithy, etc., which still sustain the life of large numbers of artisans. Here is a first rate opportunity for Vijnan Mandirs to apply their minds and to suggest ways and means for better production through the introduction of improved tools and methods.

(viii) Village Wisdom

6.39. During our discussions with the representatives of the Planning Commission, we were happy to know that some steps were being taken to investigate and study what may be called 'ancient wisdom' which has come down to us through many practices and habits of the village people. It would be irrational to brush them away as worthless simply because they are old. In matters of personal sanitation, daily health practices, local and cheap remedies for common ailments, etc., there is something that has come down from the past as a body of empirical knowledge which ought to be studied with care. Vijnan Mandirs might well collect such items of wisdom and practices and habits before they are irrevocably lost and, where necessary, refer them to higher research institutions for a proper appraisal of their value.

(ix) Flexibility in Programme

6.40. The success of Vijnan Mandirs will depend on how they come to grip with local problems which are of vital interest to the villagers. The programme should be sufficiently elastic to accommodate local needs and variations. Each Vijnan Mandir may have its own special problems peculiar to the area in which it is located and we may not stress the importance of all the items suggested by us above for rigid acceptance in a uniform manner. It is, therefore, necessary that within the general pattern of work recommended by us, Vijnan Mandirs should have the freedom to explore and investigate their own situations. Modifications, if any, in the programme could also be considered by local committees.

Priority in Programme

6.41. The programme of work for Vijnan Mandirs, as outlined above, may appear formidable, but let us remember that they have to help only at special points and always in collaboration with other institutions and agencies. Vijnan Mandirs will have to act more as catalytic agents to *supplement* and *not to supplant* the work of other agencies. Apart from flexibility, some order of priority has to be observed in the execution of the programme. We consider that the different items may be taken up generally in the order in which we have dealt with them.

Records

6.42. If Vijnan Mandirs are to function efficiently, proper records have to be maintained. Apart from various registers required for maintenance of stores, library, contingent expenses, etc., each Vijnan Mandir should have a record in respect of every village showing the population, occupations, pattern of income, cultivated area, the types of soil, the crops grown, sources of water supply, common diseases prevalent in the area and any aspect peculiar to the area like available natural resources. This should not involve any additional strain on Vijnan Mandirs since most of this information could be collected from other sources. An illustrative *pro forma* may, however, be prescribed for this purpose. All observations made and advice given should be entered carefully in the register maintained for the purpose. This will be more or less a growing diary or a log book of the centre and serve as a source of information and guidance to all concerned.

Targets

6.43. We were told at several places that when targets for achievements are fixed, the main purpose and the spirit of the scheme are apt to be lost sight of. Even so, we feel that targets do offer incentives and purpose to systematic work. No programme can be considered complete without evaluation and assessment which are needed for taking stock of the situation, making necessary alteration of procedure and methods and for further planning. It should, therefore, be possible to prescribe definite programme for Vijnan Mandirs and for evaluation of their achievements without introducing rigidity into the process.

6.44. So far as diffusion of elementary scientific knowledge is concerned, certain clear common programmes can be laid down for all Vijnan Mandirs. The programmes relating to other matters may vary from place to place, depending on local problems, available facilities, etc. To enable the programmes being drawn up on a realistic basis, Vijnan Mandirs should be asked at the beginning of each year to send up a plan for the year in consultation with local committees for the approval of competent authorities. The plan, as finally accepted, may be the basis for evaluating the work done by Vijnan Mandirs.

6.45. Though statistics may not be an adequate guide to the progress made, especially in a broad educational programme like that of Vijnan Mandirs, we feel that some effort could be made to assess the results from time to time on a reliable basis. Not all the benefits which are expected to accrue from the working of the Vijnan Mandirs are intangible; the work in regard to Science Clubs, demonstrations, lectures and talks delivered, villages visited and advice sought for and given, is of a measurable type. An elastic job chart can also be prescribed in regard to different items. These could be supported by quarterly reports from Vijnan Mandirs. Even in regard to intangible benefits; we would suggest that action might be taken to evaluate the work on the lines recommended by the Estimates Committee¹. There could be an initial survey at the time a pro-

¹Thirtyeighth Report of Estimates Committee (1956-57) on the Ministry of Community Development (Part I), para. 123, page 44.

ject is launched, showing, among other things, the social and economic habits of the people, level of literacy, indebtedness, etc., followed by a second survey after a period of time. The changes effected in the intervening period may be the cumulative effect of various social forces at work like spread of education, internal developments, activities of voluntary organisations and international events, but the change in the picture, as disclosed by two survey reports, would give some indication of the impact made by the project in question.



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CHAPTER VII

EXTENSION THROUGH SERVICE**General**

7.1. The main role of Vijnan Mandirs is dissemination of scientific knowledge, but the idea of service has been added to make knowledge acceptable to the people and keep them interested in their work. Since service has to be of secondary importance in the Vijnan Mandir programme, there is need to exercise care in developing facilities for service in order that the work relating to dissemination of knowledge is not thereby overshadowed.

7.2. In assessing the working of Vijnan Mandirs, we have been asked to consider whether the service aspect as it is now developing in them is really effective. As already stated, some facilities for analysis of soil, water and food have been provided in 23 Vijnan Mandirs. Some facilities for pathological examination are also available at seven Vijnan Mandirs. Whether facilities for such analytical work should be continued or not will have to be considered in the wider context of facilities available to the rural population and as necessary adjuncts to the educational programme of Vijnan Mandirs. We have, therefore, made detailed enquiries about the measures taken by the States to expand the facilities for soil analysis, water analysis, pathological work, etc. As doubts have been expressed about the utility of the present work done in Vijnan Mandirs, we have tried to elicit the opinion of experts in different fields on whether the service aspect can be omitted altogether or whether it should be continued, and if so, in what form and to what extent.

7.3. Views have been expressed both for and against the addition of facilities for analysis work in Vijnan Mandirs. One school of thought favours the provision of such facilities on the ground that no laboratory work is available at ground level, and that through some service programmes, it is easier to secure the response of the people in understanding scientific approaches to problems. It has been pointed out that without an element of service, it is difficult to establish a bond between the people and Vijnan Mandirs. Persons who have derived some benefit would be indebted to Vijnan Mandirs and the favourable impression created thereby would help diffusion of knowledge. Instead of being a hindrance, we have been assured that the service aspect within limits can add purpose and realism to the programme of Vijnan Mandirs.

7.4. According to the other school of thought, Vijnan Mandirs would do well to restrict their activities to imparting scientific knowledge and not get entangled in service programmes. It is argued that it is illogical than an essentially educational institution like the Vijnan Mandir should serve as an ancillary to a service agency like the agricultural extension service. The procedure for the analysis of soil, water, etc., is so different that a combined laboratory for handling this work is considered impracticable. It has also been pointed out that analytical work being a very specialised subject, a well-equipped laboratory and a *team of experts* are essential. With their limited re-

sources, Vijnan Mandirs cannot take up so onerous a responsibility as analytical work and even if they do so, cannot interpret the results and give correct advice to the farmer.

7.5. We have carefully examined both these points of view. Notwithstanding the present expanding facilities in rural areas, items like soil analysis, balanced diet, detection of food adulteration and some clinical work which are of elementary importance in the development of agrarian economy have not reached even a fringe of the total population. There is as yet no adequate agency close to the villager to advise him on soil structure and on the suitability of water for irrigation and consumption. A truly comprehensive survey has not yet been made on a systematic basis to educate farmers about the crops to be raised and the remedial measures to be adopted to correct soil deficiencies. Nor are many people aware of the agency they should approach for advice and guidance. The impression made on us during our visits to the various States was that this aspect of the work has not received the importance it deserves except, perhaps, in a few States like Uttar Pradesh, Himachal Pradesh, Andhra Pradesh and Madras.

7.6. The point for consideration is whether Vijnan Mandirs cannot do something to provide the rural population with certain facilities which, for one reason or the other, have so far been denied to them. Even though Vijnan Mandirs are not meant to function as service centres, we are clear in our minds that they cannot avoid providing certain minimum services of an elementary nature to the people in their areas. On the value of extension service in education centres, the Ford Foundation Team has observed as follows:—

“Moreover, performance of services may prepare the way for educational contacts. Often the services are of such a crucial character, that withdrawal may cause a failure of the programmes”.¹

So far as the need for service is concerned, though expert opinion was divided, there was strong support for it in the public mind, wherever we went. People of every locality have shown a keen interest and a strong desire to retain it. Even if only a limited area is covered, it would be useful to that extent. Service is, therefore, essential to give a richer content to education. We are, therefore, emphatically of the opinion that the service aspect kept within reasonable practical limits will not only detract from the importance or utility of Vijnan Mandirs but will positively help in the educational process.

Soil Analysis

7.7. We have taken note of the criticism that soil analysis is a job for specialists and that a well-equipped laboratory with a team of experts will be necessary. It has also been pointed out that without adequate training and experience of the crop history of the area, it will not be possible for Vijnan Mandir Officers to interpret the results correctly. In considering this question of soil analysis, two distinct types of work will have to be kept in view. The first type would be confined to advice by Vijnan Mandirs in simple cases like soil deficiencies, manurial recommendations and suitability of water for irrigation. The second type will relate to more advanced and complicated

¹Page 116 of the Report on India's Food Crisis and Steps to Meet It. (April, 1959).

problems which Vijnan Mandirs can refer to the National, the Regional, the State or other research institutions for expert advice and guidance. We would like to emphasise that there is no question of Vijnan Mandirs doing specialised work in a matter of this kind and service available in Vijnan Mandirs will be of an elementary type in regard to these problems. To ensure that whatever advice is given is useful, we have recommended separately that Vijnan Mandir Officers should be given a special programme of training, including soil analysis. Such training should also fit them for taking more complicated problems to higher technical authorities for getting competent advice for the people.

Pathological Work

7.8. Since Primary Health Centres have been established with the object of catering to curative and preventive needs, pathological work is necessary for both. But we were surprised to hear that there is nothing on record to show whether these centres are required to attend to pathological work, in addition to their other duties. Statistics of work done in Primary Health Centres are reported to be not readily available. During discussions we were informed that even microscopes have not been supplied to about 30 per cent of Primary Health Centres though they are on the authorised list of equipment. The Health Secretary of a State Government informed us that according to the All-India pattern, no pathological work was feasible at the Primary Health Centres, as there was only one medical officer at the centre for a population of about 66,000. The sub-centres have no medical officers. Accurate data is also not available to show whether pathological work is being done at the Primary Health Centres even in cases where such work is necessary and where facilities have been provided.

7.9. In the context of this situation, we have elicited the opinion of experts whether the agency of Vijnan Mandirs can be utilised, at least to a limited extent, to handle pathological work. It was put to us that pathological work has to be done under the supervision of a Doctor and that it has no value except as an aid to diagnosis and as a measure to indicate response to treatment. We were also told that analytical work should be followed by prompt medical treatment; otherwise villagers will not have any confidence in the tests and this might lead to frustration and defeat the very purpose for which the facilities have been provided.

7.10. We have carefully considered the arguments advanced against the provision of facilities for pathological work in Vijnan Mandirs. As this work is generally done by trained technicians under the supervision of Doctors, we have recommended elsewhere the appointment of a laboratory assistant who has studied up to Intermediate in Science and has been trained in pathological work. He should be able to conduct simple pathological tests, such as urine analysis, blood count, estimation of haemoglobin, blood sedimentation rate, examination of stools, etc. So far as supervision is concerned, provision can be made for necessary visits by the Doctor from the nearest Hospital or Primary Health Centre to ensure that proper standards are maintained. This should not be difficult in view of the reorganised set-up we are suggesting for the future administration of

Vijnan Mandirs. There could be some arrangement with the Primary Health Centres for interpretation of the results of analysis by competent medical authorities.

7.11. While we agree that pathological work should be linked with medical treatment, we feel that some pathological investigations in Vijnan Mandirs will aid diagnosis, and this will be of help to the Doctor in the area. We understand that facilities for pathological examination have not been provided in some of the Vijnan Mandirs with a view to reducing the emphasis on the service aspect. This is unfortunate. Provision of facilities for pathological work at the village level, where they are now so sadly lacking, will go a long way in creating confidence in villagers. Apart from helping diagnostic work, simple pathological examination in the presence of the villager will arouse his curiosity and aid in the dissemination of knowledge. This has, therefore, also a real educational value.

Water Analysis

7.12. About facilities for analysis of water, the impression gained by us is that such arrangements as are available at present are inadequate and that something has to be done to supplement the existing efforts for the supply of wholesome water to the villager both for irrigation and consumption. We have, therefore, given careful thought to the question whether Vijnan Mandirs can do something to meet this vital need and also create the necessary atmosphere for the spread of scientific knowledge. It has been put to us that with the equipment and chemicals available to them, Vijnan Mandirs can undertake chemical examination of water to assess its suitability for drinking and irrigation purposes. As chemical examination alone is unlikely to yield conclusive results for purposes of consumption it has been pointed out that bacteriological examination is necessary. According to the estimate given by the Chief Water Analyst, Guindy (Madras), equipment costing Rs. 60,000 to Rs. 80,000 will be required for complete analysis of water, both chemical and bacteriological. Analysis of water for industrial purposes is stated to be even more complicated, requiring costlier equipment.

