

**TOWARDS IMPROVED
LOCAL LEVEL PLANNING
FOR RURAL DEVELOPMENT**

—Lessons from some Experience



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PREFACE

Success stories in rural development are few. Wherever they have occurred, it is necessary to document the experience, analyse the factors that have contributed to the success and consider their relevance to the country as a whole in terms of their replicability. This approach is likely to yield valuable insights for evolving a model for rural development for the country.

The present volume is a documentation of three successful rural development experiences—Sukhomajri and Dasholi in different parts of the Himalayan region and Kundrakudi in Tamil Nadu. Each of the three experiences analysed here has its own unique features. Some commonalities are: the availability of extraordinary local leadership, the close and continuous involvement of a band of dedicated technicians and social workers and above all a highly motivated populace—a combination that rarely exist. These three experiences are examples of the bottom-up approach wherein the rural people plan their own development, albeit with the help of governmental and nongovernmental agencies. For purposes of planning, they have founded an institutional mechanism suited to their local circumstances : in Kundrakudi, it is the Village Planning Forum (VPF), in Sukhomajri it is the Water Users Association (WUA) and in Dasholi it is the Gram Swarajya Mandal (DGSM).

In all the instances documented here, the Receiving Mechanism at the local level guided by extraordinary local leadership has performed a commendable role in educating the people, motivating them and in enlisting their participation in the development process with a sense of responsibility.

While the factors contributing to the success of these experiments have been brought out clearly, the problem, however, remains as to how we can replicate such experiences all over in a vast country like India with varying resources endowments and institutional and human capabilities.

Dr. K.V. Sundaram, Joint Adviser, and Shri K.V. Palanidurai, Senior Research Officer, Planning Commission, conducted the study on Kundrakudi while Dr. (Mrs) Kamala Choudhary and a team constituting a sub-committee documented the Sukhomajri and Dasholi experience. It is hoped that a wider dissemination of these experiences through this publication would be useful to governmental and non-governmental agencies engaged in rural development activities.

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I CASE STUDY OF KUNDRAKUDI

CHAPETER 1—Introduction:

1.1 "This is what I should like for all other villages", was the observation made by our late Prime Minister, Smt. Indira Gandhi after going through a report under the caption "Gains at the Grass Roots" published in "The Hindu" dated, 9th September, 1984. The report related to the accomplishments in rural development made by the Village Planning Forum (VPF) in Kundrakudi, an interior village in Tamil Nadu State.

1.2 The Planning Commission received a note from the P.M.'s Secretariat with the above observation on the Kundrakudi Experiment for further possible action. The present study is in pursuance of this directive.

The objectives of the present study are:

1. To analyse the Kundrakudi experience as afl example of local-level planning for rural development; and
2. To fry to determine in what ways the Kundrakudi development experience—or some aspects of it-is replicable.

1.3 Dr. K.V. Sundaram, Joint Adviser (MLP) and Shri K.V. Palanidurai, Senior Research Officer, Planning Commission (hereinafter referred to as *Study Team* in this report) visited Kundrakudi village during February 13—16, 1985 and discussed with the founding figures of the Village Planning Forum, which is the cornerstone of this rural development strategy. These founding figures, included a social and religious leader, popularly known as 'Adigalar' and a group of dedicated scientists from Central Electro Chemical Research Institute, located in proximity to Kundrakudi. The Study Team also visited the significant development works undertaken in the area viz. the industrial units sponsored by the Village Planning Forum, the Community Wells, the Mulberry garden, orchard etc. and held discussions with a wide spectrum of community—farmers, industrial workers and women as well as various officials and non-officials.

1.4 The present report is based on the information collected *J* from various sources, including the Village Planning Forum and discussions with the persons mentioned above. The report is presented under the following five Chapters:

1. The Background and genesis;
2. The institutional arrangements and the planning process
3. Development schemes and their relevance;
4. Public participation.
5. Transferability and Replicability of the Kundrakudi experience.

1.5 The Background and Genesis

Kundrakudi is a typical south Indian Village located in a drought prone part of the Pasumpon Muthuramalingam district in Tamil Nadu, which is one of the recently carved

administrative districts after the trifurcation of Ramanathapuram district. It is a medium-sized village with a population of 2700 in 1981 and local land area of about 820 hectares. Nearly 200 hectares of land are cultivated. Forests account for 150 hectares. The remaining 58% of the area consists of cultivable waste land and poramboke land. Bulk of the villagers are agriculturists and there are nearly 514 land owners, a sizeable number of whom (89%) belong to the category of small and marginal farmers. The main source of irrigation is tanks and there are 19 such tanks providing irrigation facilities to about one-fifth of the cultivated area. Bore wells supplement the irrigation facilities. 148 hectares are classified as wet land and 345 hectares fall under dry land. The Village is situated in Kallal Panchayat Union (block), which is covered by the Drought Prone Area Programme (DPAP). The nearest town is Karaikudi, about 17 kilometers from the village. The Central Electrochemical Research Institute (CECRI), a National Laboratory under the CSIR is located in Karaikudi.

1.6 Temples and holy tanks are part of a typical South Indian village and Kundrakudi is no exception to these. The village is also the seat of a 500-year old religious institution called "Thiruvannanialai Adheenam Kundrakudi Mutt". The main aim of this Adheenam is to preach and inculcate the Saiva Sidhanta Philosophy of the Hindu religion among the people.

1.7 The Mutt is presently headed by His Holiness Srilasri Deivasigamani Arunachala Desiga Paramacharya Swamigal (popularly known as Thavatbiru Kundrakudi Adigalar). Sri Adigalar is a great scholar and a powerful orator and above all a religious reformer with progressive views. He is a follower of Gandhiji, an admirer of socialism and a staunch supporter of the cooperative movement. He has widely travelled both in India and abroad and visited the Soviet Union, China, Japan, SriLanka and Malaysia. The rural development movement around Kundrakudi is closely inter-twined with the social and spiritual activities of the Mutt.

1.8 Sri Adigalar was deeply moved by the poverty and 'unemployment among the people living in Kundrakudi, and the nearby villages. He realised that preaching spiritualism to semi-starved citizens would not help propagate the objectives of the religious institution of which he is the head. Being a firm believer in Gandhiji's ideals, he wanted the village to be self-sufficient at least in foodgrains and other essential items. His visits to some foreign countries, particularly the Soviet Union, influenced his thinking and ideas on the socio-economic upliftment of the villagers. He became convinced that organising the villagers for collective self-reliance and utilising the local natural resources of the area in the most optimal manner constituted the essential strategy of rural development. In order to give shape to these ideas, he launched a Village Planning Forum in Kundrakudi on 2nd October 1977, the birthday of Gandhiji. The main objective of the Village Planning Forum, as envisaged by him, is the achievement of self-sufficiency and eradication of unemployment in the village. In this task, he decided to bring together the three essential actors in the development drama, viz., The Government, the financiers (represented by the State Bank of India) and a third party planner (represented by the scientists of CECRI) for mutual interaction/cooperation in the development process. The idea was to primarily revolve around the government development programmes, modify them according to local requirements and to facilitate their implementation in a successful way by bringing about access to capital (provided through the commercial banks) and the scientific inputs and knowhow (provided by CECRI, the third party planner).

1.9 The main aims of the village-planning forum, as stated. in its constitution, are quite comprehensive, consisting of some 15 items as follows :—

1. To uplift the economically weaker sections of the society.
2. To improve the skills of the local artisans.
3. To impart training to the local people for self-employment.
4. To train the local people for leadership through formation of cooperative society, task assignment, participation in discussions etc.
5. To utilise the available resources in the village for the development.
6. To improve the awareness of villagers and to educate them in better health and family welfare measures, sanitation and clean environment.
7. To introduce modern methods of agriculture.
8. To encourage cooperative movements and to train villagers for different functions in cooperative society like Directors, Presidents, Vice-Presidents.
9. To improve irrigation facilities.
10. To improve cattle wealth.
11. To bring the entire wasteland under cultivation.
12. To create an atmosphere conducive to formation of integrated society free from race, religious and caste-differences.
13. To take Science and Technology to the village.
14. To improve the academic performance of students in-villages.
15. To make the villages self-sufficient in all aspects in paddy, vegetables, milk, meat, fish, etc.

1.10 The Planning Forum is broad-based in composition with different interests represented in it. Sri Adigalar is the coordinator of the Planning Forum. The following are the-other members:

1. Selected village citizens (including women).
2. Presidents, Vice-Presidents and Secretaries of the various, cooperative societies.
3. Local industrial interests.
4. Representatives of commercial and cooperative banks.
5. Panchayat Union Officials.
6. Scientists from CECRI, Karaikudi.
7. Officials of the Agricultural Department.
8. Officials of the Animal Husbandry Department.
9. Officials of Agricultural Engineering Department.
10. Officials of Education Department.
11. Officials of Electricity Board.
12. General Manager of District Industries Centre, Ramnad.
13. Officials of Khadi and Village Industries.
14. Village officials.

CHAPTER 2—The Institutional Arrangements and the Planning Process

2.1 It should be noted that the Village Planning Forum is not a formally constituted organisation such as a Registered Society, functioning under specified bye-laws and rules. On the other hand, it is quite an informal type of organisation functioning with considerable flexibility, with its own code of conduct and procedures for functioning. On every issue discussed in the forum, "consensus", seems to govern the mode of decision-making. It meets once in a month (every 4th Saturday) to make an assessment of the progress of various decisions taken in its previous meeting and to decide on the follow up actions.

2.2 For the management of development schemes, the Village Planning Forum has successfully adopted the cooperative form of organisation. A number of projects in and around Kundrakudi village sponsored by the Village Planning Forum are run on cooperative lines. The Cooperative Societies Act of Tamil Nadu State governs the functioning of these institutions.