7.13. It is obvious, therefore, that Vijnan Mandirs cannot be equipped to carry out such elaborate tests. Nevertheless, we feel that it may not be correct to approach this issue on the basis of "all or nothing". Compromise is essential within the limits set by available resources and knowledge. We are, therefore, of the opinion that facilities for analysis of water should be made available in Vijnan Mandirs. It may be that water analysis for irrigation has a limited scope as analysis of canal water may not prove very useful. Where wells have been sunk, the villager would not like to abandon them even if the water is not ideal for irrigation. However, on the basis of simple tests conducted by Vijnan Mandirs, it should be possible for them to advise villagers on the crop pattern to be adopted with available supplies of water. In fact we were told at some places that crop patterns had in places where available water was not suitable for wheat, crops actually changed as a result of the advice given by Vijnan Mandirs. like barley were raised with advantage. In regard to potability of water, Vijnan Mandirs can conduct routine chemical examination like total soluble salts, suspended matters and hardness and also microscopic examination for detection of pollution by seepage and of

parasites, even though detailed bacteriological examination may not be possible. They can also draw the attention of higher technical authorities and seek their help where necessary.

7.14. We were happy to note that some Vijnan Mandirs have become popular as a result of the service rendered by them even though it might have been of an elementary type and to withdraw the facilities would be a retrograde step. We, therefore, recommend that facilities for analytical work should be continued and apart from the work which they are already doing, facilities for detection of food adulteration may also be provided at Vijnan Mandirs. We were told that with the addition of some equipment and chemicals which might not be expensive, it should be possible for Vijnan Mandirs to conduct simple routine tests like detection of adulteration of milk, atta, ghee, honey and oil. We have recommended elsewhere the establishment of a sub-committee in the Planning Commission to go into the question of the training of Vijnan Mandir Officers, equipment to be supplied and other ancillary matters. That sub-committee might also be requested to consider what additions would be necessary to enable Vijnan Mandirs to conduct routine food analysis.

Conclusion

7.15. We are sure that provision of some facilities at least for service is essential for dissemination of knowledge till other agencies are able to take over this work on a more comprehensive basis. We are aware of the criticism that such an arrangement may not be ideal, but perfection need not be our immediate objective in the context of existing hard conditions where so much has to be done in the field of rural development. To quote the American Friends Service Committee who are conducting projects at Barpali in Orissa and Rasulia in Madhya Pradesh:—

“The emphasis of the Friends Rural Centre has not been upon the expertness or the efficiency by which a programme of work has been carried out, because it has been found that such an emphasis invariably places the work far above the heads of the village people and far from their comprehension”.²

²Social and Technical Assistance in India (1951—56)—American Friends Service Committee—Page 14.

CHAPTER VIII

ADMINISTRATIVE SET-UP**Voluntary Agencies**

8.1. In a vast country like India with a very big population, every programme of national reconstruction will involve a proper balancing of the efforts of State Departments and people's institutions. One without the other will slow down the pace of development and might even create avoidable mis-direction and conflict of interests. The role of people's institutions and voluntary agencies is one which cannot be sufficiently emphasised in our country. Luckily for us, during the last several decades under the inspiration of Gandhiji and other great leaders, we have already built up innumerable voluntary agencies and quite a number of them are on a national scale. Gandhiji had always emphasised that people should be trained to build up their own institutions and organisations of self-help. This is not to under-estimate the place of State agencies in development work. There are matters in which State must take the initiative and organise programmes and take the people forward. Equally there are other matters in which the people's initiative and responsibility should in no way be infringed from above. This is particularly true of Social Welfare, Community Development and Cooperatives. There is already considerable emphasis on decentralisation of power and administration through the Panchayats and Cooperatives, but such a process of decentralisation will remain unreal without the strengthening of people's institutions and voluntary agencies.

Need for Decentralisation

8.2. If Vijnan Mandirs are to be effective, their administration will have to be built up from below and not wholly from above, and the Centre, apart from having sponsored the scheme, might provide the necessary financial assistance and technical guidance. The Vijnan Mandirs are essentially educational institutions, a subject over which State Governments enjoy complete autonomy. The success of the Vijnan Mandir Scheme cannot, therefore, be ensured without the active support and cooperation of State Governments. As Vijnan Mandirs become the responsibility of State Governments, they will have to work in a manner acceptable to States.

8.3. Even though the scheme was initiated in 1953, there were only a few Vijnan Mandirs till recently. During the last 18 months, however, the number of Vijnan Mandirs has increased. As most of the Vijnan Mandirs have not yet struck root, several State Governments informed us that they had no adequate experience to guide them in making a practical assessment of the working of Vijnan Mandirs. Since they are in the process of being built up, all of them have not yet made any real impact on the rural population. We feel that the scheme has not yet passed the experimental stage and that its full potentialities have yet to be discovered. Before a final pattern is evolved, the scheme has to be given a further trial.

Future Administration

8.4. The activities of Vijnan Mandirs will have to be geared to the general educational machinery and also made part and parcel of an integrated programme of rural development. The following alternatives may be considered for the future development of Vijnan Mandirs:—

- (i) Transfer of some to Rural Institutes and Voluntary Agencies;
- (ii) Integration of some with Rural Extension Training Centres;
- (iii) Integration of some with Social Education Organisers Training Centres;
- (iv) Transfer of some to educational institutions like Teachers' Training Colleges, where Extension Wings have been attached and
- (v) Integration of some others with selected Blocks.

8.5. The Vijnan Mandir Scheme is one in which the State and the people will have to function together if it is to succeed. After all, the Vijnan Mandir is only a small unit with the minimum staff and equipment and unless people open their hearts and receive willingly what is offered, the Scheme will never grow or expand. It is in this connection that we find it essential to look out for already existing institutions and agencies *of the people and by the people* which have established places of their own in the life of the rural community. We must get close to them and take full advantage of their work to bring the Vijnan Mandirs closer to the life of the people. This will not be a concession or favour shown to voluntary agencies but the recognition of their vital role in the whole programme.

Rural Institutes

8.6. We have, for instance, 11 Rural Institutes of Higher Education which provide the appropriate atmosphere and facilities for the efficient functioning of Vijnan Mandirs. These Rural Institutes combine theoretical and practical education and have already begun to play their part in the reconstruction of village life. Integration with such Institutes will enable Vijnan Mandirs to function as part of an integrated scheme of rural education and development. The facilities which the Rural Institutes command may also be mobilised to the best advantage. Vijnan Mandirs may well form part of the extension wings of Rural Institutes. There are also proposals for attaching Blocks to Rural Institutes. This will thus ensure proper co-ordination of Vijnan Mandirs with the development activities of the Blocks.

8.7. It appears that a proposal was mooted some time back for transferring funds by the Centre to the States for the setting up of Vijnan Mandirs in Rural Institutes. A decision is understood to have been taken that while Vijnan Mandirs could be set up in close proximity to Rural Institutes, no funds could be transferred to them for the purpose. Proposals are reported to have been received for the establishment of Vijnan Mandirs close to some Rural Institutes and

that following the general practice, they were referred to the concerned State Governments for consideration. Close association of Vijnan Mandirs with Rural Institutes which have already inspired confidence in the minds of the people has everything to commend it and we suggest that the Institutes may be invited to work Vijnan Mandirs according to the general pattern laid down by the Government.

8.8. Eleven Rural Institutes have already been recognised by the Centre and a good many State Governments. There may also be other institutions engaged in educational activities closely linked up with rural reconstruction work which have been recognised by the State Governments. Besides the institutes recognised by the Centre and the States, there are a number of voluntary agencies which by dint of devoted service have created the necessary atmosphere for development work. These agencies are doing good work and may not have sought recognition in order to retain their freedom from the fixed pattern laid down by the Centre or the States. It is also possible that some of these agencies may not have desired recognition with a view to enabling themselves to carry on their own experiments in rural education unfettered by official rules and regulations. We recommend that a survey may be made of these agencies and institutions and those which are willing to implement the Vijnan Mandirs Scheme according to the broad objectives laid down by the Centre may be given necessary facilities. These agencies should have the freedom to develop the scheme along their own lines consistent with the objectives laid down for it by the Government. They will also have to accept inspection and audit by the States in which they are located, while responsibility for higher training and technical guidance of the personnel and over-all evaluation will remain with the Centre.

Financial Assistance

8.9. In the initial stages, the entire expenditure, both recurring and non-recurring, may be met by the Centre. After a period of time, say three years, the Rural Institutes and other voluntary agencies administering the scheme may be asked to bear a portion of the expenditure. The balance may be shared between the Centre and the States in the same ratio as may be decided upon in respect of Vijnan Mandirs which will be integrated with selected Blocks.

Rural Extension Training Centres

8.10. There are several advantages in integrating Vijnan Mandirs with selected Rural Extension Training Centres. In many States the Heads of these centres are generally drawn from the State Agricultural Departments who in a few States are also in over-all charge of Blocks attached to the centres and function as Block Development Officers. Integration with these centres will help the smooth functioning of Vijnan Mandirs in collaboration with the Block personnel. It would also enable a scientific slant to be given to the work of the Village Level Workers of the Blocks, as also to those under training at the centre. The facilities at the Training Centres like audio-visual aids, museums and exhibits could be fully utilised by Vijnan Mandirs and the equipment provided to the Vijnan Mandirs can add to the laboratories and museums of the centres.

Social Education Organisers Training Centres

8.11. The programme of Social Education in Community Development is almost wholly an integrated adult education programme. This programme, therefore, comes nearest to the objectives of Vijnan Mandirs. We also find that in the revised syllabus for the training of Social Education Organisers, more emphasis is being laid on the promotion of community organisations such as those of farmers and women. Emphasis is also given to the training of village leaders and organising social education activities through them. If Vijnan Mandirs are integrated with Social Education Organisers Training Centres, the trainees could be very well utilised for promoting contacts with village leaders and other community groups. Apart from utilisation of the available facilities both of the training centres and Vijnan Mandirs to the best advantage, the arrangements recommended by us should help in giving a scientific bias to the training now being imparted to the Social Education Organisers. This should facilitate science extension work to some extent when they go back to the field after training.

Teachers' Training Colleges

8.12. We understand that Extension Wings are being started in Teachers' Training Colleges. Integration of Vijnan Mandirs with such institutions as are functioning in rural areas should facilitate proper utilisation of the machinery and staff available in those institutions. Apart from making the training in these institutions more effective, it will help the products of these institutions to become more efficient agents for taking science and technology to rural areas. For similar reasons we would also recommend integration of Vijnan Mandirs with the Extension Departments of such Post-Graduate Basic Training Colleges as are located in rural areas.

Universities

8.13. About association with Universities, Science Colleges, etc., doubts had been expressed whether it would be possible for them to take up this work and that if they were to do so, whether their other legitimate work might not suffer. There is force in this line of reasoning as the institutions do not generally have field officers to reach villages. However, we have been informed that funds have been earmarked for extension work in Universities even though all Universities have not shown the same alacrity in extension work. Science and agricultural colleges are being persuaded to establish extension wings with a view to building up the much-needed liaison between education and the community. We recommend that Vijnan Mandirs may form part of the extension wings of such colleges in rural areas.

Integration with Blocks

8.14. It has been put to us at several places, and we agree that Vijnan Mandirs working in close collaboration with Blocks would be an ideal arrangement and also fill the lacuna in the field of science extension. Some Blocks have succeeded more than others in creating the right atmosphere for rural development work and have made an impact on the rural population. Vijnan Mandirs could be attached to selected Blocks which satisfy the following criteria:—

- (i) they should have made an impact on the people,
- (ii) they should have attracted willing and spontaneous co-operation from the people of the area and
- (iii) where the local people are prepared to bear additional responsibility arising from this integration with the Block.

8.15. If Vijnan Mandirs are made part and parcel of selected Blocks, the Vijnan Mandir Officers may be viewed as extension specialists for dissemination of scientific knowledge. The Block level specialists including the Vijnan Mandir Officers could then work as one team. After integration the whole Block machinery would be available to the Vijnan Mandirs for science extension work. As Vijnan Mandirs are not equipped for specialised service, the advice given by them on various rural problems can be translated into action only if all the agencies in the Block extend their full cooperation to reach villagers. Even after integration with selected Blocks, the Vijnan Mandirs should work in close association with educational institutions. This is in accordance with the principle that all programmes intended for the over-all improvement of the life of the villager should be integrated at the Block level. The team of specialists operating these programmes are under the general direction and administrative control of Block Development Officers, while receiving technical guidance from the parent department.