2.3 The Kundrakudi Village Planning Forum formulated the first five-year plan covering the period 1977-82 for the two villages Kundrakudi and Nemam. The monthly meeting of the Forum is an important one in which decisions are taken regarding development schemes that may be taken up in the village. The approach is to assess the potentials for development in various sectors such as agriculture, animal husbandry, village and small industries, irrigation etc. Small Working Groups set up by the Village Planning Forum go into the aspects of development potential and feasibility in each sector. The Government officials present in the meeting explain to the villagers the various development schemes included in the Government Plans. Villagers, in turn, express their views and the scope for implementing the schemes in selected pockets. Wherever financial institutions have a role to play, the representatives of the financial institutions (nationalised Banks and Cooperative Banks) explain the schemes implemented by them—credit linked schemes as in IRDP and DPAP and express their opinion as to the feasibility of funding any particular scheme mooted by the VPF. The scientists of CECRI also take active part in the Village Planning Forum meetings and they explain to the members the potential for development in various sectors of activity and the scientific way of formulating relevant projects. Thus the project ideas get a concrete shape in the Village Planning Forum meetings. These ideas are then translated into location-specific schemes indicating the financial requirements, the sources of funding, the organisational arrangements etc. The monthly meetings of the Planning Forum also provide an opportunity to review the achievements in the previous month under various sectors of development and to decide on necessary follow-up action, wherever there are slippages. The local perception of problems as articulated by the villagers, the technical feasibility for development as assessed by the government functionaries of technical departments and the follow-up actions pursued fit in time-to-time helps in the smooth and successful implementation of the schemes. The personal charisma and influence of Shri Adigalar is an important factor in guiding and conducting the deliberations of the meetings of the Village Planning Forum. Generally, the decisions of the Village Planning Forum are accepted by all the villagers. The active participation of the villagers, some of whom are unlettered, is an important feature in the activities of the VPF. In the first five-year plan, the Village Planning Forum had set a target of improving the productivity of paddy from 1 tonne to 2 tonnes per acre through adoption of scientific methods of cultivation. Similarly, they had taken definite decisions for improving irrigation facilities through digging of community wells and utilising the cultivable waste

land in the village. A detailed list of projects sponsored by the Village Planning Forum and implemented under the various development schemes of the Government, bulk of them under the Drought Prone Area Programme, is given in Annexure-I. A notable feature of the Village Planning Forum is its role in channelising the benefits of Government Development Programmes to the deserving beneficiaries without any leakage. Whether it is a community well under DPAP or distribution of milch cattle or a sheep unit under IRDP, the full benefits of the schemes (loan and subsidy) have reached the target groups, for whom the schemes are intended.

2.4 Kundrakudi's experience shows the nature and dimension of the development administration problem in the rural areas. In the first place, the choice of the peasants below the poverty line to be helped is not an easy task. It requires careful survey of the village and considerable verification of facts. When this is done by a body of villagers themselves with no secrecy behind it, then no mistakes are made and no undue favours are shown to anyone in particular. But more important than this is that the officials entrusted with the administration of any rural development scheme do their job both willingly and without succumbing to blandishments and pressures. This aspect of the problem has been very deftly handled by the VPF. The fact that whoever has been posted to the Kundrakudi area (irrespective of his past) has served his term with a clean record speaks volumes for the efficacy of the local leadership provided by the VPF in Kundrakudi. The simple fact is that; development objectives cannot be reached or targets hit unless the way it is to be done is clearly chalked out and followed up through the efficient use of appropriate instruments. Indeed, the role of the Village Planning Forum in Kundrakudi must be understood in the light of these observations.

2.5 Another point that struck the study team was that the Village Planning Forum was keenly aware of the fact that the broadening of economic opportunities alone would make it possible to bring about the development of the poorer sections of the community. With this awareness, they have sought to find the combination of opportunities that would enable different groups among the poor to rise above poverty. This thinking is fully reflected in the industrial development programme of the Village Planning Forum. The project formulation at the village level is totally governed by a meticulous manpower planning concept. During our discussions with the founding figures of the VPF, we could see that while taking decisions as to choice of development schemes they were always carrying at the back of their minds the concern for the employment of every unemployed youth in the village. Thus, while planning for any development activity, simultaneous attempts have been made to fit the unemployed youth in the village in suitable capacities. Thus, the employment plan automatically gets meshed with the development plan for the village. There is no elaborate machinery for effecting the manpower budgeting here. It happens quite autonomously and unobtrusively, with no prodding from anyone or contrivance of any kind. The result is that every village enterprise is manned by local youth who are well motivated and conscientised. Thus, what we find in the local planning experiment in Kundrakudi is a people's approach rather than a project approach, in which the people are fitted into the project and not vice-versa. This is an aspect of *humanised development*, which we have to note and which, in no small measure, has contributed to the success of the development projects undertaken in Kundrakudi.

CHAPTER 3—Development Schemes and their Relevance

3.1 The purpose of this Chapter is not to provide a routine narration of all on-going schemes in the various sectors of activity. As is well known, the various departments of State Governments are implementing numerous schemes in every part of the country. Unfortunately, these have tended to acquire a certain uniformity because of Central/State direction and guidelines provided by the State/Central Governments. Although these guidelines provide for flexibility of operation with reference to area peculiarities and specificities, the normal government machinery at the lower levels does not exercise this prerogative for various reasons, which we may not go into. It is only when an enlightened local body is present, which is in a position to intervene and can articulate the local area specificities and needs, that these considerations enter explicitly into the formulation of plan schemes and appropriate modifications in these schemes are made to suit local resources, local peculiarities and local needs of the village.

3.2 Part of the success of the Kundrakudi experiment may be ascribed to the fact that the Village Planning Forum was able to exercise some thinking as to the choice of schemes relevant to the village area and in this way rendered the government schemes both area—specific and people-specific. It is proposed to discuss here only a few of those schemes which may be considered significant from the point of view of their 'trigger potential' for area development. The emphasis in this discussion is not so much on the physical details of a particular scheme, as on its social dynamics, i.e. the part played by the people in its formulation and implementation.

Agriculture and land-based activities Orchard

3.3 The village has about 325 hectares of wasteland and poromboke land. Utilisation of these wastelands has been recognised as a priority item in the development agenda for Kundrakudi. The Village Planning Forum conceived the idea of developing a small orchard by utilising poromboke lands mainly to demonstrate to the farmers that the area is suitable for horticultural crops. Accordingly, an area of 45 acres was identified in Nemam village. The development of the land was undertaken by the Horticulture Department and one bore-well and four open wells were constructed to provide irrigation facilities. Mango, Guava, Sapota, Pomegranate, and lime were planted. Most of these varieties have started yielding from 1981-82. It is also proposed to bring an additional area of 22 acres under the orchard. Nearly Rs.16 -5 lakhs have been spent on the orchard under DPAP.

3.4 The orchard is not limited to growing fruit plants only. The land here is also being used for nurseries for producing seeds/seedlings for vegetables, pulses, ornamental plants, flowers and social forestry in addition to fruit trees. The following practices may be noted:

1. The space available in between the plants in the orchard are being utilised for raising vegetables such as pumpkin, Ash Gourd, Bitter Gourd etc. and thereby the seeds are being extracted for the distribution to the ryots;
2. In the farm, pulses like black gram, horse gram and Cowpea are also sown for seed purposes;
3. All ornamental plants such as Rose, Jasmine Neerium Bogainvilla, and Tecoma are being air-layered for distribution among the ryots of this locality;

4. All economically important plants such as tamarind, Eucalyptus, silk cotton, Jumbulona, Subabul, Neem etc. are being raised and distributed for social forestry production;

In addition, Citrus, Guava layers have also been: distributed among the ryots.

3.5 The orchard has provided employment opportunities for about 40 women and 7 men. The fruits and vegetables produced in the orchard are sold at reasonable prices in the nearby villages.

3.6 The orchard seems to have already had some demonstration effect in the area. A few wealthy absentee landlords owning wastelands in the area have now fenced their area (fearing encroachment) and planted some tree crops. We saw one instance of this kind during our visit. We were also informed that the orchard has already genuinely caught the imagination of several farmers in the area who are beginning to think about similar ventures on their own lands. The present moment appears to be ripe for a vigorous extension activity based on the orchard experiment to be launched so as to promote the cultivation of the suitable tree crops in the area on an extensive scale. Two aspects that would need governmental assistance in this regard are (a) some support for the construction of bore wells in private lands and (b) some extended support for horticultural development, specially to the small farmers till the fruit trees start yielding on a sustainable basis. These components which are already available in several government programmes have to be brought together in the form of a package to stimulate this effort.

3.7 Having brought the orchard into existence, the extension activity must now get prominence. The VPF should make an all-out effort to see that the message reaches all farmers in the area in a massive bid aimed at wasteland development. This needs a "professional approach", as the farmers must acquire knowledge and training regarding the technical, organisational and financial aspects of wasteland development. The VPF should take up this activity in the next phase so as to motivate and educate the farmers in the area using various communication methods.

3.8 During our visit, we saw extensive tracts of barren and degraded wasteland in the area. A sizeable portion of this land must be government land, probably with the forest department. A concerted effort should be made to profitably use this land. Such lands on which there are no plans for afforestation in the next twenty years or so, may be given on lease to registered cooperatives of landless labourers and small and marginal farmers who live around such lands (for a period ranging from .20—25 years) so that they may be put to appropriate economic use. The Government of Gujarat has a scheme like this for the development of the wasteland*. This is well-worth emulation. The VPF in Kundrakudi can play a dynamic role in the transformation of wastelands in the area. This should be systematically pursued. The following steps are suggested for this purpose:

- (a) Organising the landless labourers, small and marginal farmers into cooperatives;

* On 16-6-1982, the Government of Gujarat passed a resolution for giving such land as has been classified as forest land and is barren and deforested which cannot be afforested by the Forest Department, to responsible bodies like educational institutions, registered societies, public trusts, and industrial establishments for afforestation. On 27-9-1984, this was replaced by another resolution which stated that forest wasteland would be leased only to registered cooperatives of landless labourers and small and marginal farmers.