Relations with Panchayat Samitis and Block Development Officers

8.16. Panchayat Samitis will soon assume administrative control of the Blocks with the Block Development Officer functioning as the Chief Executive Officer. Even though integration with Blocks has been opposed in some quarters on the ground that it would reduce Vijnan Mandirs to a position of subordination under the Block Development Officers, we are clear that Vijnan Mandirs would have to fall in line with the new pattern envisaged under democratic decentralisation and accept some control by Panchayat Samitis.

8.17. As Vijnan Mandir Officers are qualified scientific officers, it is necessary that their *amour propre* should be considered. For this purpose we are recommending that apart from conferment of gazetted status, Vijnan Mandir Officers should be made *ex officio* members of the functional sub-committees at the Block and the District levels. About their relations with the Block Development Officers, we feel that pay should not be the sole criterion in determining the relative jurisdiction of the Officers. Block Development Officers have experience of administration and may function as coordinators at the Block level even though their emoluments may be less than those of Vijnan Mandir Officers. The relations between Block Development Officers and Vijnan Mandir Officers may be similar to those that subsist between the Block Development Officers and the Doctors in the Primary Health Centres. This arrangement is on the analogy of the practice already existing in the district where the Collector has precedence over all other officers in the district even though he might sometimes be getting less pay than some officers like the District Judge. The arrangement suggested by us may be tried as an experimental measure and the relations between the Block Development Officers and Vijnan Mandir Officers defined in a more rational manner in the light of experience gained.

Administrative Control

8.18. As has been put to us, any programme for dissemination of knowledge would have to be tied up and be co-eval with the general educational process. It is, therefore, only logical that for purposes of administrative control, Vijnan Mandir Officers should be placed under State Education Departments. The Mt. Abu Conference also recommended in 1958 that Directors of Public Instruction should generally superintend and guide the work of Vijnan Mandirs.

8.19. Vijnan Mandirs may function as part of a comprehensive programme of educational and training institutions and agencies like selected Blocks in the manner suggested by us. The results may be watched over a period of time before deciding what would be the most suitable machinery to produce maximum results. There might be an internal evaluation followed by an assessment by an external agency after a suitable period. The number of Vijnan Mandirs should not be too small, nor should they be too large. A balance would have to be struck. The present plan of one Vijnan Mandir per district by the end of the Third Five-Year Plan appears to us to be a reasonable proposition.

Programme for Expansion

8.20. In view of the difficulty in finding adequately qualified personnel and equipment, the establishment of Vijnan Mandirs will obviously have to be phased. The response from States is important as success of the Vijnan Mandirs cannot be ensured unless they are accepted by States and worked through State agencies. The tempo is bound to quicken as the idea catches on and additional Vijnan Mandirs may be set up according to the following pattern:—

Existing Vijnan Mandirs 38

Year	Already Existing	New to be Established	Total
1960-61	38	22	60
1961-62	60	40	100
1962-63	100	50	150
1963-64	150	50	200
1964-65	200	60	260
1965-66	260	60	320

Total by the end of the Third Five-Year Plan: 320. This need not be considered mandatory. It is suggested as striking the balance between the needs and the realities of the situation. The implementation of this programme will no doubt depend on various factors, not the least of them being the availability of technical personnel, equipment and accommodation, both for the Vijnan Mandirs and the staff.

States' Participation

8.21. We have been asked to consider whether there is any need to change the nature and extent of assistance given by the States in the administration of Vijnan Mandirs. As already mentioned, the Vijnan Mandir Scheme does not provide for participation of the States, except for the provision of accommodation. As pointed out by the representatives of the Ministry of Scientific Research and Cultural Affairs, the time has come when the scheme should be looked upon and worked more as an enterprise by the States with the Centre giving only assistance and guidance. We have recommended

that the present system of administration of Vijnan Mandirs by the Centre will have to cease and that Vijnan Mandirs be made part and parcel of schemes for rural development, namely, the National Extension Service and Community Development and of educational institutions closely linked with rural services like Rural Institutes, Rural Extension Training Centres, Social Education Organisers Training Centres, etc.

8.22. During our visits we had asked State Governments whether they would be prepared to accept any liability for the administration of Vijnan Mandirs. One State Government informed us that the non-recurring cost might be shared between the Centre and the States on a 50:50 basis. At another place we were told that even though Vijnan Mandirs were administered as a Central scheme, they were really meant for the benefit of rural people and that, therefore, it was for the State Governments to consider what help they should give to derive maximum advantage out of the scheme. We were also assured by the representatives of some State Governments that they would be prepared to consider favourably the question of contributing towards the running expenses of Vijnan Mandirs if such contribution was considered necessary. One Chief Secretary informed us that while the non-recurring expenditure might be met by the Centre, recurring costs might be shared by the Centre and States in a suitable proportion.

8.23. We have given thought to this matter. We find that with effect from 1st April, 1958, each *Primary Health Centre is given a Central subsidy towards non-recurring expenditure up to a ceiling of Rs. 67,500 made up of Rs. 60,000 or 75 per cent. of actual expenditure, whichever is less, on buildings (both for the centre and residential quarters) and up to Rs. 7,500 for equipment, furniture, etc. Towards recurring expenditure each centre gets a grant of Rs. 8,500, the balance being met by the State Governments concerned.

Apportionment of Expenditure

8.24. On this analogy we suggest that 75 per cent. of the non-recurring expenditure on buildings (including staff quarters) transport, furniture, equipment, etc., might be met by the Centre and the remaining 25 per cent. by the States subject to suitable monetary ceilings. The estimated cost of a building for a Vijnan Mandir with a floor area of 1,300 sq.ft. is about Rs. 18,000. In addition to the building for the Vijnan Mandir, provision will have to be made for residential accommodation for the Vijnan Mandir staff. Some land may also be required around Vijnan Mandirs for arranging demonstrations, field experiments, etc. A vehicle, where it is imperative, as recommended, may cost about Rs. 20,000.

8.25. As regards recurring costs on pay and allowances, etc., we suggest that for the first three years, the entire liability might be met by the Centre. Thereafter, a formula may be negotiated for apportionment of costs between the Centre and the States. The period of three years may be reckoned from the date of establishment in respect of new Vijnan Mandirs and from the date the re-organised set-up suggested by us is implemented in respect of Vijnan Mandirs already established.

*Vide page 73 of the Report of the Ministry of Health for the Year 1959-60.

CHAPTER IX

ORGANISATIONAL ARRANGEMENTS**Location and Accommodation**

9.1. Opinion is unanimous that Vijnan Mandirs should be located in selected rural areas where a favourable atmosphere for rural development work is already available. The site selected should possess such minimum basic amenities as electricity and water. Availability of a building should not be the sole criterion in determining the location of a Vijnan Mandir. Suitability of the site and of the accommodation for Vijnan Mandir work, availability of residential accommodation for the staff and goodwill of the local people should be kept in view in the selection of sites for locating Vijnan Mandirs. In the selection of sites the needs of backward, disease-ridden and poorer tracts should also be considered.

9.2. There is need for a special type of accommodation for the laboratory, museum, reading room and library and it will be useful to have a type design for the Vijnan Mandir building. We would, therefore, suggest that a type design may be prepared by the Centre and circulated to State Governments for consideration.

9.3. Owing to the general reluctance of technically qualified and educated people to work in rural areas, we feel that provision of suitable residential accommodation with reasonable facilities will go a long way in attracting the right type of personnel and enthuse them to continue to work in rural areas. Rent, however, may be charged under the usual Government rules.

Jurisdiction

9.4. Till recently the area of operation of the Vijnan Mandir was restricted to villages located within a radius of five miles, but in August 1959, instructions are understood to have been issued permitting Vijnan Mandirs to extend their activities over the entire district in which they are located. During our visits to Vijnan Mandirs we found that services rendered by them in villages other than headquarters were severely restricted. Some Vijnan Mandirs had conducted surveys in a few villages in the neighbourhood, but follow-up action based on the survey was not undertaken due to transport and other difficulties.

9.5. If Vijnan Mandirs are to do effective work, they would have to be given a reasonable area of activity; otherwise their work would be too thinly spread to make any appreciable impact on the minds of the population. We are convinced that any question of Vijnan Mandirs being able to cover a whole district is unrealistic. There is a general consensus of opinion that the range of activities of Vijnan Mandirs may be co-terminus with the Blocks in which they are situated. We have suggested elsewhere that Vijnan Mandirs may be attached to selected Blocks. In view of this it is only logical that the jurisdiction should be the Block. Even though the present scheme is to have one Vijnan Mandir per district by the end of the Third Five-Year Plan, we have been told by the representatives of the Ministry of Scientific Research and Cultural Affairs that a phased programme of expansion may be continued thereafter.

9.6. Fears have been expressed at some places that Vijnan Mandirs might get stale if their activities are confined to a small area for an indefinite period. It was, therefore, suggested that this difficulty could be got over if Vijnan Mandirs are viewed as "a mobile striking force" for dissemination of knowledge and moved from place to place at appropriate intervals, after sufficient popular education has been achieved in one area. But we are strongly of the view that for several years to come a saturation point cannot be reached in the Block area as a result of the Vijnan Mandir activities. It is, therefore, desirable that Vijnan Mandirs should confine their direct activities to the Block where they are located. However, no restrictions need be placed on participation by Vijnan Mandirs in fairs, festivals and other occasions of importance in other Blocks of the District. Vijnan Mandirs should also have the freedom to establish contacts with educational institutions, Panchayat Samitis and other voluntary groups interested in a work of this type even if they are located outside the Blocks. In addition, Vijnan Mandirs may associate themselves with seminars, conferences, etc., held at the District level. This would be of some help to the District Officers and other agencies to get acquainted with the activities of Vijnan Mandirs and also spread the message of elementary scientific knowledge to wider circles.

Staff Pattern

9.7. Opinion is unanimous that two officers drawn from different groups of science are essential to ensure adequate coverage of the various functions falling within the sphere of duties of Vijnan Mandirs. We also agree that each Vijnan Mandir should have a minimum of two officers drawn from complementary subjects to supplement each other's work. Moreover, as the second-in-command, the Assistant Vijnan Mandir Officer will look after the Vijnan Mandir whenever the Vijnan Mandir Officer goes on tour or is on leave. He will also assist Vijnan Mandir Officer in the laboratory work.

Appointment of Women

9.8. It has been suggested that of the two officers in Vijnan Mandirs, one might be a woman to facilitate contacts with women-folk in villages. In view of the need to educate women on matters like house-keeping, child-care, hygiene and dietetics, we agree that in selecting officers for appointment, care may be taken to select women candidates also to fill up one of the posts, subject to their satisfying the other prescribed conditions.

Laboratory Assistant

9.9. Apart from the Vijnan Mandir Officer and the Assistant Vijnan Mandir Officer, there is a laboratory attendant who is a Class IV servant. It has been represented to us that the laboratory attendant has generally no previous laboratory experience and that his educational qualification is too low to admit of his functioning usefully or efficiently. We are suggesting separately that facilities for pathological work should also be provided in Vijnan Mandirs. As the officers in the Vijnan Mandir would be specialists in Agriculture and Chemistry, there is need for the appointment of a laboratory assistant, who will be a technician trained in pathological work. Recruitment to this post may be made from among trained technicians who

have studied up to Intermediate in Science. Apart from pathological work, the Laboratory Assistant could easily pick up other work like water and food analysis and help the Vijnan Mandir Officers in their duties. He could also function as a museum-keeper.

Mechanic-cum-Driver

9.10. There are at present no facilities to render prompt service to the rural people whenever tube-wells, pump sets, tractors, plant protection and other equipment used in agricultural operations go out of order. Apart from the Block jeep, the proposed mobile van will have to be attended to. To enable the rural people to keep the equipment in good repair, there is need for a mechanic close at hand with elementary workshop facilities which can be rigged up at a cost not exceeding Rs. 2,000. Besides running the projectors in the Vijnan Mandirs and attending to mechanical defects, he could go round the villages and explain to the people the performance, availability, etc., of various mechanical contrivances. The mechanic could also help in the preparation of models, etc., for the museum and also in arranging exhibitions. Moreover, there are in the villages various artisans plying their immemorial trades like the carpenter, the blacksmith, the wheelwright and the potter. The mechanic may advise them in regard to repairs and more efficient production. Apart from rendering certain essential services, the amount of confidence that the mechanic would be able to generate in the minds of the peasants as a result of the direct benefit derived by them is bound to assist in the effective dissemination of knowledge.

9.11. As we are recommending the provision of a mobile van, the mechanic could also function as the driver. This would result in economy. Mechanic-cum-driver may be recruited from amongst those who have undergone training in a polytechnic or those who have worked for a minimum period of three years in an automobile or engineering firm of standing.

Clerical Assistance

9.12. We find that there is a good amount of office work to be done by the Vijnan Mandir Officers. On an average, every month 32 references are received in each Vijnan Mandir and 38 letters despatched, besides other office work. According to the statistics given to us by Vijnan Mandir Officers, about 20 hours per week are spent on desk work. Details of office work to be done in Vijnan Mandirs are given in Appendix XV. During discussions the representatives of the Ministry of Scientific Research and Cultural Affairs informed us that with a view to reducing routine office work, Vijnan Mandirs had been asked to submit quarterly instead of monthly reports. Nevertheless, we feel that the present load of administrative work on Vijnan Mandirs is on the high side. There is, therefore, need to provide some clerical assistance to Vijnan Mandir Officers to relieve them of routine office work, and enable them to devote more time for the specialised work for which they have been appointed. This is in conformity with the principle which the Estimates Committee advocated in dealing with the Estimates of the Ministry of Health¹ that medical personnel

¹Para 14 on page 9 of the Thirty-Sixth Report (Second Lok Sabha), Part I.

should not be saddled with administrative work which should be in the hands of administrative officers. The same principle would apply to scientific and technical personnel who would have to be given suitable clerical assistance, where necessary.

9.13. It is realised that with the decentralisation and reorganisation recommended by us, the work load on the administrative side would go down. But we have also suggested several improvements to make Vijnan Mandirs efficient agents for dissemination of knowledge in the rural areas. All this is bound to throw additional paper work on Vijnan Mandir Officers and may justify provision of clerical assistance. Evaluation and survey work will also increase office work. Elsewhere we have suggested that each Vijnan Mandir should have a well-equipped library stocked with technical literature for those who might need it and also popular scientific books, pamphlets, brochures, etc., in the regional languages. Some assistance will have to be given for the maintenance of library, issue of books, etc., but we are not recommending a separate post of librarian for this purpose. However, the volume of work, which will be appreciable, will have to be taken into account in considering the case for appointment of a separate clerk in Vijnan Mandirs. In view, however, of our recommendation that Vijnan Mandirs should form part of bigger institutions in the States, we suggest that the work-load and the turn-over may be reviewed with reference to the facilities available in those institutions for clerical work before separate assistance is provided for the Vijnan Mandirs.

Delegation of Powers

9.14. We have already made a reference to the complaints voiced by the Vijnan Mandir Officers regarding delays in the disposal of references and in recoupment of permanent advance, etc. Much of the financial scrutiny at the Centre, such as examination of contingent vouchers for petty items of expenditure incurred by Vijnan Mandirs, is purposeless and waste of administrative effort. The success of a spread-out scheme like Vijnan Mandirs which has to take into account a wide range of local circumstances, cannot be ensured unless the man on the spot enjoys a measure of autonomy in the day to day administration.

9.15. As to the quantum of powers to be delegated to Vijnan Mandir Officers, the practice obtaining in the Blocks will be of interest. The Block Development Officers are invested with some financial powers¹ to sanction loans, grants-in-aid and other schemes up to a certain monetary limit. They also exercise some administrative control² over the departmental staff working in the Blocks. On this analogy, Vijnan Mandir Officers may be declared Drawing and Disbursing Officers and invested with powers of 'Head of Office'. They may also be invested with powers to incur expenditure on individual items up to certain limits. Provision should also be made for relaxation of these limits up to certain ceilings in respect of proposals which have the concurrence of the local committees or other specified local authorities.

¹Page 18, Sixth Evaluation Report of P.E.O. (June, 1959).

²Page 22 *ibid*,

Imprest

9.16. As mentioned earlier, each Vijnan Mandir is given an imprest of Rs. 50 to meet day to day expenses. Considering the general rise in the cost of materials, etc., this amount is inadequate and may be increased to Rs. 100.

Appointment and Disciplinary Control over Staff

9.17. Recruitment to Class IV posts, viz., Laboratory Attendant and Peon-cum-watchman is made on a regional basis from among the candidates recommended by the Employment Exchanges. The practice is to ask the Collector of the District to interview the candidates and send his recommendations to the Ministry. Appointment orders are issued from the Centre. In view of the recommendation to confer gazetted status on Vijnan Mandir Officers, we suggest that they might be declared as the appointing authority for the Class IV staff. This should obviate delays in their recruitment.

9.18. For purposes of disciplinary control, we understand that Vijnan Mandir Officers have recently been empowered to impose minor penalties like censure and withholding of increments on the Class IV staff working in Vijnan Mandirs. If they are declared as the appointing authority for Class IV staff, they would also have the power to impose major penalties, but provision will, no doubt, be made for entertainment of appeals by competent authorities. Vijnan Mandir Officers may also be vested with powers to impose minor penalties on Class III staff working under their control.

Transport

9.19. All the Vijnan Mandir Officers whom we met have represented to us the difficulties and hardships experienced by them in the absence of transport. It has been pointed out that without a transport, it is not possible for Vijnan Mandir Officers to reach villages, arrange demonstrations, experiments, film shows, etc. The State Governments and several others with whom we discussed this matter have emphasised the need to keep Vijnan Mandirs mobile, if they are to produce results. At a few places Block jeeps are being used by Vijnan Mandirs by organising coordinated tours as far as possible. This arrangement depends on the personal relations of the officers and cannot be considered to be a satisfactory arrangement. Moreover, as the Block Development Officers have already a tight programme to go through, doubts have been expressed whether it would be possible for them to spare the vehicles.

9.20. We have given careful thought to this problem, especially in the context of the recommendation¹ of the Committee on Plan Projects Team (1957) that all Block jeeps should be withdrawn, except from Mukhya Sevikas. The Committee also referred to the allegations of misuse and the psychology it generates in the rural population. It was also pointed out that the jeep in actual practice prevents detailed and long inspections and stands in the way of establishing intimate contacts with the population.

¹Para 18.14 on page 118 of Report—Volume I.

9.21. While there can be no difference of opinion with the line of reasoning adopted by that Team, we would like to emphasise that transport for Vijnan Mandirs stands on an entirely different footing. We would have had no hesitation in rejecting the request for transport, if it was required only for the purpose of reaching the villages. Vijnan Mandirs will have to be helped to take the message of science and its applications to the very door of the villager by arranging film shows, demonstrations, experiments, etc., and specially during melas and fairs and this cannot be done unless they are made sufficiently mobile. While the importance of audio-visual aids in a broad educational programme like that of Vijnan Mandirs cannot be minimised, it is obvious that they can be no substitute for personal visits. Without a mobile van it would be difficult for Vijnan Mandir Officers to take fragile equipment like projectors, glassware, models, etc., and arrange demonstrations and experiments at the very door of the villager. Integration of Vijnan Mandirs with Blocks is not likely to solve the transport problem as it has been made clear to us that Blocks are already finding it difficult to cover the area efficiently. The suggestion of allotting the Block jeep for one day in a week for Vijnan Mandir work may not at all be practicable. Moreover, allotment of the vehicle for a day in a week would reduce the number of visits by the Vijnan Mandir staff to four per month, which is totally inadequate. In any case, a jeep will not meet the requirements of a Vijnan Mandir.

9.22. If Vijnan Mandirs are to function on an efficient basis, it is necessary to provide them with a mobile van fitted with a generator and fixtures for transporting laboratory equipment and audio-visual aids. This will also help in organising peripatetic parties with the assistance of members of science clubs. But we have suggested in an earlier chapter that some Vijnan Mandirs may be attached to the Extension Training Centres or institutions like Rural Institutes and Social Education Organisers Training Centres. In considering the question of providing transport for Vijnan Mandirs, we have to take into account the transport facilities available in these institutions before Government is committed to additional expenditure in this behalf. If vehicles are available at these institutions, they should be utilised for the Vijnan Mandir work by adjustments; if necessary, additional funds may be provided for petrol and other expenses.

Popular Association

9.23. An advisory committee is necessary to provide not only administrative coordination with other agencies operating in the area but also assist in drawing up a programme of work in the light of local problems and for reviewing the work done. As Block Advisory Committees are being replaced by statutory Development Boards or Committees in pursuance of the policy of democratic decentralisation, there might be some difficulty in securing representation for Vijnan Mandir Officers on the statutory bodies. A separate committee for Vijnan Mandirs may not also be necessary. The functional sub-committees envisaged for the Panchayat Samitis and the Zila Parishads for education and allied activities may include the Vijnan Mandir Officers. We recommend that the Vijnan Mandir Officers should be *ex officio* members of these sub-committees at both the

Block and the District levels. It is even now open to these Committees to coopt educationists, science teachers and other persons who may be interested in the spread of scientific knowledge in rural areas. Vijnan Mandir sub-committees may also be set up for the Rural Institutes and other bodies which may run the Vijnan Mandirs in future.

Central Committee

9.24. A Central Advisory Committee was constituted in January 1956, under the Chairmanship of the then Minister of Natural Resources and Scientific Research to advise the Ministry on the operation of the Vijnan Mandir Scheme and to look after its working. Apart from official representatives, there were three Members of Parliament, two from the Lok Sabha and one from the Rajya Sabha. This Committee has never met so far. We understand that a proposal to establish two zonal committees for the States in the Northern and the Southern zones was mooted to advise the Government on the working of Vijnan Mandirs and to review their progress. Each Zonal Committee was to consist of a chairman and eight members. The State Governments were also invited to suggest panels of eminent doctors, scientists, etc., considered suitable for appointment as members of the proposed committees. Nothing concrete appears, however, to have been done in regard to the establishment of these Zonal Advisory Committees.

9.25. To ensure uniformity in the administration of Vijnan Mandirs in accordance with the policy evolved by the Centre and also to review the progress made from time to time, a Standing Committee at the Centre would be helpful. This Committee would be a policy-making body and would also consider requests for establishment of fresh Vijnan Mandirs as also the grants to be made to the institutions for running them. The Committee might consist of representatives of the Ministries of Scientific Research and Cultural Affairs, Finance, Education, Community Development and Cooperation, Food and Agriculture, the Council of Scientific and Industrial Research and institutions to which Vijnan Mandirs may be attached and Members of Parliament.

Evaluation

9.26. There is need for the creation of a machinery at the Centre for the evaluation of the work done by the Vijnan Mandirs. While *internal* evaluation could be conducted by the agencies responsible for the actual administration of Vijnan Mandirs, *external* assessment may be entrusted to the Programme Evaluation Organisation of the Planning Commission. If necessary, that organisation could be strengthened.

Grant to Non-Official Agencies

9.27. If Vijnan Mandirs are attached to private institutions like Rural Institutes, a budget with ceilings for different items has to be drawn up for each Vijnan Mandir in consonance with the general framework of the scheme laid down by the Centre. Advance grants may also be given to the Institutes, as and when necessary.

CHAPTER X

RECRUITMENT AND TRAINING

Recruitment

10.1. Vijnan Mandir Officers and Assistant Vijnan Mandir Officers are at present recruited by *ad hoc* Selection Boards consisting of representatives of the Ministry of Scientific Research and Cultural Affairs and of the State Government concerned. As knowledge of the regional language is an essential qualification, recruitment is made on a regional basis. The posts of Vijnan Mandir Officers and Assistant Vijnan Mandir Officers are at present classified as Class III non-gazetted. No written tests of candidates for the posts are held and selections are made on the basis of their performance at an interview. The vacancies are advertised in the leading newspapers in the region and also notified to the Employment Exchanges concerned. The qualifications and experience prescribed for the posts are given in Appendix XVI. The Vijnan Mandir Officer and Assistant Vijnan Mandir Officer are generally posted in a Vijnan Mandir from different groups of Science to ensure proper balancing of work.

10.2. Considering the fairly wide range of activities of Vijnan Mandirs, it is obvious that the officers-in-charge will have to be resourceful and possess a general background knowledge in some of the major branches of science like Physics, Chemistry, Botany, Zoology and Agriculture. We agree with the views placed before us at several places that a good Master's Degree in Science might be the minimum qualification as at present for the posts.

10.3. In view of the emphasis on agriculture, we suggest that the senior officer in the Vijnan Mandir may preferably be an M.Sc. in Agriculture with research or teaching experience. The junior officer may be drawn from the physical sciences, preferably from Chemistry. Persons with some field experience and ability for writing and lecturing on popular scientific topics in the regional language, apart from good academic records, may be preferred. To provide for some flexibility in the matter of recruitment, it has been suggested that the field of choice need not be restricted to those holding a Master's degree, especially in regard to the Assistant Officer. We have considered the suggestion, but feel that it would be preferable to have a person holding a Master's degree in Chemistry for the junior post as well to enable him to undertake laboratory work, especially analysis of soil and water. The objective should be to draw the two officers from mutually complementary subjects in science and by pooling their knowledge and experience, it should be possible for them to deal better with the problems coming up for solution.

Scales of Pay

10.4. It has been represented to us that the scales of pay of Rs. 250—15—400 for the Vijnan Mandir Officer and Rs. 160—10—330 for the Assistant Vijnan Mandir Officer are pitched somewhat low and require revision. We understand that some Vijnan Mandir officers have resigned, having secured better jobs elsewhere. Having regard

to the duties and functions of Vijnan Mandirs and the general reluctance of scientific personnel to reside in rural areas where amenities are few, we agree that there is need to offer sufficiently attractive terms to the officers to make it worthwhile for them to stick to their posts.