- (b) Assisting the cooperatives in formulating suitable programmes for the use of wastelands;
- (c) Finding through consensus, solutions to the problems in implementing the identified programmes and the running of the cooperative;
- (d) Procuring Financial assistance from government and financial institutions; and
- (e) Assisting in the marketing of the produce raised on the wastelands.

The above tasks involve a long and arduous process, certainly quite challenging for any organisation. It is worth experimenting by the VPF and if it succeeds, a model of rural development may emerge for the utilisation of wastelands in the country.

3.9 Community wells

For an area like Kundrakudi with predominance of small and marginal farmers imbued with cooperative spirit, a programme like the community wells seems to hold great promise. Each community well has an average irrigated area of not less than 25 acres and may irrigate 15 to 25 acres depending on the yield of the well. So far 15 community wells have been constructed under the drought prone area programme. Such community wells are expected to stabilise the irrigation facilities and result in increased agricultural productivity. There are also the other type of community wells (the dug-cum-bore wells) [which directly feed water to the field channels in the neighbouring lands. These are directly related to their beneficiaries in the command area. The community well is a new experiment. As several beneficiaries are involved, some proper and effective arrangements for operating and maintaining them is necessary.

3.10 The Village Planning Forum has proposed to organise a cooperative society (Green Farm Cooperative) for this purpose. This society proposes to ensure equitable distribution of water to the farmers in the village and to make arrangements for the operation of the community wells and their proper maintenance. The details are being worked out. Not much time has elapsed after the construction of these community wells to enable us to evaluate this experiment at this stage. If this experimentation, by and large, succeeds, it may provide a basis for policy planning in future.

3.11 Sericulture

The sericulture programme is yet another innovative experiment being tried. Like other innovative schemes in the village, this is also in an initial and experimental stage. But the idea has elements of novelty about it and has great potentials to transform the lives of people below the poverty line.

3.12 A model mulberry plantation has been raised over an area of 9 acres in Kundrakudi village in 1983. About 7 -5 acres have been brought under mulberry cultivation. Kundrakudi and nearby villages have scope for undertaking sericulture. It is proposed to supply mulberry seed-cuttings to the farmers from the model plantation and also train them in silk-worm rearing. Sericulture is a labour intensive activity and this will help create employment opportunities and improve the income of the villagers. The sericulture department has proposed a new "silk hamlet" project for implementing the sericulture

programme *for the benefit of landless agricultural labourers*. The details of the proposed scheme are given below.

3.13 It was noted earlier that vast stretches of cultivable land lie vacant around the Kundrakudi area. Even where ground water potential has been located, the farmers of the village take to cultivation of dry crops only because of financial constraints. As a result, a large number of landless agricultural labourers remain idle for most of the year. If only the scarce resources of land and ground water are harnessed and the manpower utilised properly for raising mulberry, the rural economy could be revitalised and employment potential increased.

3.14 Since a family consisting of five members can be provided with regular employment throughout the year in one acre of mulberry cultivation combined with silkworm rearing, it is proposed to create a "Silk Hamlet" for generating employment to about 100 harijan families by making use of Government promboke lands and by providing assured irrigation facilities by sinking bore wells and by providing other infrastructural facilities that are required for silkworm rearing.

3.15 The scheme requires 125 acres of Government promboke land with adequate ground water potential. The land necessary for the purpose has already been selected in Kallal Block. Ten acres of land will be set apart for creating necessary sericulture infrastructural facilities such as mulberry nurseries, chawkie rearing centres and sericulture service-cum-extension centre etc.

3.16 The scheme comprises of land levelling operations such as clearance, levelling, reclamation and contour bunding. The planting and maintenance of mulberry plantation will be done by the staff and harijans will be trained who can start silk-worm rearing under this scheme. Chawkie rearing sheds have to be constructed at the hamlet. Adequate number of tubewells have to be sunk for providing assured irrigation throughout the year.

3.17 The landless harijan families who have an aptitude for sericulture will "be enrolled as members of the Silk Co-operative Society and will be leased out mulberry gardens. They have to maintain these gardens according to the standards prescribed by the department. They will obtain the water from the bore wells already sunk and will also obtain various timely assistance of inputs from the department. The income for the beneficiary has been worked out to approximate Rs.500 per month excluding the lease and rent charges and other expenditure on cultural operations. The society will also purchase the cocoons after making spot payment, convert them into raw silk and twisted silk. The profit earned by the society will be shared by the members according to the bye-laws of the society and will' also provide employment to landless labourers, mostly women.

3.18 The total cost of the scheme works out to Rs.41.40 lakhs. The planting operations and execution of civil works envisaged in the scheme are expected to take two years. The farm is expected to come to full yielding stage only in the third year. The staff will be continued for three years after establishing the farm. Once the hamlet is established, there would be all round development of sericulture in other villages. Bore well scheme is fast picking up in this area and there is vast scope for expansion of area under mulberry. The services of the Government functionaries posted for the hamlet can also be utilised for future expansion of the industry in the area.

The hamlet will be organised and maintained as Departmental Unit for first three years under DPAP. During the first year, it is proposed to clear 100 acres and complete land shaping in 50 acres and to plant 20 acres under mulberry.

The 'silk hamlet' is an interesting 'pilot project'. Its success will depend on the proper design of management procedures and careful planning of extension activity in the surrounding villages.

3.19 Schemes under the non-farm sector

It is our view that the "carrying capacity" of traditional agriculture with livestock rearing practiced in Kundrakudi has not reached its limits of growth. Undoubtedly, the present productivity levels in agriculture can be raised further and also there are more waste lands in the villages that can be brought under appropriate use. But there are constraints of finding the necessary infrastructure inputs and skills needed for their development. It is in this context that the question of labour absorption in some non-farm sector activities have to be explored. This also implies structural transformation of society.

It is gratifying to note that the VPF has already promoted a few important activities in the secondary sector. These are, by and large, employment intensive and tailored to the skills available in the area. There are three industries coming under this category which are engaged in Cashew processing, production of matches and palmyra products.

3.20 Cashew Processing

Although raw cashewnut is produced in the area, the produce used to be formerly purchased by merchants and sent to places like, Panruti in South Arcot district for processing. Realising the employment potential of cashew processing and the need to internalise the development process to reap the full benefits, the forum decided to set up a unit in Kundrakudi and brought two families from outside who were experts in cashew processing to impart training to the local people. It is organised along cooperative lines with a membership of 382. The unit was, started in March, 1979. The unit purchases raw cashewnuts which are produced in the nearby villages and also from Forest Department. It employs 35 workers of whom 28 are women. A branch of this unit has also been opened in a nearby village which provides employment to another 40 women. Under the IRDP training scheme, about 80 women were trained in the unit for six months. The unit has also set up a Redoxide Unit (Varnish) which utilises the shell of cashewnut and produces the cashewnut shell oil. The unit has processed more than Rs.5 lakhs worth of cashewnut in 1983. There is also plan to start another cashewnut processing unit. Such expansion must be planned cautiously taking into account the market potential, the price situation and the wage rates for labour.

3.21 The Match Industry and the Potassium Chlorate Manufacturing Unit

The Match unit is an employment-intensive industry and the Potassium Chlorate Manufacturing Unit has grown out of the demand generated by the former industry. The Match Unit has been functioning since 1976. In the interregnum, its working was seriously affected by the scarcity and high cost of its essential raw material—the Potassium Chlorate. Which the local manufacture of the raw material, small match units located in a number of centres in and around Kundrakudi have been revived and stabilised. The Potassium Chlorate Industry was conceived in 1981. The process developed by the

Scientists of CECRI has been adopted and the unit commenced production in March, 1984. Its present capacity is 320 tons and it employs 35 persons. Since the demand for the product is great, it is proposed to expand the capacity to 800 tons per annum.

Khadi and Village Industry

3.22 Palmyra products

The weaving of baskets and making of various other handicrafts have been developed. It is both a local raw material based as well as an employment-intensive industry. We also saw that handpounding of rice by women is being done in the village on a small scale. It employs about 12 persons of which 10 are women. Units for manufacture of bullock cart, edible oil, chalk crayons, white phenyl have also been established in the Kundrakudi village.

3.23 Nehruji Polythene Bags Industrial Cooperative Society

This unit was established in 1966 with the main objective of manufacturing cardboard bags. However, with the advent of the Planning Forum, the Unit was converted into a Unit for manufacturing polythene bags in 1978. The State Bank of India has extended financial assistance to the Unit. The Unit has two extruder machines with a total capacity of 20 kg. per hour. The Unit employs nearly 43 persons of whom 40 are women. Polythene bags are supplied to Forest Department (for raising seedlings).

3.24 Scope for further industrialisation

Having identified some basic path-finding activities in the secondary sector in the Kundrakudi area, the VPF is looking for more industrial units that might be established in other villages in this area. As may be seen, the available project options for industrialisation seem to be limited in this area. There are constraints both in regard to natural endowments as well as entrepreneurship. It was understood during our discussions with the Village Planning Forum that they have drawn up a list of about 18 industrial units to be set up in the second phase of rural development in a number of villages around Kundrakudi. A perusal of the 18 industries (list enclosed in Annexure-11) shows that excepting for the cashewnut processing industry which will be a local raw material based industry, all other industries will be in the nature of demand-based industries with employment potential. For some of them, it was informed that the Forum had already identified the personnel also possessing the necessary skills.

3.25 The next phase of development

As mentioned earlier, presently the Village Planning Forum's activities are confined to two villages only. Ultimately it is proposed to extend the planning activities to 28 villages. When this happens, planning process is bound to become more complicated. Planning activities will have to be conceived at the area level and at the individual village level. Also necessary linkages have to be planned for. It remains to be seen how the Planning Forum will re-orient itself to meet these Challenges.

CHAPTER 4—Public Participation

4.1 Our visit to Kundrakudi and the interaction with various people afforded us a lot of useful insights into rural institutions and people's participation in their own development. Sometimes, people's participation is described as an "ideology without a methodology". But in the case of Kundrakudi, it is to be noted that cooperative development and community organisation through VPF constitute the two aspects of its methodology. With these two instruments, it has been possible to reinforce the productivity, welfare and quality of life objectives in the rural development process. In this Chapter, we may examine the methodological aspects of public participation in greater depth and draw some lessons.