10.5. For Vijnan Mandir Officers, we are suggesting separately that they should be given gazetted status. The post of Assistant Vijnan Mandir Officers is comparable to that of Junior Scientific Assistants in Government research organisations, who are required to work under the guidance and supervision of senior officers and conduct experiments according to their directions. For them the Commission of Enquiry on Emoluments and Conditions of Service of Central Government Employees (1957-59) have suggested a scale of Rs. 210-10-290-15-320-EB-15-425*. A similar scale of pay would appear to be suitable for the Assistant Vijnan Mandir Officers. However, in view of the recommendation that the Centre should divest itself completely of its responsibility for the actual administration of Vijnan Mandirs, except in regard to formulation of policy, coordination and evaluation of work, we do not consider it necessary to suggest any specific scales of pay for the Vijnan Mandir Officers and the Assistant Vijnan Mandir Officers. But we would like to emphasize that the Officers should form part of larger cadres in the States and that their scales of pay should be such as to attract young men of talent with an aptitude for a work of this type and who can do justice to their work. Non-official organisations like Rural Institutes which might be willing to work the scheme according to the pattern laid down by the Centre will be free to adopt their own scales of pay, subject to suitable ceilings to be fixed for purposes of grants by the Centre.

Promotions

10.6. Several Vijnan Mandir Officers have represented that service in Vijnan Mandirs is like a blind alley without any prospect of promotion to higher ranks. This has led to a sense of frustration in the minds of the staff and made the service less attractive to young men of talent. Prospects of promotion in service is of crucial importance for the stability of the staff and we certainly agree that avenues of promotion have to be provided to ensure efficiency.

10.7. We suggest that a proportion of the posts of Vijnan Mandir Officers may be filled by promotion of Assistant Vijnan Mandir Officers on the basis of fitness-cum-seniority. In considering what this proportion should be, our attention has been drawn to the report of the Committee set up by the Ministry of Food and Agriculture under the Chairmanship of Dr. M. S. Randhawa, I.C.S., recommending the following percentages for direct recruitment and promotion for different categories of scientific personnel and research workers:—

Classification of posts	Direct Recruitment	Promotion
Class I	100%.	Nil
Class II	50%.	50%.

*Para 35, page 162 of Report.

10.8. This recommendation, we understand, has been accepted by the Government in principle. The Bombay Administrative Enquiry Committee¹ (1948) had also recommended earlier that "as a general rule, at least 50 per cent. of the posts should be filled by direct recruitment". We feel that this percentage is on the high side in so far as Assistant Vijnan Mandir Officers are concerned since it might lead to quick promotion of inexperienced officers. We would, therefore, suggest that promotion from the ranks of Assistant Vijnan Mandir Officers may be made up to a maximum of 25 per cent. subject to suitability and a minimum service of five years.

10.9. The Vijnan Mandir Officers are in an unenviable position in that they have nothing to look forward to by way of promotion. Social Education Organisers in several States form part of the regular cadres of the State Education Department; likewise the Vijnan Mandir Officers might form part of suitable cadres. The posts of Vijnan Mandir Officers may also be brought in line with lecturer-ships in university institutions and agricultural colleges. Extension Wings are being started in institutions like National Laboratories, Agricultural Colleges and Teachers' Training Colleges, and something could be done to effect a close relationship between the Vijnan Mandirs on the one hand and extension and research agencies on the other to ensure that the officers could look forward to better prospects on the basis of work done in the Vijnan Mandirs. Instead of resorting to open market recruitment, we feel that there might be some advantage in tapping existing sources and giving preference to Vijnan Mandir Officers of sufficient promise for appointment to posts in the extension wings we have referred to. If necessary, the recruitment rules could be modified suitably for the purpose. We are suggesting separately establishment of an agency in the Planning Commission for evaluation of the scheme. Preference could be given to successful and suitable Vijnan Mandir Officers for appointment in that set-up.

Open Market Recruitment and Deputation

10.10. Fears have been expressed that directly recruited candidates might leave as soon as they secure better jobs. It has also been put to us that this contingency may not arise in respect of departmental candidates who are deputed to work as Vijnan Mandir Officers and who are bound to do good work as their further promotion in the parent departments would depend on the work turned out by them in Vijnan Mandirs. In this connection it has been pointed out that direct recruitment is not an important source for filling up the post of Block Development Officers. According to the Fifth Evaluation Report² of the Programme Evaluation Organisation, "..... practically all B.D.Os. are persons with previous experience of work in some Government department. In most cases, their work has been in the rural areas as officials of the Revenue, Agriculture or other development departments". At some places, however, we have been informed that direct recruitment might be made as deputationists may not take requisite interest in this rather new venture and that departmental candidates might, if necessary, take their chance along with others.

¹Para 347, page 180 of the Report.

²Page 11, Fifth Evaluation Report (May 1958).

10.11. Deputation of serving personnel would facilitate contact with the technical departments and other educational institutions. As the emphasis of Vijnan Mandirs is on education, we feel that as far as possible, Vijnan Mandir Officers may be recruited from the teaching staff of science or agricultural colleges. The field experience gained by the staff will enrich their knowledge and improve the quality of instruction given by them in the class room and give it a practical bias. In view, however, of the shortage of qualified personnel, departments may not be in a position to meet the growing requirements of Vijnan Mandirs in entirety. It will, therefore, be necessary to adopt both systems of recruitment.

10.12. For the posts of Assistant Vijnan Mandir Officers, 60 per cent of the vacancies may be allotted to the departmental candidates and the rest thrown open for direct recruitment. As regards Vijnan Mandir Officers, we have already suggested that vacancies up to a maximum of 25 per cent. may be filled by promotion from the ranks of Assistant Vijnan Mandir Officers. The remaining vacancies may be apportioned between departmental candidates and direct recruits on the basis of 60 per cent. and 40 per cent. respectively. Selections may be made by the State Public Service Commissions with the assistance of technical experts.

Rural Background

10.13. Without an adequate knowledge of rural problems and conditions, it would be difficult for the Vijnan Mandir Staff to develop contacts in rural areas and draw up a programme of action on a rational basis. The idea of making rural background an essential condition for recruitment of the Vijnan Mandir staff has, however, not been favoured on the ground that most of the candidates have some idea of rural conditions even though they might have studied in colleges in urban areas and that with some field experience they would acquire the necessary rural background. It has also been suggested that 'rural bias' is an indeterminate factor and that recruitment need not be restricted to persons drawn from rural areas. These arguments do not appear to us to be of much substance. Doubts have also been expressed whether suitably qualified persons would be available from rural areas for work in Vijnan Mandirs. These are valid and serious difficulties. We have given careful thought to these arguments and feel that persons with rural background may be preferred, other conditions being equal.

Gazetted Status

10.14. Several Vijnan Mandir Officers have expressed to us that officers of comparable status, like Block Development Officers, enjoy gazetted status in most of the States even though their scale of pay is somewhat lower. This difference in status, we are told, is a handicap in the transaction of their work. In view of the qualifications prescribed for the Vijnan Mandir Officers and their responsibilities, we feel strongly that gazetted status is essential both from personal and official considerations.

Training

10.15. Vijnan Mandirs have to attend to problems of a varied type pertaining to rural health, sanitation, production, agriculture, etc., and graduates fresh from colleges with inadequate experience

in rural development work or those working in Government Departments in entirely different fields will not be able to function successfully. Something more than book knowledge is essential if the candidates selected to work in Vijnan Mandirs are to function as efficient agents for dissemination of scientific knowledge in rural areas. For this purpose they have to be put through a regular programme of training before they are asked to take charge of Vijnan Mandirs. The programme of training will have to be drawn up on a broad basis and may include the following aspects:—

- (i) Training in extension methods, processes of communication, including use of audio-visual aids and training in human relations in an institution like Social Education Organisers Training Centres.
- (ii) Training at an Orientation Training Centre, along with Block Development Officers and other extension officers. This training would help the Vijnan Mandir Officers to get a proper understanding of objectives, principles and techniques of Community Development Programmes, and in conducting a survey and drawing up reports thereon and taking follow-up action;
- (iii) Training in museum techniques;
- (iv) Visits to a few successful Vijnan Mandirs, including conducted tours for the purpose of study of problems with special reference to health and sanitation;
- (v) Specialised training for Vijnan Mandir Officers/Assistant Vijnan Mandir Officers who are graduates in Biological Sciences at the Entomology, Mycology and Soil Chemistry divisions of the Indian Agricultural Research Institute or specialised training for Vijnan Mandir Officers/Assistant Vijnan Mandir Officers who are graduates in Chemistry in soil and water analysis at the Indian Agricultural Research Institute and
- (vi) Training in nutrition.

Provision will also have to be made for the association of trainees with some successful Vijnan Mandirs to get a practical insight into the problems they have to tackle after training.

Duration of Training

10.16. While there is unanimity of opinion about the need for adequate training, a wide range of views has been expressed about the duration of training, especially in regard to analytical work. The Director of the Sheila Dhar Institute, Allahabad, is of the view that persons holding either a Bachelor's degree or a Master's degree in agriculture cannot carry out soil analysis, but an M.Sc. in Agricultural Chemistry can do so after about six months' training. It is stated that an M.Sc. in Inorganic Chemistry would require training for about one year for soil analysis. Microscopic examination of food and culture tests for purposes like determination of nutritional value of food are complicated and might have to be kept outside the purview of Vijnan Mandirs. The Agricultural Chemist to a State Government informed us that an M.Sc. in Agriculture was aware of the basic

principles involved in the analysis of soil and water and that three months' training would be sufficient to enable him to manipulate the methods. The Indian Agricultural Research Institute are of the view that a person holding a Master's degree in Inorganic Chemistry with a background of agronomy would require training for about a year, while an M.Sc. in Agriculture with Chemistry as a supporting subject would require training for about six months. It has also been pointed out that for analysis to be done accurately, the basic data, charts, etc., prepared in the States would have to be drawn upon and that persons doing analytical work should be associated closely with the agronomists for some time. We are told that for those who have undergone post-graduate training at the Indian Agricultural Research Institute, training for about six months spread over the two disciplines of Agronomy and Chemistry is necessary to enable them to pick up the necessary experience in techniques which they have to employ in the Vijnan Mandirs. The Indian Institute of Science, Bangalore, are of the opinion that training for about six months would be necessary before the personnel could be asked to take charge of Vijnan Mandirs.

10.17. We have also been advised that without adequate experience of the crop history of the area, it would not be possible for even those holding a Master's degree in Agriculture to interpret analytical data and give correct advice to the peasant. At some places, on the other hand, it has been stated that agricultural graduates can do soil and water analysis without any further training as it forms part of the curricula of studies in agricultural colleges. The standards in this regard are, however, not uniform and we have been told at several places that even agricultural graduates would require some training as the instruction imparted to them in colleges is only of a general nature.

10.18. In view of the conflicting advice given to us by the experts at different places, it has not been possible for us to come to any definite conclusion as to what tests could be conducted with the available equipment and what training is necessary to enable the officers to render really good service to the people. We understand that when the Vijnan Mandir Scheme was placed before the Planning Commission in 1955, a Sub-Committee was set up at the instance of the then Member-in-charge, the late Dr. J. C. Ghosh, and that the Sub-Committee had made definite recommendations in regard to training of the personnel and other ancillary matters. We also understand that the Sub-Committee's recommendations were not implemented *in toto* when the scheme was put into operation. In any case in view of the time-lag since the Sub-Committee gave its report, the matter deserves re-examination in the light of the experience gained in the working of Vijnan Mandirs and the difficulties faced by them. For this purpose we recommend that a Sub-Committee may be set up in the Planning Commission with representatives from the Ministries of Community Development and Cooperation, Scientific Research and Cultural Affairs, the Council of Scientific and Industrial Research and the Indian Medical Research Institute. Some selected Vijnan Mandir Officers and an expert from the Indian Agricultural Research Institute concerned with soil analysis may also be associated with this Sub-Committee. Among other things, the Sub-Committee may con-

sider (i) the adequacy and suitability of equipment supplied to Vijnan Mandirs; (ii) what additions or modifications should be made to enable Vijnan Mandirs to function efficiently; (iii) whether the facilities available at the existing training centres like the Social Education Organisers Training Centres/Orientation Training Centres, etc., are suitable for the training of Vijnan Mandir Officers and (iv) if not, what arrangements should be made to fill the gap. The Sub-Committee may also consider whether satisfactory arrangements exist for the training of trainers themselves. During discussions with the representatives of the Planning Commission they have agreed to set up a Sub-Committee on the lines indicated by us. A communication has also been sent to them in this respect. We suggest that this matter be pursued further by the Ministry with the Planning Commission.

10.19. On the question whether the existing training institutions controlled by the Ministry of Community Development and Cooperation may be utilised for imparting training to Vijnan Mandir Officers, we have been informed that the courses now conducted at those institutions may not be suitable for the training of the officers and that special courses will have to be organised. We suggest that this matter may be examined further in consultation with that Ministry. They may also be asked to consider whether training for the Vijnan Mandir Officers can be imparted at their Institute in Dehra Dun.