4.2 In Kundrakudi, people's participation seems to have proceeded primarily from the cooperative organisation. The cooperative has been the precursor of the Village Planning Forum. Indeed, the gains from joint action seem to have provided the basic rationale for encouraging the establishment of the Village Planning Forum.

4.3 During our visits, questions were repeatedly put in order to ferret out, what may be considered as the most promising leads in terms of understanding the dynamics of cooperative development, particularly because the "cooperative way" appears to be the preferred alternative for organising the villagers in various economic activities.

4.4 In the first place, we noted that the cooperatives had been organised for almost every enterprise in the village, which has resulted from planned development. This is partly because, the people of the village are, by and large, poor and everything has to be organised through collective action only. The spiritual leader of the village, who is associated with every activity, has been able to inculcate a sense of discipline and a feeling of reverence among the people for all public sector activities undertaken in the village aimed at the well-being of the villagers. They have been told that all cooperative enterprises are to be looked upon as a "trust" handed over to them, which they should manage wisely and carefully. This message, with the trusteeship concept behind it, has gone a long way in ensuring, that the institutions that have been built up are managed with responsibility and accountability.

4.5 Cooperativisation has been promoted wherever feasible in order to increase the socialisation of wealth and to bring about a wider distribution of benefits. A significant instance that may be quoted is the action taken by the Village Planning Forum in regard to the administration of fishing rights. The fishing rights in a big tank in the village used to be formerly auctioned, a practice around which some vested interests had grown resulting in the concentration of benefits to a few persons only. The VPF decided to end the practice and took a unanimous decision to establish a 'fishermen cooperative' in the village and to grant the fishing rights to them. Thus almost every important activity in the village has come into the cooperative fold.

4.6 About ten cooperatives, are now functioning in Kundrakudi. It is not the fact of setting up the cooperatives or their number that are important issues. It is the way they function and contribute to development that really matters. In this, as in many other spheres of joint activity, it is the persons who matter. In Kundrakudi, the persons who man the cooperatives are highly motivated individuals, They have been trained primarily on the job and have been accountable to the VPF. The great achievement of Kundrakudi seems to be

this development of local capability among the people to manage, with responsibility their own affairs for local development

4.7 The cooperative institutions of the village are not hierarchical structures with a patron-client relationship. On the other hand, these are effective horizontal grouping of small farmers and labourers, operating on the basis of direct participation and serving well-defined common interests. It is well known that only such institutions can ensure loyalty amongst its members and efficiency in the overall performance. These are some of the unique factors in the structure and functioning of the cooperatives that have contributed to their success. Obviously, the cooperative experience here sheds a modicum of light on the alternative ways of organising the rural community for development. Whether such factors can be replicated in all situations is a moot question.

4.8 The other institutional factor which has contributed to success in Kundrakudi development is the Village Planning Forum, which is the principal vehicle for public participation. With a membership of 100 persons (about 4% of the population of the village), it is a mini village community that decides each and every action by the community. The General Body of this forum meets at least twice in a year, while its Executive Committee consisting of 7 members meets almost every month. The attendance in these meetings is between 60 to 80 per cent. The table in the Annexure III shows the level of attendance in the various meetings during the last three years. This level of attendance itself is an indicator of the extent of interest evinced by the people in their own development and hence the degree of public participation. Apart from various interests represented in the Forum including the government functionaries., there is a sizeable component of the villagers themselves in the Forum. They number about 30 and include both men and women and they bring to bear on the discussions in the Forum, a serious consideration for the felt needs of the community.

4.9 The success of public participation lies in the extent to which decisions are taken with unanimity. This unanimity has great force in promoting spontaneous and speedy implementation. A number of instances may be cited from Kundrakudi experience as to how unanimous decisions were arrived at and executed. They reveal the potency of public participation as a mechanism for problem solving. The following instances may be particularly highlighted:

(1) It is particularly striking that Kundrakudi is free from usurious money-lenders. The cooperative spirit among the people is so great that only informal and friendly give and take relationships exist among the people in the community. No private money lending system exists. It appears that one moneylender—an interloper from outside—came and settled in Kundrakudi village and was indulging in this practice in a clandestine manner. This was going on for some time until a piquant situation arose, when this act came to the notice of the Village Planning Forum. This happened when the moneylender started squeezing and tormenting some borrowers for the return of the loans, upon which the latter had to seek the protection of the Village Planning Forum. The Village Planning Forum considered this matter at length and decided unanimously that, the moneylender should not be allowed to operate in the village and ordered him out of the village. This was executed promptly despite pressure from many quarters. Thus, the moneylender was made to flee the village and money lending as a vocation ceased. The village also returned to its status-quo of a "moneylender less" village.

(2) Another instance of a bold participatory decision taken by the Village Planning Forum was on the question of the villagers supporting and joining a general resistance movement for the non-repayment of government loans, a movement which had gathered great momentum in the entire State and gripped Kundrakudi as well. The external pressure and the promptings from opposition parties were quite formidable. On this occasion, the Village Planning Forum, guided by its intelligentsia, took a crucial, extraordinary and bold stand that the people of the village will not join the movement at any cost. They not only took this decision but also repaid the loan voluntarily and in 'right time, affirming their sincerity and commitment. This incident has gone down in the history of the Kundrakudi Planning Forum as a unique decision in united action.

(3) As an example of how public participation and particularly the consensus among the people, could play a significant role in crucial decision-making, we may cite the instance of the election of Panchayat President in Kundrakudi. One of the persons of the village, who had already been in office for the previous term was again proposed for a second-term. Apparently there were no wild protests in the VPF meeting against the proposal and this motion was more or less carried through by consensus. However the spiritual leader of the village, who was presiding over the Village Planning Forum meeting sensed that there was some hesitation among the members about this decision, although they were not quite vocal about it for various reasons. So he deferred the ratification of the selection to the next meeting. In the mean time, he discussed the matter outside with a few prominent citizens and came to know that some minor defaults had been committed by the Panchayat President during his previous term of office. While these defaults were not so vital as to disqualify him for a second term of office, yet there was a feeling among the people that he should be made to realise the people's sentiments. There upon the spiritual leader had a word with the President designate and in the next meeting, the latter made a statement referring to the particular incident and affirming that he would guard himself against possible errors in judgement in future. This helped to defuse the situation and paved the way for unanimous election. Here is an incident which shows that public participation can work wonders for not merely concretising public opinion on critical issue among diverse interests, but also as a corrective in errant situations.

(4) Public participation enables the VPF to call attention to some issues by-passed in project formulation. Repetitive emphasis of such issues in the VPF builds up pressures ultimately leading to their acceptance by Government functionaries. An instance of this kind relates to the expansion of grazing land in the village. While sheep rearing has been adopted as a scheme under IRDP, the linked programme of establishing sufficient pasture land seems to have been neglected in the Government programme. A perusal of the resolutions passed by the VPF showed that this has been repeatedly emphasised in the meetings. During our visit also, a progressive sheep farmer referred to this gap. Since the usual criticism against such schemes is that the lands leased out for this purpose may not be maintained properly by the village, the VPF has now prepared a specific scheme tying up pasture land development to the scheme of Milk Producer's Cooperative so that the latter would be responsible for its maintenance.

4.10 A distinguishing feature of public participation in Kundrakudi is the fact that such participation occurs through all the different stages of the planning process viz., pre-planning, action planning and post-planning stages. Normally, in many participatory programmes, the involvement of people is mainly along implementation and maintenance. The standard procedure is to organise groups at the village level in order to obtain their willing cooperation for the implementation of schemes planned from above. But in Kundrakudi, the participation goes beyond this approach and involves people directly in various planning tasks such as definition of problems, formulation of projects, implementation of projects, evaluation of project implementation and sharing responsibilities in planning with the government functionaries in various ways. This is no doubt a big achievement. But still, in terms of group organisations and mobilising local resources, more remains to be done. The cooperative and participatory spirit that exists here

encourages the hope that it would be possible to develop in this village, a bottom-up system of organisation for stimulating joint action by viable groups of farmers imbued with group responsibility and spirit of self-reliance for the performance of integrated-land-based management, systematic water management, group credit and development of subsidiary income raising activities. A note giving some suggestions to organise group action on these lines has been provided to the village planning forum. (see note in Annexure-IV). It is hoped that the village will move in this direction during the next phase of development.

4.11 A point that we have not elaborately touched upon so far relates to women's participation. Women's participation is not a neglected feature in Kundrakudi. Two points that need emphasis in this context are:

(1) Women are represented in the Village Planning Forum; and

(2) In the programme formulated for the village development, there are quite a few schemes meant for their employment. More attention may be paid in future to schemes involving technological improvements that save labour and drudgery for women and improve their productivity.

4.12 The team also noted during their visit that the women in the villages are quite vocal and articulate about their needs and expressed their preferences freely to the local leaders. We were informed that this situation did not obtain a few years ago.

4.13 Thus the different aspects of public participation discussed in this Chapter show that participation here goes beyond mere cognitive participation. It has been raised to a level of 'social technology', which implies the building up of self-dignity and decision-making capacities of the poor people. So far as the government functionaries are concerned, they have used the public participation available to make experimental steps to test what would work in particular circumstances, both in forms of physical environment and human resources capability.

CHAPTER 5

Transferability and replicability of the Kundrakudi Experience

5.1 The foregoing chapters provided an account of the various directions in which rural development around Kundrakudi area has proceeded and also some of the significant elements of this experience. This chapter is intended to pick up the various threads of this experience and to examine both its universal as well as the unique components and to hit at some of the high spot of transferability and relevance of the whole experiment.

5.2 From all accounts it is apparent that Kundrakudi is a successful story in local level planning for rural development. If so, the question arises as to what extent it is transferable to other parts of the country. This question, in turn begs two other sub-question viz: (a) to what extent did this experiment contribute to local development, and (b) what are the factors and conditions that have contributed to its success?