Training in Human Relations

10.20. The Vijnan Mandir Scheme is a new experiment towards better life in villages and involves the difficult task of handling the conservative rural population with a view to removing their ignorance, superstitions and mental inertia. A human understanding and a natural ability to mingle with the common people on the basis of goodwill are as important as any degree of technical skill possessed by the staff. Vijnan Mandir Officers should be made conversant with the social habits of the people and the manner in which changes are to be effected. Such training is necessary as the basic objective of Vijnan Mandirs is to change the mental attitudes of the people. It is also important that the Vijnan Mandir staff should know how to develop contacts with village leaders and identify themselves with rural life. In the reorganised programme for Social Education Organisers, emphasis is being laid on the study and analysis of 'group behaviour, group relationships and group processes'. The institutions for the training of Social Education Organisers may, therefore, be able to take up the responsibility for the training of Vijnan Mandir Officers in the science of human relations and human values, if necessary, by conducting special courses.

In-service Training

10.21. A conference of Vijnan Mandir Officers is held in Delhi annually for discussion of common problems and the measures to be adopted to overcome the difficulties faced by Vijnan Mandirs. Apart from this, there appears to be no provision for the in-service training of the Vijnan Mandir staff. If initial training is necessary to enable the officers to perform their duties efficiently, holding of refresher

courses at regular intervals for the staff already in position is equally necessary to keep them abreast of the latest developments and enable them to appreciate how their work is correlated to the work of other departments and also how it affects the community as a whole.

10.22. Even after the reorganised set-up suggested by us gets stabilised, the practice of holding annual conference of Vijnan Mandir Officers may continue for discussing common problems relating to administration, coordination with other agencies and programme implementation. It should be open to the organisers to invite specialists in any field in which the Vijnan Mandir Officers may require help or guidance. Apart from conferences and seminars, several other methods may have to be thought of in due course to give refresher training to Vijnan Mandir Officers to ensure that they do not get stale. At suitable intervals, say, every three years, the Vijnan Mandir Officers may be deputed to attend special refresher courses for about a month or two in an appropriate institution in the States where they are working. During this period, the State Governments may also 'attach' them to different technical and research institutions in the States to keep their knowledge up to date.

Security of Tenure

10.23. The Vijnan Mandir staff have no security of tenure at present, the scheme itself being temporary. Owing to uncertainty, the incumbents are unable to devote whole-hearted attention to the work and it is not surprising that they are constantly on the look-out for stability. Since it is envisaged that Vijnan Mandirs will be run by State Governments in coordination with other development activities, the interest and conditions of service will, no doubt, be looked after by State Governments as in the case of other officers. Moreover, the demand for scientific personnel for educational institutions engaged in the teaching of science at different levels, research centres, etc., is so great that the question of providing a permanent footing to the Vijnan Mandir staff should not be a problem. It should also be possible to fit them in a suitable cadre in the States. The question of insecurity of tenure ought not, therefore, to persist. However, we would suggest that those who have completed three years of service may be made quasi-permanent as a prelude to their confirmation in due course.

CHAPTER XI

CULTURAL WING

11.1. We have been commissioned to report on the desirability and usefulness of adding cultural wings to Vijnan Mandirs in order to help in the revival of local arts and crafts and thus bringing the Vijnan Mandirs closer to the emotional life of the people. While there are a number of other institutions and agencies attending to such a cultural programme for the people, it was thought that Vijnan Mandirs may help themselves by adding cultural programmes to general scientific education. Rural people may be brought to education more easily through entertainment programmes like *harikhathas*, *bhajans*, *kirtans*, recitals, etc. Cultural wings, it was argued, would lend colour and tone to the otherwise matter-of-fact atmosphere of Vijnan Mandirs.

11.2. *A priori* there is certainly something in favour of such a proposal. We were, however, surprised at the large mass of opinion which we came across and which solidly opposed this proposal. We hardly found anyone associated with Vijnan Mandirs and their work who was really in favour of the proposal. We were eager to understand the rationale of this opposition. The arguments against this proposal may be summed up as follows:—

- (1) Influential institutions like the Lalit Kala Akademi, Sangeet Natak Akademi, the All India Handicrafts Board, etc., are taking good care of nation-wide revival of indigenous arts and crafts. The Social Education Organisers Training Centres also lend a hand in training their candidates to help in this revival in all the Blocks. Why then bring in the Vijnan Mandirs which are yet in their exploratory stage in reference to their own particular objective, into this picture?
- (2) To fritter away energy and resources in organising cultural wings with their special emphasis on cultural programmes might well lead to the watering down of the major duties entrusted to Vijnan Mandirs for dissemination of scientific knowledge among the rural people.
- (3) There is nothing to prevent the Vijnan Mandirs without any cultural wings from participating in entertainment programmes with cultural aims organised by the Social Education Organisers and others in the Blocks.
- (4) Once the entertainment programmes become part of Vijnan Mandir work, they are likely to attract more and more the mind of the people from the core of the harder work of spreading scientific knowledge.
- (5) The Vijnan Mandirs have yet to explore fully the possibilities of how best to turn the mind of the villager towards a scientific outlook. Even if at some distant future, established and successful Vijnan Mandirs may adopt cultural wings, it would now be premature and even self-defeating.

11.3. It would not do to compare the modern trend of thought that science and the humanities should be brought closer together in the education of the people with the question of burdening Vijnan Mandirs with cultural wings. To say that Vijnan Mandirs should not be so burdened now is not to fly in the face of the above principle, but simply to accept the limitations under which the Mandirs are slowly developing in the present context. It is no good quoting inappropriate examples from other countries and alluding to different conditions. Conditions in England and America and other advanced countries are quite different from those in India. In our country, we are only at the threshold of the scientific education of the people and much headway has to be made in the face of innumerable superstitions and irrational attitudes of mind due to ignorance and poverty. In such a situation, it would be wrong to attempt to do too many things through one slowly growing agency only.

11.4. Despite the increasing emphasis on the study of the humanities in Western countries, the total number of students studying in science colleges, in the United Kingdom is about 50 per cent. of the total college student population. In India, however, this number is about 28 per cent only at present, while, strangely, it was understood to be about 32 per cent. a few years ago. This underlines the need for devoting more thought and resources than ever before to the teaching of science in our country. Whatever might be the justification for tempering the teaching of science and technology by arranging courses in the humanities in advanced countries like the United Kingdom and the United States of America where, as our Prime Minister observed, there are ample facilities for the study of science "from the cradle upwards," the place of science and technology in our country is too insignificant to justify the import of other aims and objectives in institutions which are fundamentally meant for scientific education. The tragic "Miracle Girl" incident at Zinzka near Bhavnagar in Saurashtra is a clear enough signal that while the scientific outlook is not deep in urban areas, it has not even touched the fringe of our villages.

11.5. During discussions, the representatives of the Ministry of Education informed us that plans have been formulated to raise the number of students studying in science educational institutions to 40 per cent during the Third Plan and that parity (i.e. 50: 50) would be reached during the Fourth Plan. While the importance of culture is not denied, we are of the opinion that the scales are already tilted too

1. From Lok Sabha Debates dated 1-5-1958 (Vol. XVI—No. 58) page No. 12768.

heavily in favour of arts in the country to justify yet another move through Vijnan Mandirs. Apart from Social Education Organisers in the Blocks, educational institutions and other agencies are already organising cultural programmes of a varied type on different occasions and we are satisfied that there is no need for Vijnan Mandirs to go into this field. As has been put to us by some, there is no lack of culture in this country, while 'science' is still in its infancy. Positive measures have to be taken to enable science to find its feet in the life of our people. There can be no question of any dichotomy between science and culture at this stage of scientific development in this country or any possible clash. We would, therefore, suggest that Vijnan Mandirs would do well to concentrate on dissemination of scientific knowledge. To give a cultural orientation now to Vijnan Mandirs may also involve a fundamental change in the basic concept of the scheme, not justified by the circumstances.



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CHAPTER XII

CONCLUSION

12.1. It was indeed a fascinating experience for the Committee to go round and look at some of the Vijnan Mandirs, hold heart to heart talks, not only with their staff, but a good cross-section of the rural people who are slowly coming under the influence of these institutions. Among those who opened their minds to us unreservedly were officials at different levels and non-officials representing almost every shade of opinion. When we started picking our way through the labyrinth of opinions and views in respect of Vijnan Mandirs, we confess, we were at the outset somewhat bewildered and perplexed by the extremes of optimism and of pessimism. But underneath this wide disparity of opinion, there was an unmistakable thread of unanimity which was that there was no question that India's most crying need at the moment was the dissemination of elementary scientific principles attaching to the daily life of the millions in rural areas. These millions were neither impervious to new ideas nor diehard defendants of everything old. In the last few decades in which the two World Wars were fought and won, and during which India passed from subjection to freedom, the minds of the people had become aware of the tremendous change in every direction taking place in the world around them. They were like the dry earth, waiting for the rainfall of more knowledge and techniques to improve their life and make it happier and more prosperous. But there was one inevitable condition of their responding to anything brought to them for improving their lot. And that was, that it should be proved to them that anything new would really and practically make them more prosperous. The onus of proof that the new could better their life was thus squarely placed on the shoulders of those who brought them new knowledge and techniques. The Indian peasant is a very shrewd and hard-headed person who through the centuries had faced serious difficulties and problems and solved them willy-nilly with his own limited knowledge and enterprise. The Vijnan Mandir Scheme was not going to be an exception to this test of realism at the hands of the people. It was not surprising, therefore, that the few and scattered Vijnan Mandirs could not generally within a short time pull their weight with the people. First of all, the staff of Vijnan Mandirs had to pull aside the veil of suspicion and lack of faith of people in such an enterprise. The Vijnan Mandirs did start with the first step of making the right approach to the people. Consistent with their resources and capacity, we could not say that Vijnan Mandirs failed in their first enterprise. They did make a fairly good start. That was why we found at a few centres at least that, instead of the Vijnan Mandirs making demands on the people, the people had begun to make demands on Vijnan Mandirs. We thought that this was a healthy sign. Having pierced the veil of scepticism and disbelief, Vijnan Mandirs had the harder task of carrying conviction to the people that the scientific knowledge they wished to spread and the new techniques they sought to introduce were really of such a nature as could bring more prosperity and happiness to them. At a meeting of Vijnan Mandir officers from all over India held at Delhi which was attended by some Members of this Committee, the most remarkable phenomenon was

the enthusiasm and the sincerity of purpose of the assembled officers, almost without exception, in spite of all the frustrations, delays and difficulties they had had to face. It appeared to the Members that here was a body of educated scientific workers, who if they could be given the tools they needed, would certainly do a good job. It was evident from the many discussions and probes we made that we have given a big programme to the Vijnan Mandirs without providing them with necessary facilities and equipment. As may be seen, some of our recommendations have been made to remedy this defect.

12.2. Quite apart from the limited success achieved by the small number of Vijnan Mandirs already established, we have to look at the whole problem from the broader perspective of the nation's urgent and paramount needs today. Our country has never lacked religious traditions and institutions, nor philosophy, culture and the great arts, but right through the last several centuries, there is one conspicuous and fatal omission from which we have suffered grievously. Elementary knowledge of scientific principles affecting production in the farm and the workshop and equally affecting sanitation, nutrition, health and beliefs and practices have never reached down to the deep levels where the masses live. When India became independent after nearly two centuries of British rule, when literacy stood at about 12 per cent. one can imagine the intolerable inadequacies in the field of elementary scientific knowledge. Therefore, we must here and now take recourse to every method and channel of communication to spread scientific knowledge among the people, or we shall be compelled to fall behind. It is against the background of this grim situation that we should study the implications of the Scientific Policy Resolution of the Government. We are afraid that, as in many other things, while enunciation of policy is emphatic and clear, its implementation is left vague and uncertain.

12.3. It is into such a picture that the Vijnan Mandir Scheme has brought a ray of light and hope. No one who realises the reality of the situation will cavil at the basic principle underlying the scheme, nor at the broad human vision behind it. It is one thing to suggest constructively ways and means of improving the Vijnan Mandir and another thing altogether to suggest that in view of their not being already a phenomenal success, they should be scrapped. It is equally futile to suggest that the current educational system in the country is the only medium for taking scientific knowledge to the masses. Normal education is a slow process and it cannot be burdened with imperative and quick programmes of mass education. Not only the normal educational system or the Vijnan Mandir Scheme, but a hundred other approaches will have to be made to the masses if we are to speed up their betterment. That is why we have launched out upon vast programmes like Community Development Projects, National Extension Service, Panchayati Raj and Cooperatives. In any such programme, the Vijnan Mandir Scheme has its definite place. What is needed is neither the scrapping of the Scheme, nor adopting a go-slow policy in respect of their multiplication. With our experience and resources, we ought to be able now to lay down a plan to strengthen and make more efficient the existing Vijnan Mandirs. It is heartening to note that under the Third Five-Year Plan there is a proposal to put one Vijnan Mandir in every District

in India which means 320 Vijnan Mandirs. This is certainly not going to be adequate in a vast country like India. Nevertheless, it would help to set the ball rolling in the right direction.