5.3 Impact on Rural change and Development

The first query is related to the analysis of various impacts of the Kundrakudi experiment upon rural change and development, This analysis should deal with the extent to which this experiment has contributed to capital formation in the rural sector in the form of physical infrastructures, the improvement in rural employment and economy, changes in values and attitudes of rural people the fostering of change agents and the promotion of participatory organisation. In the foregoing chapters some points relating to these aspects were highlighted But since, our analysis is based on a reconnaissance visit only and not on a total evaluation of the experience in terms of its impact on all aspects of development, only some partial answers may be attempted in this chapter.

5.4 Impact on investments

During the field visit, the Study Team tried to ascertain the total investment that has been made in the area during the period 1977 to 1983 including the extent of mobilisation of resources at the local level. Precise figures could not be collected. But it became apparent from the discussions that the contribution of the government is the greatest. As it was noted earlier, the Kundrakudi experiment is really an aspect of development in which the local people worked through the Government System relying mainly on government financing. As it happens very often in the case of success stories, it appears that the area has attracted relatively more government investment because of the several positive factors that have induced development in this area. The people's contribution however, cannot be belittled, as some of the non-economic factors like the extent of self help and voluntary participation can not be easily quantified. In other words it is the Government investment plus the people's contribution which has had a snow-balling effect on the accelerated rural development which has occurred in the Kundrakudi area.

5.5 Impact on the farmer's value system

It can not be denied that the continued implementation of the Kundrakudi style of development over the last 7 years has brought about significant changes in rural communities at the individual as well as the organisation levels. Although we have not carried out a detailed survey in the area to measure the change orientation that has resulted among the people, even the reconnaissance visit served to confirm that the people in the area are relatively change-oriented, implying that they are some what futuristic in their thinking, are more confident of improvements in their future life and are willing to make vigorous efforts for the realisation of these improvements. Our way-side questions and observations revealed that their motivational levels are high, In particular, their positive approach to cooperative endeavour is particularly striking. One may, therefore, conclude

that the changes in values and perceptions of the people seem to be a significant factor for success from the developmental point of view.

5.6 Impact on organisational behaviour

Organisational changes are reflected both in institutional development and in the participatory behaviour of the village people. In particular, Kundrakudi has contributed to the fostering of community-based development and has thrown up a number of village leaders who have taken up responsible positions in the various cooperative enterprises that have come to be established in this village. These leaders who were interviewed showed that they are moderately educated but are highly motivated and are also imbued with a sense of dedication to promote development. Undoubtedly, it is these dedicated personnel who are playing significant roles in organising and implementing community development at the village level as initiators, promoters, coordinators, educators, advocators and implementors of specific projects. The fact is that the Kundrakudi experience has eventually contributed to the identification and fostering of certain pattern of village leadership who, in fact constitute the source of self-reliant development.

5.7 The village planning forum, in particular, has promoted a participatory pattern of interaction between village members and the government functionaries in respect of planning and decision-making- including the selection and implementation of projects in the village. This positive participation in the decision-making process at the village level has also continued during the implementation stages. In this way. it is very interesting to note that the village planning forum has contributes, to the development of grass roots democracy in the area.

5.8 Impact on the village Economy

We could not collect precise details to illustrate how rapidly the village economy has grown in terms of change in household incomes, expenditure patterns and saving. This would require a full range household survey of the village which should be undertaken by some agency. The positive features of improvement in the village economy are, however, reflected in the extent of waste land development the diversification in terms of land use pattern and the improvements in agricultural productivity as well as the employment genera don projects that have been started in the, non-farm sector. There is no doubt that without the concerted effort of the village planning forum, there could not have been the significant increase in opportunities for non-farm income in the area to which we made a reference in Chapter-2.

5.9 Factors that promoted development

The second question to which we may address ourselves is to the several factors that have contributed to the success of the Kundrakudi experiment. These include a multiplicity of factors such as the extraordinary local leadership which has been available, the association of a bard of dedicated scientist who have lent proper guidance in the formulation of relevant projects, the establishment of a "Village Planning Forum and the single mindedness and consistency with which it has acted, the intensive local participation both in planning and plan implementation, and above all the existence of a moral component of development which is indefinable and yet apparaent in this unique instance.

5.10 The Institutional Factor

We may now consider the factor question in greater analytical depth. A factor of crucial importance in this context seems to be the institutional and organisational factor. The central institution around which all developmental activities revolve in Kunarakudi is the Village Planning Forum. It is the coordinating centre for inter-agency planning and management for local development. It identifies local development projects, gets feasibility studies prepared, monitors and evaluates progress and effects of projects, maintains a feed back system with concerned

development agencies and encourages private enterprises and government agencies to formulate development projects for the area. Above all, it is the principal vehicle for people's participation. In Kundrakudi, it has influenced the performance by governmental functionaries and rendered the government sponsored developmental projects more meaningful to the people who are the ultimate beneficiaries. Its primary task, as may be seen, is the inter-agency collaboration. It is done in a very subtle, indirect and unobtrusive manner without raising controversies or rubbing officials on the wrong side. It is coordinating without compelling and integrating without absorbing or substituting the functions of other agencies. The Village Planning Forum has not substituted the functions of any of the line agencies, but has assisted them in the improvement of design as well as of performance. Thus it is the style of its functioning that has evoked the necessary degree of cooperation from government functionaries and other external agencies. Undoubtedly, its composition and way of functioning offer some lessons which may be valid under all circumstances. What its experience suggests is that to coordinate all developmental activities at the local level and to give some leads to developmental agencies as to what is desirable under a given set of circumstances, a local body of informed people is necessary. The idea of a local planning agency is thus quite relevant as an institutional mechanism to match the plan of felt needs from below with that of the departmental schemes from above. The Village Planning Forum need not be conceived as a de novo institution. It may be dovetailed into existing structures, if found feasible. Any local body functioning in a village and enjoying the confidence of the rural community can incorporate the good features of the Village Planning Forum and transform itself into a planning agency at the village level and perform all the functions which the VPF at Kundrakudi is currently performing. For instance, if a village Panchayat is functioning in a particular context, it could, by suitably enlarging or modifying its functions, take on the role of the Village Planning Forum. Alternately, the Village Planning Forum could also be conceived as a separate Committee of the Panchayat performing advisory planning and development coordination functions. Whatever be the structure, as the Kundrakudi experience has demonstrated, it is the method of functioning which is important.

5.11 While it can be generally appreciated that local development could be stimulated more effectively through an innovative rural intervention such as the Village Planning Forum, it should also be admitted that its degree of efficacy will heavily depend on the development potential obtaining in a particular context. These contextual factors include such factors as topography and natural resources, the degree of social cohesiveness or divisiveness as well as the nature of strength of local institutions and traditions of cooperation and the availability of dynamic local leadership. Considering the marked dissimilarities that exist among areas, it is difficult to lay down a single best organisational design for local development.

5.12 To sum up, the Kundrakudi experience suggests that in order to improve the methodology for securing the best results in local development planning at village-level, the following could be posited as necessary steps:

- (i) A proper public forum should be constituted where the rural people will have the freedom to analyse the different approaches to local development and express their felt needs;
- (ii) After the identification of the schemes is done with the consensus of the villagers, their feasibility has to be studied in collaboration with technical personnel; and
- (iii) After getting a scheme approved by the Village Planning Forum, steps should be taken to dovetail the same into the departmental schemes handed from above. This will require some powers of persuasion to get the schemes accepted and funded from the departmental funds. It is in this context that local leadership of high calibre is called for.

5.13 Local Leadership

One factor which came up again and again during our discussions for the successful mobilisation of local development activities is that of local leadership. As may be seen, the local leadership available in Kundrakudi has some extraordinary features. It only serves to illustrate and underline the tremendous potential of this factor in rural development. Leadership of this kind clearly cannot be expected to be available in every village. However, it cannot be denied that local leadership is essential to guide various developmental activities at the local level, particularly, those involving public construction projects, community-run enterprises and cooperative agricultural ventures.

5.14 Traditionally in every village, there exists a village chief who holds this appointment on a hereditary basis, although this system is changing in some states. 'Wherever village panchayats exist, the election system has also thrown up some local leaders. There is a view that the traditional local leaders or the elected leaders are people who have become entrenched in their positions and hence grown complacent in office. They also usually belong to the elite class. The need for operating an effective cadre of local leaders who would be more enthusiastic and innovative in their approach and less conservative in their outlook is therefore often advocated for successful rural development programme in some countries. For the Saemaul Undong programme of rural development in South Korea, for instance, separate cadre of local leaders has been created. The government devotes considerable energy to train these local leaders. Through such training of local leaders, an attempt is being made to build support for local development with an emphasis on the virtues of self-sacrifice and the need to guide others by setting a correct example. The training provides little in the way of technical skills, but much by way of generating enthusiasm and confidence in the selected leaders. It is possible that when new leaders are selected and trained in this manner, conflicts may arise between the traditional leaders and the new leaders. It is argued in the Korean context, however, that a competition between the two types of leaders may often improve the performance of both. From this point of view, it is contended that to have a new leader is not anything undesirable.

5.15 Thus, in the matter of developing local leadership, there are different view points and clear generalisations about these matters are difficult to pronounce. What makes for good leadership is also a complex issue. One point on which there could be agreement, however, is that a good leader must have a sound knowledge of developmental issues derived either through regular education or through experience. He should be a member of the local community and immensely interested in their welfare. What is even more important is that the local leader should be subjected to periodical training and thus 'constantly sensitized to enable him to imbibe more and more education on development issues. Once the decision to have a Village Planning Forum is taken, the question of developing the local leaders and constantly improving their calibre must receive due attention.