12.4. None could have been more critical than this Committee about the present plight of the Vijnan Mandirs. We see very clearly that the Vijnan Mandirs today are functioning feebly and inefficiently. We have, therefore, taken courage to suggest drastic necessary changes to improve the situation. We could not have done otherwise for the double reason that we realise the urgent need for institutions like Vijnan Mandirs and at the same time the defects in what is going on. We have therefore adopted deliberately the constructive approach instead of the easier destructive one.

12.5. We confidently look forward to the day when under the guidance of our Prime Minister, whose passion for science is so well-known and other distinguished scientists in the country, there will be established Vijnan Mandirs linking themselves with the life of the people and with each other, so that their dynamic influence will touch every village and transform it. If in a small-sized country like Japan there are nearly 8,000 such institutions called "Public Halls", one can well imagine how in a vast country like ours we would some day need many times that number of Vijnan Mandirs. In reality, we have no choice, we must accomplish this task or be completely pushed away in the world-wide march to the happiness, prosperity and progress of the people. It is in this light that we would ask the critics of the Vijnan Mandir Scheme to study it and appreciate it.

Sd/- Balvantry G. Mehta—*Chairman*

Sd/- M. P. Bhargava—*Member*

Sd/- Muhammed Khuda Bukhsh—
Member

Sd/- Yashoda Reddy—*Member*

Sd/- G. Ramachandran—*Member*

Sd/- Phool Singh—*Member*

Sd/- N. K. Sreenivasan,
Secretary

NEW DELHI,
June 26, 1960.

PART II



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Summary of Recommendations—(Chapter-wise)

CHAPTER III

FACTUAL PICTURE TODAY

Recommendations

Sl. No.	Ref. to Para No.	
1	3.15	In a few Vijnan Mandirs both the Vijnan Mandir Officer and the Assistant Vijnan Mandir Officer were drawn from the same group of science and not from complementary groups. There is need to post the staff on a rational basis for proper balancing of work.

CHAPTER IV

A REVIEW OF THE SCHEME

2	4.9	Inspections which provide first-hand knowledge of local difficulties, to be effective, should be conducted as frequently as possible.
3	4.5	Proper shape and content must be given to the programme of work, bearing in view the objectives of the scheme and the capacity and limitations of Vijnan Mandirs.

CHAPTER V

NEED FOR VIJNAN MANDIRS

4	5.10	If an adventitious programme like Vijnan Mandirs is to really help the educational process, they should be properly located, equipped and staffed.
5	5.14	An institution like the Vijnan Mandir closed to the village and related to its immediate needs should primarily strike the horizon of the villager and improve his mental state.
6	5.16	A scheme like this which has been developed to a certain stage should be carried on to obtain results. If these "little islands of science" are to help in developing a scientific temper among the people, they should be properly worked.

CHAPTER VI

PROGRAMME OF WORK

7	6.2	Vijnan Mandirs have to concentrate on adults of significant age-groups who are not yet too old to learn and who have not had any formal education.
8	6.2	Vijnan Mandirs should educate villagers on sanitation, health and hygiene, balanced diet and nutrition, pest and plant diseases, taking into account available resources in the rural areas.

Recommendations

Sl. No.	Ref. to Para No.	Recommendations
9	6.5	In places where no Science Clubs have been set up, the Vijnan Mandir Officers should persuade teachers to organise them. They should also assist in starting such Clubs for interested groups.
10	6.6	Vijnan Mandirs should mobilise the agency of progressive farmers to reach the people.
11	6.6	Vijnan Mandir Officers should participate in the meetings of agencies like Youth Clubs, Community Centres and Mahila Samaj inside the Blocks where they are located.
12	6.7	The agency of trained teachers should be mobilised by Vijnan Mandirs and utilised as 'intermediaries' to create science-consciousness among rural people.
13	6.8	There is need for providing a museum which will be realistic and functional. The exhibits should carry suitable explanatory notes in regional language.
14	6.10	Exhibits might be stocked at convenient centres in the States and sent to the various Vijnan Mandirs according to a pre-arranged programme.
15	6.10	A pattern for equipping the museum for the guidance of State Governments and other agencies who might be invited to work the scheme, should be laid down.
16	6.11	The committee of experts in the Planning Commission, which we have recommended separately to go into the entire question of equipment and training concerning Vijnan Mandirs, might also consider the manner in which the Vijnan Mandir museum should be equipped and organised.
17	6.12	Vijnan Mandirs should be equipped with audio-visual aids like projectors, films, film-strips and slides to enable them to arrange educational shows.
18	6.13	Every Vijnan Mandir should draw up a programme of talks, lectures, demonstrations, etc., sufficiently in advance and this programme should be implemented systematically and continuously.
19	6.14	Lectures and talks should be prepared with due regard to the psychology of the village adult and this aspect should also be taken care of in the training programme of Vijnan Mandir Officers. Records should be kept of such lectures and talks.
20	6.16	The favourable atmosphere provided by fairs and festivals should be exploited to the best advantage by Vijnan Mandirs for dissemination of scientific knowledge. Better facilities should be afforded to them to arrange exhibitions, etc., on a wider and more efficient basis.

Recommendations

Sl. No.	Ref. to Para No.	Recommendations
21	6.18	With the assistance of Social Education Organisers and Gram Sevikas and voluntary agencies, Vijnan Mandir Officers should reach the womenfolk and educate them on subjects like environmental hygiene, nutrition, child-care, house-keeping and family planning.
22	6.19	Vijnan Mandir library should make available scientific and technical knowledge of a higher type. The library should also be equipped with popular scientific literature in regional languages.
23	6.20	The Ministry should draw up a scheme to encourage production of popular scientific literature by scholars and other experts by giving them necessary financial and other assistance.
24	6.21	Easy literature dealing with rural problems such as rural housing, road-making, minor irrigation, utilisation of waste products, etc., should be made available to Vijnan Mandirs.
25	6.21	Brochures and other literature as also leaflets produced by State agencies, together with information on the results of investigations on field trials conducted by them on various rural problems should be supplied to Vijnan Mandirs.
26	6.22	With the assistance of the National Library, Sahitya Parishads and other competent agencies, a suitable bibliography of scientific books may be prepared.
27	6.24	Vijnan Mandirs may collect useful information from different sources, process it and make it intelligible to the common man. They may also serve as a liaison with the National, the Regional and the State laboratories and other research institutes and refer to them for investigation and advice such problems as cannot be solved at their level. In other words the Vijnan Mandir may function as a 'clearing house' for local scientific knowledge.
28	6.25	Educational programmes launched by Vijnan Mandirs should have a practical bias and be closely related to the daily problems of the villager.
29	6.27	Vijnan Mandirs should educate villagers about the causes of common diseases and how they could be prevented by adopting some simple and prompt measures.
30	6.29	Vijnan Mandirs should play an important part in educating villagers on 'First Aid' measures to be adopted in certain emergencies.
31	6.31	Vijnan Mandirs should take note of the work done in the field of balanced diet and nutrition by other agencies and pass it on through all available media of communication to the villager.

Recommendations

Sl. No.	Ref. to Para No.	Recommendations
32	6.32	Vijnan Mandirs should investigate the diet habits of the people and suggest suitable remedies to correct imbalances in consultation, if necessary, with other expert agencies.
33	6.33	Elementary ideas of genetics, moral and sex hygiene and child-care may be spread by Vijnan Mandirs.
34	6.34	Vijnan Mandirs may educate villagers on the need for family planning.
35	6.35	Scientific information with regard to soil improvements, conservation of soil and moisture, water application methods; improved agricultural practices, plant protection, food preservation, etc., should be spread by Vijnan Mandirs.
36	6.36	Vijnan Mandirs should enlighten farmers on methods of raising high-yielding and nutritious grasses and on methods of preservation of the nutritional value of available fodder.
37	6.36	Vijnan Mandirs should disseminate knowledge on the need for castration of over-aged and other scrub bulls and for prophylactic treatment like inoculation and other precautionary measures against diseases like rinderpest and advise on care and sanitary upkeep of livestock.
38	6.37	Vijnan Mandirs should suggest ways for the utilisation of available local resources to the best advantage.
39	6.38	Cottage industries provide Vijnan Mandirs with a first-rate opportunity to apply their minds to the problem of more efficient production at the village level and to suggest ways and means for better production through the introduction of improved tools and methods.
40	6.39	Efforts should be made to garner village 'wisdom' born of practical experience before it is irrevocably lost. Vijnan Mandirs should study the local practices and habits and, where necessary, refer them to higher institutions for proper appraisal.
41	6.40	The programme of work in Vijnan Mandirs should be elastic and adjusted to accommodate local needs. Modifications in the programme may be considered by local committees.
42	6.41	Vijnan Mandirs should act as catalytic agents to supplement, and not to supplant the work of other agencies.
43	6.41	Some order of priority has to be observed in the execution of programme. The different items included in the programme might be taken up generally in

Recommendations

Sl. Ref. to
No. Para No.

- the order in which they have been dealt with in this chapter.
- 44 6.42 Vijnan Mandirs should maintain records in respect of every village. An illustrative *pro forma* may be prescribed.
- 45 6.42 All observations made and advices given should be entered carefully in the register maintained for the purpose.
- 46 6.43 Definite lines may be prescribed for Vijnan Mandirs for evaluation of achievements without introducing rigidity into the process.
- 47 6.44 Vijnan Mandirs should be asked at the beginning of each year to send up a plan for the year in consultation with local committees. The plan, as finally approved, may be the basis for evaluating the work done by Vijnan Mandirs.
- 48 6.45 An elastic job chart may be prescribed in regard to different items. These could be supported by quarterly reports from Vijnan Mandirs.
- 49 6.45 Even in regard to intangible benefits, some action may be taken to evaluate the work. There may be an initial survey at the time a project is launched, followed by a second survey after a period of time. The change in the picture as presented by two survey reports would give some indication of the impact made by the project in question.

CHAPTER VII

EXTENSION THROUGH SERVICE

- 50 7.6 Service is essential to give a richer content to education. Kept within reasonable limits, service programmes will not only not detract from the importance or utility of Vijnan Mandirs, but positively help in the educational process.
- 51 7.7 Vijnan Mandirs may undertake simple analysis of soil and advise people in rural areas on matters like soil deficiencies, manurial recommendations and suitability of water for irrigation.
- 52 7.10 Facilities may be provided in Vijnan Mandirs for simple pathological examination. Apart from helping diagnostic work, such examination in the presence of the villager has a real educational value. Some arrangement may be made with the nearest hospital or the Primary Health Centre for supervision of the work and for interpretation of the results of pathological investigations.

Recommendations

- | Sl. No. | Ref. to Para No. | Recommendations |
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| 53 | 7.12 | Vijnan Mandirs may undertake simple examination of water to assess suitability for irrigation and consumption. |
| 54 | 7.14 | Facilities for detection of food adulteration may also be provided in Vijnan Mandirs. The sub-committee to be set up in the Planning Commission may consider what additional equipment is required for this purpose. |

CHAPTER VIII

ADMINISTRATIVE SET-UP

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| 55 | 8.2 | Vijnan Mandirs should be built up from below and not wholly from above. The Centre, apart from having sponsored the scheme, should provide the necessary financial assistance and technical guidance. But the needs of the people and their demands should shape and strengthen the structure from below. |
| 56 | 8.4 & 8.13 | Before a final pattern is evolved for the administration of Vijnan Mandirs, the scheme should be given a further and fuller trial through different methods listed. |
| 57 | 8.5 | There is need for recognition of the vital role of voluntary agencies and other institutions of the people in the implementation of a National Scheme such as Vijnan Mandirs. If Vijnan Mandirs are to be brought closer to the life of the people, full advantage will have to be taken of the work of all such voluntary agencies and institutions which have established places of their own in the life of rural community. |
| 58 | 8.7 | Rural Institutes which have already inspired confidence in the minds of the people may be invited to work Vijnan Mandirs, according to the general pattern laid down by the Government. |
| 59 | 8.8 | A survey should be made of voluntary agencies which by dint of devoted service, have created the necessary atmosphere for development work and those among them which are willing to implement the Vijnan Mandir Scheme should be given necessary facilities. These agencies should have the freedom to develop the scheme along their own lines consistent with the objectives laid down for it. They should be ready to accept inspection and audit by the States in which they are located, while responsibility for higher training and technical guidance of the personnel and over-all evaluation might remain with the Centre. |

Recommendations

Sl. No.	Ref. to Para No.	
60	8.9	In the initial stages, both recurring and non-recurring expenditure on the administration of Vijnan Mandirs may be met by the Centre. After a period of time, the Rural Institutes and other voluntary agencies administering the scheme should be asked to bear a portion of the expenditure. The balance should be shared between the Centre and the States in the same ratio as may be decided upon in respect of Vijnan Mandirs which will be integrated with selected Blocks.
61	8.15	Even after integration with selected Blocks, Vijnan Mandirs may work in close association with educational institutions.
62	8.16	Vijnan Mandirs may fall in line with the new pattern envisaged under democratic decentralisation and accept some control by Panchayat Samitis.
63	8.17	Vijnan Mandir Officers may be made <i>ex officio</i> members of the functional sub-committees at the Block and the District levels.
64	8.17	The relations between Block Development Officers and Vijnan Mandir Officers should be similar to those that subsist between the Block Development Officers and the Doctors in the Primary Health Centres.
65	8.18	For purposes of administrative control, Vijnan Mandir Officers should be placed under the State Education Department.
66	8.19	Vijnan Mandirs may function as part of a comprehensive programme of educational and training institutions and agencies like selected Blocks. There might be an internal evaluation of the scheme which will be administered by different authorities followed by an assessment by an external agency after a suitable period.
67	8.20	Establishment of Vijnan Mandirs should be suitably phased.
68	8.24	75 per cent. of the non-recurring expenditure on buildings (including staff quarters) transport, furniture, equipment, etc., should be met by the Centre and the remaining 25 per cent. by the States, subject to suitable monetary ceilings.
69	8.25	For the first three years recurring expenditure on pay and allowances, etc., should be met by the Centre. Thereafter, a formula may be negotiated for apportionment of costs between the Centre and the States.