5.16 The Third Party Planner

The third important component in the success of the Kundrakudi experiment in rural development is an intellectual component provided by a group of scientists who have assisted the Village Planning Forum with constructive ideas and have been responsible for concretising many of the suggestions emanating from the discussions in the Planning Forum. This team of scientists constitute, what may be called the "third party planner" for the VPF, and have filled a vital gap in planning expertise. The VPF, by its very nature and composition, cannot have adequate planning capabilities and expertise on complex developmental issues and may therefore require some support from an external agency of this kind.

5.17 In the case of Kundrakudi, the external agency, the CECRI has been able to provide assistance in the following directions:

1. Offering technical guidance to the VPF on a continuous basis on all matters relating to village planning and development;

2. Dissemination of scientific information on indigenous appropriate technology for rural areas developed by various R & D institutions in the country such as NRDC, NEERI, RRL etc. and encouraging the transfer of technology in areas considered to be relevant for the village. Thus CECRI in collaboration with NRDC, has popularised several rural technologies developed by the latter. An NRDC training centre has also been established in the village. The role of NRDC in Kundrakudi development and some of the technologies developed by NRDC which are being sought to be popularised have been set out in a separate note in Annexure (Annexure V).

Transfer the technology developed by its own organisation, (e.g. the setting up of potassium chlorate Unit);

4. Effectively liaising and holding dialogue with governmental functionaries and assisting in making necessary arrangements in departmental programmes; and

5. Where necessary, helping the village Planning Forum to have resource inventory/investigations done through competent agencies.

5.18 From the Kundrakudi experience, one may conclude that the assistance from the external agency should be in the nature of a continuous involvement in village development activities (not a mere one-time association). The external agency offering assistance should be capable of solving many of the operational problems encountered in plan formulation and implementation. Kundrakudi is fortunate to have such assistance from CECRI, the result of which is visible in the many small scale industrial projects that have been established in the village. This experience clearly brings out the need for a third party planner to fill-up a vital gap in the development process at the village level. While a few villages may be as fortunate as Kundrakudi in being able to enlist the support of highly competent institutions, the question is: for a majority of villages in the country, how are we to arrange such institutional support ?

5.19 Wherever professional academic institutions exist like research institutions, Agricultural Colleges/Universities, Engineering Colleges, etc., they should be encouraged to offer their assistance on a continuous basis to a group of villages in their vicinity. Where such institutions are not available, other institutions such as a local college may be utilised for this purpose. By teaming up their faculty and adopting a multi disciplinary approach, these institutions can hope to render more effective service in this direction. The task is not so easy; nevertheless, these alternatives have to be explored.

5 -20 One institutional infrastructure whose potential has not been harnessed to the full is Vigyan Kendras which have been set up in different States. If their network could be densified and their efficient functioning could be ensured by establishing proper linkages with local level institutions, they could render yeomen service in those areas of rural development, where specialised extension agencies do not exist at present. Such areas include rural sanitation, rural energy, water resources development, fodder development and eco-development. Thus, the Vigyan Kendras can fill a vital gap in extension services in the rural areas. When this happens, the third party planner may be relieved of much of his role in regard to technology transfer. His primary role will be that of assisting the village in planning activities. This will also include developing the broader perspectives of the totality of rural development (in which the various tasks and activities would find a balance and equilibrium towards planned integrated development), dovetailing short and long-term objectives and maintaining the stability and continuity of the process of plan formulation and decision-making. As may be seen in this discussion, the third party planner has been brought in essentially as a "Resource Centre" to tackle the problem of lack of trained manpower and institutional capability for planning for rural development.

5.21 Attitudinal change among government functionaries :

The objectives of rural development have changed considerably over time. The old stance with the emphasis on "the government decides and people support" must now give place to the idea 'people decide and government supports'. Many of the studies conducted all over the world have emphasised that local development efforts can succeed only with close involvement of the local people. Participatory planning is a new venture. Government functionaries are still new to the concept and have to learn to work with people and understand the local needs and local specificities. Many rural development programmes are either State or Centrally sponsored. These State and Central Governments or their agencies have provided guidelines for the planning and implementation of their individual programmes and thus prescribed some 'do's' and 'dont's'.

They have also provided discretion to the government functionaries to adapt the programme/schemes in accordance with the local areas needs and specificities. But in the hurly burly of achieving the developmental targets within the stipulated time, the lower level government functionaries do not exert themselves to make such adaptations which call for greater understanding and ingenuity on their part and prefer to go ahead mechanically with the implementation of the standard schemes, irrespective of their relevance to the local areas. In this context, if a local planning agency comes forward to help with "tailored" schemes, the government functionary is [pared much of the intellectual effort and time involved in formal data gathering and research necessary for 'adapting' the schemes to suit the local area. This explains the logic ^implied in setting up local planning forums. In this context, the necessary altitudinal change and partnership spirit has to be cultivated by the government functionary so that he becomes amenable to suggestions and follows the leads provided by the local institutions. Ore of the ways in which this may be secured is by imparting [frequent training to government functionaries in 'participatory approaches' to planning and development.

5 -22. Summing up:

In this chapter, we have attempted to provide a catalogue of insights into the factors that have contributed to the success story in Kundrakudi. Re-stated in terms of broad principles at the level of generality, these are:

- (a) Building up a responsible and responsive Receiving Mechanism which will be a people's institution for planning and development, to provide a forum for various people to interact and to prepare an acceptable framework for planning.
- (b) Ensuring a willing, understanding and adaptive Delivery Mechanism which, in effect, implies bringing about attitudinal changes among the functionaries engaged in development administration.
- (c) Bringing into existence a 'Think-tank' or 'Third Party Planner' which can play both an advisory role in planning on a continuous basis, as Well as a catalytic motivational role in implementation With some degree of involvement (not mere association) in the planning and implementation process,
- (d) Identifying a local leader of high personal integrity who is respected by all sections of the people and who can integrate the functions mentioned in (a), (b) and (c).
- (e) Ensuring a style of functioning (of the planning mechanism) which will be informed by an informal group dynamic approach to decision making and which Would be neither compelling nor absorbing in its performance and which Would be able to eliminate any conflicts fluctuations arising during the planning process.
- (f) Adopting flexible procedures and consensus building techniques as well as healthy conventions in the working process.

(g) Devising a network of informal consultative groups outside the regular institutional mechanism for group action, which would expand the scope of public participation and also ensure, voluntary agency participation. (See Annexure IV)

(h) Imparting Training both formal and informal for the local youth inducted into the development projects to provide both the skills as Well as moral qualities.

5.23 The principles stated above need to be interpreted appropriately to suit every situation. There can be no fixed rules of the game. Each situation is unique in itself and demands a different approach.

5.24 From the fore-going discussion, it may be concluded that the Kundrakudi experiment has succeeded, by and large, because of a particular blend or combination that could be forged by the representatives of the village community with the technocratic functionaries in government and a group of in formed and dedicated academic community. The approach here may be termed "Technocratic-Academic Democratic mix" (TAD). In other words, a generalisation that we may draw from this experience is that a combination of popular participation with effective local leadership seeking to work its way through the governmental system can succeed within certain limitations. It must be realised, however, that the combination does not automatically ensure success in every context. This is to underline the point that the 'mix' referred to here is a necessary, but not a sufficient condition for successful development There are several unique factors in the Kundrakudi context such as the extraordinary local leadership, the dedicated third party planner and a highly motivated public which make the problem of replicability of the experience quite a complex and complicated one. In this context, it is perhaps necessary to make a guarded statement as to the replicability and transfer-ability of any experience in rural development. Our view is that exact proto types of Kundrakudi may not—and need not— emerge in other villages. However, if a sincere effort could be made in each context to bring together the three major partners in rural development—technocrats, academics and the people in the right combination to suit a particular set of conditions—a blend that is called in this report as the 'TAD mix', and orchestrate their actions in the direction of planned development, it is likely to go a long way towards improving local level planning for rural development and result in a better realisation of our investments in rural areas.

CHAPTER 6—Kundrakudi Revisited

Tour notes of Dr. C. H. Hamunaiitha Rao, Member, Planning Commission on his visit to Pasumpon Muthuranialingam district of Tamil Nadu during March 9-10, 1986

6.1 Dr. C. H. Hanumantha Rao, Member, Planning Commission visited the Pasumpon Muthuramalingam district in Tamil Nadu accompanied by Dr. K. V. Sundaram, Joint Adviser (MLP) and Dr. Rama Sastry, Deputy Adviser (Agriculture). The visit' was specially intended to study the success story in Local Level Planning for rural development in the Kundrakudi area and other dry land development measures in the district.

Developments in and around Kundrakudi ;

6.2 The Kundrakudi pattern of development has already been documented by the Multi-Level Planning section of the Planning Commission. It is now just one year after this study was made and the present visit was useful for understanding factors crucial to its success and to take note of some significant developments that have followed since then, particularly the attempts to extend the coverage of this experiment over two whole districts viz. the Pasumpon Muthuramalingam and Ramanatha-puram districts.

6.3 Kundrakudi is a small village of about 3000 population (450 families) in which more than 80% are small and marginal farmers. Since the village lies in a drought prone area where the cultivation lasts only for 3 to 4 months, other avenues of employment and income have been thought of. This has led to the formulation of the following schemes:

- (i) Providing milch animals for the poor villagers.
- (ii) Providing sheep units.
- (iii) Additional facilities for irrigation through community bore wells.
- (iv) Dryland cultivation including development of wasteland through promotion of fodder cultivation, horticulture and sericulture.
- (v) Providing employment through agro-based and other industries.
- (vi) Providing training for self-employment.

6.4 In the agriculture and non-agriculture sectors taken together, as many as 16 rural industrial units have been brought into existence upto 1984. Since 1984, five more industrial units have been launched and are in various stages of progress. Out of these, the team visited about 14 units (including horticulture, sericulture and cashew plantations). It was informed that for various schemes put together about Rs. 2 crores of investment have gone into the village and employment for about 1,000 people has been provided. Thus the cost of creating employment opportunities works out to Rs. 20,000 per job. The beneficiaries have been both from the Kundrakudi village as well as from about 20 neighbouring villages. During the visits, the team gathered that the average wage earnings of the employees ranged from Rs. 9-10 per day. This, of course, varied for different types of occupations/industries.

6.5 With the developments that have taken place, Kundrakudi has been able to achieve near full employment. The approach to development has aimed at providing employment to at least one person in a family. It was mentioned that there are now only 20 families in the village which have

not been covered for employment and they too will be covered with the commissioning of the new industrial units by the end of March 1986. This is indeed a commendable achievement. This has been rendered possible through the dedicated local leadership provided by a spiritual person—the Adigalar, as he is called—who has been able to bring together government functionaries, scientists, the village people and the financial institutions together in a partnership approach to development. The discussions with Adigalar to trace the historical basis of the evolution of the development philosophy revealed that this is the result of a transformation in his own outlook and ideas on development during 1952-72, a transformation in which his visits abroad, particularly to U.S.S.R. seem to have exercised a major influence. The Village Planning Forum (VPF) is the brain child of the Adigalar and it has been designed to meet the basic needs of the villagers based on the available resources through proper implementation of various development schemes. The VPF caters to a cluster of villages. Currently there are five VPFs at Kundrakudi, Thiruppalakudi, Piranmalai, Soripparaipatti and Mathur. Now District Planning Forums have been also constituted for the two districts of Pasumpon Muthuramalingam and Ramanathapuram.

6.6 Discussions with Prof. K. I. Vasu, Director and Dr. Balakrishnan, Scientist of Central Electro-Chemical Research Institute (CECRI) brought out some of the unique features relating to Scientists' collaboration in this rural experiment. The CECRI appears to have made their intervention in rural development in 1977 when some of its scientists and other staff volunteered to involve themselves in the Village Planning Forum at Kundrakudi and Nemam villages. This was essentially a voluntary effort on the part of a handful of the staff. In early 1984, this programme was formalised and strengthened with the formation of 'Rural Science Forum'⁹ with official concurrence of the executive authorities of the Institute. The unique features in its functioning are that its activities are carried outside the office hours or during holidays without in any way hampering the regular working of the Institute and that its members are governed by certain self-imposed austere standards in their conduct. Thus, if for example, any outside visits are required for work connected with the Rural Science Forum, the members travel by second class rail or bus. Currently over 70 scientists and other staff of the Institute are involved in the Rural Science Forum activities. These activities are conducted through seven sub-committees of the Rural Science Forum. These are— Education Group, the Resources Potential Group, the Industry Group, the Vocational Training Group, the Health and Nutrition Group, the Agriculture and Animal Husbandry Group and the Science Population Group.

6.7 In technology transfer, the Rural Science Forum of CECRI believes that the villagers can absorb even sophisticated technologies and it is only when such proven and profitable technologies are taken to the villages, one can have real economic transformation among the villagers. If, on the other hand, one depends only on the so called simple technology-based village industries, like the leaf-cup making, their impact alone will not be sufficient to bring about the desired magnitude of economic transformation, i Thus, the CECRI approach seems to be based on a mix of both High-tech and appropriate technology-based industries to ensure accelerated rural development. The Rural Science Forum, in association with the Village Planning Forum, has thus established a Potassium Chlorate factory at Kundrakudi and plans are afoot for establishing a lead acid battery industry, an aluminium process industry, a paint industry and many electronic industries in several villages of the district. This may be noted as the significant feature of the approach of the CECRFs Rural Science Forum towards rural development and economic transformation. In pursuance of this, the Forum constantly endeavours to obtain appropriate technologies from various research institutes/publications and evaluates them for adoption in the context of local resource endowments.

6.8 Another aspect of the small industrial projects that have come up in Kundrakudi is the fact that they have been consciously planned such that at least 40% of the output has been assured of a captive market. The provision of such a marketing support has gone a long way towards the survival of the small industries, which otherwise would have been subject to several vicissitudes.

6.9 Some IRDP and DPAP schemes were visited. Under the IRDP, a project that has come up well is the Milk Society with a membership of 420 persons. The society has arranged loans for milch animals to weaker sections. The number of animals was stated to be 120 and the average yield of milk is 5 litres per day. In order to improve the milk yield, a fodder farm has been developed over an area of 5 acres. The fodder grass grown in this land is supplied to the farmers at no profit—no loss basis. The fodder farm is stated to be not adequate to meet the full needs and there are proposals for extending fodder cultivation. The milk society has also started producing cattle-lick based on the know-how obtained from the National Research Development Corporation, New Delhi.

6.10 Under the DPAP, some notable developments in dryland/wasteland development have taken place. One of these is the development of an orchard over an area of 100 acres of dry land to serve as a demonstration-cum-model farm for the farmers for raising fruit crops. Water conservation measures such as the "drip irrigation" have been employed in the farm. The model farm has come up well. It was mentioned that the fruits of this orchard are sold in small quantities to the villagers at fixed and cheaper rates. The orchard also supplies seedlings to the farmers at nominal cost. Over a period of 5 years, the orchard has become self-sustaining and hopes to make profit in the next one or two years. It provides employment to about 60 local people throughout the year at an average wage rate of Rs. 10/- per day. It was mentioned that when the scheme catches up in other villages, it will help in the establishment of fruit processing industries in future. The Village Planning Forum has proposed one orchard for each DPAP Taluka.

6.11 Another important dry land utilisation scheme is the cultivation of cashew plantation. This has led to the establishment of a cashew processing unit under the cooperative sector (capacity 120 tonnes). The society has been strengthened further with the production of cashewnut shell liquid-based paints. The society provides employment to 80 members of weaker sections. It was mentioned that since cashewnut cultivation had extended over a larger area, (3800 hect., one-fourth of which is under individual ownership). There was scope for starting on: more processing unit in this area.

6.12 Yet another project aimed at dry land utilisation is the Community Wells Programme. In Kundrakudi alone, there are 10 Community wells. In the surrounding 16 villages, it was mentioned that there were another 31 wells. Windmills have been set up at some places to lift water from the wells, thus conserving electricity/diesel. An Agriculture Green Farm Association has come up as a registered association under the Societies Registration Act with 40 members and a share capital of Rs.400/- to take care of the maintenance and management of the Community Wells. The Association has representatives from the village (16 persons) and Government (5 officials). At present, this Association's jurisdiction is confined to the Community Wells in Kundrakudi. It is proposed to extend this jurisdiction to all the Wells in the surrounding 16 villages. The ultimate aim of the Green Farm Association is to uplift the farmers through full utilisation of the Community Wells with 3 crops a year and with modern agricultural techniques.

6.13 A sericulture farm and a 'Silk Hamlet' are other achievements under DPAP, A model sericulture farm has been set up in 1983 in about 10 acres for providing training to the farmers and to supply seed cuttings to them. In the first phase, 20 farmers have been trained. When the sericulture activity picks up in the villages, it is proposed to start a spinning centre.

6.14 The Silk hamlet is a novel scheme seeking to develop mulberry plantations in 100 acres of Government Poromboke land and settling 100 Harijan (Adi Dravida) families. In the first instance, over a period of 3 years, the Adi Dravidas will be engaged as workers on a daily wage of Rs. 10/- per day. After establishing mulberry plantations, it is proposed to handover the management to these families at the rate of one acre per family. A society is proposed to be registered and Government participation will be only in the form of supervising the activities of the hamlet. Individual chawkie rearing sheds will be provided to the families by the Tamil Nadu Adi-Dravidar Housing and Development Corporation (TAHDCO). Three bore wells have been put up already

and two more are envisaged in future. The mulberry plantations are expected to come into yielding stage by 1986-87. According to calculations, one acre of mulberry cultivation combined with rearing of silk worms is sufficient to provide a net average income of Rs.500 per family per month. The total outlay proposed for the scheme is Rs.20 lakhs.

6.15 The dry land utilisation activities in and around Kundrakudi adequately demonstrate the importance of land as a stabilising force for the rehabilitation of the rural poor. But a lot of painstaking cooperative effort is required alongwith necessary linkages which the government's delivery mechanism should take care of, if wastelands are to be effectively put to use.

6.16 Our discussions revealed that the present revenue; land classification has resulted in some bottlenecks to the Kundrakudi Village Planning Forum. While the VPF is eager to forge ahead with a larger programme aiming at wasteland utilisation, they find that what is in actuality a degraded scrub jungle (wasteland) has been recorded as 'forest land' in the revenue records with the result that they are not able to get effective possession of such lands for development, as these have to be referred to Government of India for clearance. Land uses such as horticulture development, they contend, are intended to 'green' such lands which will greatly help in prevention of soil erosion and improvement of soil fertility and ecology and they should be automatically exempted from the application of the Government of India restriction. It was pleaded that there should be adequate devolution of powers to the State Government to exempt such lands from the present restriction.

6.17 **Welfare Activities** : In the Kudrakudi style of development, welfare activities have not been lost sight of. A recent addition to the village is a children's park, which has a Library, Radio, T.V. arid facilities for indoor games. A boy interviewed by us said that the enjoyed reading story books and seeing TV in the centre. It was mentioned that there was also an Adult Centre, which had also T.V., Radio, Library with books on agriculture and allied subjects and visual aids to family planning. Besides, there is a ladies club and a youth club and it was mentioned that periodical seminars on health, education, agriculture, animal husbandry, industry and other aspects are organised at the village level.

6.18 **Women Participation**: The team also noted that the women of Kundrakudi have found active involvement in the development process. In some of the industries visited (e.g. cashewnut processing, Nepali loom), large number of women were found to be employed. Enquiries about their wages in employment revealed that it ranged between Rs.7-10 per day. It was also mentioned that attempts were being made to improve their skills through periodical training. In the Village Planning Forum and the Cooperatives also, women are represented—Some women, when questioned, freely admitted that they have greatly benefited from the development process.