CHAPTER IX

ORGANISATIONAL ARRANGEMENTS

Sl. No.	Ref. to Para No.	Recommendations
70	9.1	Suitability of site and accommodation for Vijnan Mandir work and other factors should be kept in the selection of sites for locating Vijnan Mandirs. The needs of backward areas should also be considered.
71	9.2	A type design for the Vijnan Mandir building should be prepared.
72	9.3	Provision of suitable residential accommodation for the staff is necessary.
73	9.5	The jurisdiction of a Vijnan Mandir should be co-terminous with the Block.
74	9.6	No restrictions need be placed on participation by Vijnan Mandirs in fairs, festivals and other occasions of importance in other Blocks of the District.
75	9.6	Vijnan Mandirs should have the freedom to establish contacts with educational institutions, Panchayat Samitis and other village groups interested in Vijnan Mandir work, etc., if they are located outside the Block.
76	9.7	Each Vijnan Mandir should have a minimum of two officers drawn from complementary subjects to supplement each other's work.
77	9.8	In selecting officers suitable women candidates may be considered for appointment to one of the posts.
78	9.9	Each Vijnan Mandir may have a laboratory assistant, trained in pathological work. Laboratory assistant should also function as museum-keeper.
79	9.10 & 9.11	To enable the village people to keep their equipment in good repair and also help in running the projectors, there is need for a mechanic close at hand. The mechanic should also function as driver.
80	9.12 & 9.13	Vijnan Mandir Officers may be provided, where necessary, with some clerical assistance. However, the facilities available in institutions with which Vijnan Mandirs may be integrated should be kept in view before separate clerical assistance is provided.
81	9.15	Vijnan Mandir Officers should be declared Drawing and Disbursing Officers and invested with powers of 'Head of Office'.

Recommendations

Sl. No. Ref. to
 Para No.

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| 82 | 9.15 | Vijnan Mandir Officers may also be invested with powers to incur expenditure on individual items up to certain limits. Provision should also be made for relaxation of these limits up to certain ceilings in respect of proposals which have the concurrence of the local committees or other specified local authorities. |
| 83 | 9.16 | The present imprest of Rs. 50 is inadequate and may be increased to Rs. 100. |
| 84 | 9.17 | Vijnan Mandir Officers may be declared as the appointing authority for Class IV staff. |
| 85 | 9.18 | Vijnan Mandir Officers may be vested with powers to impose minor penalties on Class III staff working under their control. |
| 86 | 9.22 | Vijnan Mandirs should be provided with a mobile van fitted with a generator and fixtures for transporting laboratory equipment and audio-visual aids. However, the facilities available in those institutions with which Vijnan Mandirs may be integrated should be taken into account. |
| 87 | 9.23 | A separate Advisory Committee for Vijnan Mandirs may not be necessary. But the functional sub-committees envisaged for the Panchayat Samitis and the Zila Parishads for education and allied activities should include the Vijnan Mandir Officers. |
| 88 | 9.23 | Vijnan Mandir sub-committee should be set up for the Rural Institutes and other bodies which might run the Vijnan Mandirs in future. |
| 89 | 9.25 | There should be a Standing Committee with representatives of the Centre, the States and concerned institutions to ensure uniformity in the administration of Vijnan Mandirs in accordance with the policy evolved by the Centre and also to review the progress made from time to time. |
| 90 | 9.26 | While internal assessment of the working of Vijnan Mandirs may be conducted by the agencies which will be responsible for the actual administration of Vijnan Mandirs, some external assessment may be entrusted to the Programme Evaluation Organisation of the Planning Commission. |
| 91 | 9.27 | If Vijnan Mandirs are attached to institutions like Rural Institutes, a budget with ceilings for different items may be drawn up for each Vijnan Mandir. |

CHAPTER X

RECRUITMENT AND TRAINING

Recommendations

Sl. No.	Ref. to Para No.	
92	10.2	A good Master's degree in Science should be the minimum qualification as at present for the Vijnan Mandir Officers and the Assistant Vijnan Mandir Officers.
93	10.3	The senior officer in a Vijnan Mandir should be an M.Sc., in Agriculture with research or teaching experience. The junior officer may be drawn from the physical sciences, preferably, Chemistry. Persons with some field experience and ability for writing and lecturing on popular scientific topics in the regional language may be preferred.
94	10.5	The Vijnan Mandir Officers may form part of suitable cadres in the States and their scales of pay should be such as to attract young men of talent with an aptitude for a work of this type and who can do justice to their work.
95	10.5	Non-official organisations like Rural Institutes which may be willing to work the scheme according to the pattern laid down by the Centre should be left free to adopt their own scales of pay, subject to suitable ceilings to be fixed for purposes of grants by the Centre.
96	10.9	Vijnan Mandir Officers with sufficient promise may be given preference for appointment in the extension wings of research laboratories, agricultural colleges and teachers' training colleges.
97	10.11	As far as possible, Vijnan Mandir Officers may be recruited from the teaching staff of science or agricultural colleges.
98	10.12	Sixty per cent. of the posts of Assistant Vijnan Mandir Officers should be filled by departmental candidates and the remaining 40 per cent by direct recruitment.
99	10.12	Twenty-five per cent. of the posts of Vijnan Mandir Officers may be filled by promotion of Assistant Vijnan Mandir Officers. The remaining vacancies may be apportioned between departmental candidates and direct recruits on the basis of 60 per cent. and 40 per cent. respectively.
100	10.13	For making appointments in Vijnan Mandirs, persons with a rural background may be preferred, other conditions being equal.
101	10.14	In view of the qualifications prescribed for the Vijnan Mandir Officers and their responsibilities, conferment of gazetted status on them is essential.

Recommendations

Sl. No.	Ref. to Para No.	
102	10.15	<p>The programme for the training of Vijnan Mandir Officers and Assistant Vijnan Mandir Officers may cover the following aspects:</p> <ul style="list-style-type: none"> (i) Training in extension methods, processes of communication, etc.; (ii) Training at an Orientation Training Centre; (iii) Training in museum techniques; (iv) Visits to selected Vijnan Mandirs and conducted tours; (v) Some specialised training at institutions like the Indian Agricultural Research Institute and (vi) Training in nutrition.
103	10.18	A sub-committee may be set up in the Planning Commission to consider (i) the adequacy and suitability of equipment supplied to Vijnan Mandirs; (ii) the facilities available at the existing training centres for the training of Vijnan Mandir Officers and (iii) the arrangements to be made to fill the gap.
104	10.19	The question whether the existing training institutions controlled by the Ministry of Community Development and Cooperation could be utilised for imparting training to Vijnan Mandir Officers should be examined in consultation with that Ministry.
105	10.20	Vijnan Mandir Officers should receive training in the science of human relations and human values in the institutions imparting training to Social Education Organisers.
106	10.21	Refresher courses for the staff already in position should be held at regular intervals to bring them into touch with the latest developments.
107	10.22	Even after the reorganised set-up suggested by the Committee gets stabilised, the practice of holding Annual Conference of Vijnan Mandir Officers should continue.
108	10.22	At suitable intervals, the Vijnan Mandir Officers should be deputed to attend special refresher courses for about a month or two in an appropriate institution in the State where they are working.
109	10.23	Those who have completed three years of service may be made quasi-permanent.

CULTURAL WING

Recommendations

Sl.	Ref. to	
110	11.5	Vijnan Mandirs should concentrate on dissemination of scientific knowledge. To add a cultural wing now to Vijnan Mandirs may involve a fundamental change in the basic concept of the scheme, not justified by the circumstances.



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NOTE ON FINANCIAL IMPLICATIONS

The following recommendations made by the Committee have financial implications.

1. There is need to provide clerical assistance to Vijñan Mandir Officers, where necessary, to relieve them of routine office work and enable them to devote more time for the specialised work for which they have been appointed.

2. As Officers in Vijnan Mandirs would be specialists in Agriculture and Chemistry, there is need for the appointment of a laboratory assistant in lieu of a laboratory attendant.

3. To enable rural people to keep their equipment in good repair, there is need for a mechanic close at hand. The mechanic could also function as the driver for the mobile van. The workshop may be rigged up at a cost not exceeding Rs. 2,000.

4. If Vijnan Mandirs are to function on an efficient basis, it is necessary to provide them with a mobile van fitted with a generator and fixtures for transporting laboratory equipment and audio-visual aids.

5. There is need for a type design for the Vijnan Mandir building. A type design may be prepared by the Centre and circulated to State Governments.

6. Provision of suitable residential accommodation with minimum facilities will help in attracting the right type of personnel and entice them to continue to work in rural areas.

Financial Effect

Recurring

Sl. No.	Post	Scale of pay	Average cost/ pay	D.A.	Interim relief	Total per month	Annual expenditure
			Rs.	Rs.	Rs.	Rs.	Rs.
1	Lower Division Clerk	Rs. 60—3—81—4— 125—5—130.	90	50	5	145	1,740
2	Mechanic-cum-driver	Rs. 60—5/2—75	70	50	5	125	1,500
3	Difference of pay between Laboratory Assistant and Labo- ratory Attendant	Rs. 60—4—120—5 —150 (Laboratory Assistant Junior). Rs. 35—1—40—2— 60 (Laboratory Attendant).	48	10	..	58	696
						Total Rs.	3,936

Non-recurring

		Rs.	Rs.
A. Cost of Vijnan Mandir building (area 1,300 sq. ft.)	..	..	18,000
B. Cost of residential accommodation for staff:—			
For Vijnan Mandir Officer ..	1	7,600	
(Area 1,100 sq. ft.)			
For Assistant Vijnan Mandir Officer (Area 770 sq. ft.)	1	5,400	
For Laboratory Assistant ..	1	4,200	
(Area 600 sq. ft.)			
For Lower Division Clerk ..	1	4,200	
(Area 600 sq. ft.)			
For mechanic-cum-driver ..	1	4,200	
(Area 600 sq. ft.)			
For peon-cum-watchman ..	1	2,400	
(Area 345 sq. ft.)			
Cost of buildings ..		28,000	
Provision for electricity @ 12½% of the cost.		3,500	
Provision for water @ 12½% of the cost ..		3,500	
			35,000
C. Cost of mobile van			20,000
D. Cost of workshop			2,000
			<hr/>
Total (A+B+C+D) ..			75,000

Total recurring—Rs. 3,936 or Rs. 3,900 (in round figures). } per
 Total non-recurring—Rs. 75,000. } Vijnan Mandir.

Allocation of Expenditure

1. 75 per cent. of the non-recurring expenditure on buildings (including staff quarters), transport, furniture, equipment, etc., might be met by the Centre and the remaining 25 per cent. by the States, subject to suitable monetary ceilings.

Centre's share 75 per cent. of Rs. 75,000—Rs. 56,250.

State's share, 25 per cent. of Rs. 75,000—Rs. 18,750.

2. As regards recurring expenditure on pay and allowances, etc., for the first three years, the entire liability might be met by the Centre. The period of three years may be reckoned from the date of establishment in respect of new Vijnan Mandirs and from the date the reorganised set-up is implemented in respect of Vijnan Mandirs already established.

3. Thereafter, a formula may be arrived at by negotiation with States for apportionment of recurring expenditure between the Centre and the States.

4. In respect of Vijnan Mandirs to be integrated with Rural Institutes and voluntary agencies, both recurring and non-recurring may be met by the Centre in the initial stages. After a period of time, the Rural Institutes and other agencies administering the scheme may be asked to bear a portion of the expenditure. The balance may be shared between the Centre and the States in the same ratio as may be decided upon in respect of Vijnan Mandirs which will be integrated with selected Blocks.

NOTE : The financial estimate worked out above is in addition to the recurring and non-recurring expenditure that is now being incurred on the basis of existing arrangements.