6.19 **The Consensus mechanism**: One point that struck us about all decision-making processes at the village level is the consensus mechanism that operates. While this is the accepted procedure in the sphere of the planning activities organised by the Village Planning Forum, what is striking is the fact that it has extended to other spheres too, including political. In the recent Panchayat elections held in the village, not only the President of the Panchayat, but also all the ward members were elected by the people unanimously without strike or struggle. For elections to State Assembly and Lok Sabha also, it was mentioned that the. village puts up a common platform and specific days are allotted to various political parties to use it for their propaganda. The expenses connected with it are borne by the village and no party is allowed to spend for this purpose. Another example of a decision by consensus by the village community that was brought to our notice was a decision not to rear goats in the village. It was mentioned that this decision is being adhered to strictly by all the people in the village so as to prevent destruction of crops, trees etc. Looking at the functioning of this consensus mechanism in the village, it must be mentioned that it is an aspect of the culture which has taken deep roots in the village, thanks to the Adigalar who has been the moving spirit behind this attitudinal transformation in the people.

District Planning Activities

6.20 During our discussions, we also got an overview of what is proposed to be achieved at the district level. District Planning Forums have been created for two districts—the Pasumpon Muthuramalingam district and the Ramanathapuram district and the Kundrakudi style of development is being sought to be replicated in them. Science, Technology, Agriculture, Animal Husbandry and Religion (STAAR) are stated to be the basis of the whole development effort. For District Planning, the approaches to the development of agriculture, animal husbandry, industry and social services have been outlined. According to calculations made., the government delivery system is capable of meeting 50% of the requirements (if efficiently used) and anything more than this could be achieved through internal resource mobilisation. The District Plans propose to organise community action for this purpose. The methodology for district planning would be based on a thorough resource inventory of the local resources and human skills and formulating viable schemes using science and technology inputs as necessary. The CECRI has agreed to provide the necessary technical assistance for such projects. One such project was under intensive discussion in CECRI during our visit *in* which we briefly participated. This is an integrated industrial project on Marine Chemicals proposed to be set up with the assistance of Tamil Nadu Industrial Development Corporation (TIDCO) for the production of Magnesium using sea bittern at a place called Valinokkam in Ramanathapuram district. This project aims at the production of various industrial chemicals such as calcium sulphate, magnesium oxide, light basic magnesium carbonate, magnesium trisilicate, electrolytic grade magnesium hydroxide, iodised salt and potassium schsonite. It is evident that a systematic and planned salt complex can generate a lot of wealth and employment and, by forming the industrial cooperatives for the production of various chemicals, the socio-economic condition of the weaker sections in the backward areas can be greatly improved.

Wrap-up Discussions

6.21 The Kundrakudi visit was rounded off with discussions with the members of the Village Planning Forum. This served to bring out some problems faced by the forum. These problems are outlined below :

- i. It was pointed out that the Massive Agricultural Production Programme (MAPP), another name used in Tamil Nadu for the centrally sponsored Small and Marginal Farmers Scheme being implemented by the Ministry of Agriculture & Rural Development was charging interest at the rate of 11½% for the loan taken by the small and marginal farmers. It was requested that this interest rate should be reduced to 4 % and also the repayment period should be increased from 3 years to 10 years. Perhaps the differential rate of interest is now available for SC/ST population only. It has been requested that all categories of small and marginal farmers may be given the benefit of this, differential rate of interest.
- ii. It was pointed out that the self-employment scheme has some restrictive provisions. Under the scheme, a loan upto 25,000/- is given to *individuals* for self employment. This is not, however, applicable to a *group* of people, as in the case of cooperative units, so that 10 or more individuals can join and get a substantial loan to facilitate starting viable industries. It was contended that such a provision will promote entrepreneurial talents in rural areas, as well as cooperative spirit leading to social integration.
- iii. The Village Planning Forum of Kundrakudi has an ambitious scheme of imparting training to village farmers in basic hygiene, care and first-aid to animals, as presently the number of veterinarians are not sufficient to cover the remote villages. Even where they are available, the poor farmers may not be able to pay for the service. It is felt that the building up of a paraveterinary force in the rural areas will serve to impart knowledge among the village population regarding the & importance of cleanliness, constant care and proper feeding and render first aid for common diseases as Well as promote artificial insemination. The VPF desires that the infrastructural facilities for training needed for this

scheme should be provided under IRDP/ DPAP.

iv. One of the points that was brought to the notice of the team relates to the scheme of giving subsidy for purchase of milch animals to the weaker sections, of the population. It was requested that a second loan should be given for the purchase of milch animals *within 3 months* from the date of purchase of the first animal so that there will not be any dry period.

v. It was requested that at least one Science Library and workshop should be set up in each block to improve the standard of science education in rural areas.

vi. The importance of drip irrigation in drought prone areas, particularly for wasteland development was brought to our attention during the visit. It was requested that 75% subsidy should be given for Drip irrigation to the small and marginal farmers so that they can use this method and ensure efficient use of water in areas like this.

vii. At present the incentive schemes for the industrialisation of backward areas are applicable to district a^ the unit area. It was suggested that the block should be made the unit area for this scheme, instead of the districts, so that the 'No Industry Blocks' could be captured under the scheme.

viii. It was requested that more items should be reserved for the shall scale sector by the Govt. of India and also the technologies with National Research Development Corporation (NRDC) should be made available free of cost to small scale units started in backward areas.

ix. It was mentioned that the criteria for the delineation of drought prone areas was based on rainfall data which tended to preclude some really drought prone areas from the purview of the scheme as rainguage stations as well as rainfall records were not adequate and sensitive enough to capture all qualifying areas. It was mentioned that the Sakkottai and Thiruppatter Unions in the Pasumpon Muthuramalingam district were equally effected by drought and should be included under DPAP.

LIST OF PROJECTS SPONSORED BY VPF

Details of Insitutions Established up to 1984

I. Agriculture and Allied activities:

1. Agriculture Credit Society	(coverage) Families	430
2. Milk Supply Society	No. of milch cattle distributed	380
3. Sheep Society	No. of sheeps distributed	2709
4. Labour Contract Cooperative Society.	Membership coverage	95 of which 40 are women
5. Sericulture	Employment in mulberry garden	40 of which 20 are women
6. Horticulture A Model Govt. Orchard Farm with 67 acres.	Employment	52 of which 40 are women
7. Community wells	No. constructed	15

II Rural Industry

1. Carpentry	One unit. No. employed	5
2. Blacksmithy	One unit. No. employed	3

III. Small Scale Industries

Name of the Industry	Products	Investment	Capacity	Employment	
				Men	Women
1	2	3	4	5	6
1. Nehruji Polythene Co-op. Society.	Polythene bags	10.0 lakhs	96 M. ton/annum	6	60
2. Maruthu Pandian Hand Pounding Society	Rice, Bakery, Oil	1.5 lakhs	Rice 57000kg. Bread 90000 Oil 18000 lit.	12	10
3. Periyashewnut Co-op. Society	Cashew Primer	4.0 lakhs	Cashew 120 ton Primer 60000 lit.	5	60
4. Kasturba Match Co-op. Unit	Matches	0.25 lakhs	1800 bundles	2	40
5. Kundrakudi Bharathi Potassium Chlorate Factory	Potassium Chlorate	50.4 lakhs	320 tons	35	2
6. Aluminium Circle (Private)	Aluminium Plates	4.0 lakhs	88 tons	10	—
7. Shanmuganathan Printing Press (Private)	Printing	0.5 lakhs	—	5	5
8 Electronics (Private)	Stabiliser Fan Regulator	1.0 lakhs	—	2	2

LIST OF INDUSTRIES PROPOSED

SI. No	Name of the Industries and location	Employment Opportunity	Product	Capacity	Total cost of project (Rs. in lakhs)	Remarks
1	2	3	4	5	6	7
1.	Aringnar Anna Battery Industrial Society, Kundrakudi	31	Lead acid Batteries	6000 batteries per year	17.00	Registered
2.	Bharathi Indul. Chlorate Factory Ltd. Kundrakudi (Expansion).....	61	Potassium Chlorate	800 tonnes per annum	60.00	Approved
3.	Kamraj Polythene Sacks, Aranmanaipatti	149	Polythene Woven sacks	10.08 tonnes bag per year	24.00	Under processing
4.	Paper Industry, Sevaipatti (Near Sayalgudi Ramnad District)	220	10 TDP of Light Weight papers	2100 tonnes per year	150.00	Do.
5.	Engineering Workshop, Kundrakudi	48	Job works		5.00	Do.
6.	Kannappa Nayanar Surgical Cotton Industries, Palavangudi	104	Surgical cotton	216000 XCS per year	21.25	Do.
7.	Cashewnut Processing & Cashew liquid, Thirukolakudi	91	Cashew Kernels & cashew liquid	Cashew Kernels Cashew Liquid 50 tonnes per annum	9.60	Do.
8.	G.I. Buckets	76	G.I. Buckets	3000 Nos. per year	6.00	Under Processing
9.	Aluminium Utensils, Patharakudi .	32	Aluminum Utensils	90 kg. per day	0.55	Do.
10.	Building Bricks, Koratti	92	Bricks	3.5 lakhs per month	4.65	Do.
11.	Confectionery Unit (Palm Products i.e. Chocolates Toffees)	73	Varieties of Chocolates		1.33	Do.
12.	Lime Production, Kundrakudi	76	Lime		2.00	Under processing
13.	Milk Sachets, Kundrakudi	76	Milk Sachets	4 tonnes per day	1.00	Do.
14.	Bicycles parts and components	36	Free wheel Pedals etc.	42000 Nos.	1.50	Do.
15.	Dr. Shenoy Aluminium Building Materials, Thattatti.	31	Hinges & bolts	Hinges 2000 dozen Tower Belt 100 dozen	5.82	Do.
16.	Leather Footwear, SALT	61	Leather Foot Wear	40 pairs per day	1.05	Do.
17.	F.R.P. Helmets, Kundrakudi	18	Helmets	200 per month	1.10	Do.
18.	Plaster of Paris, Kundrakudi	31	Plaster of Paris	2000 tonnes per year	2.00	Do.

LEVEL OF ATTENDANCE IN VILLAGE PLANNING FORUM
MEETINGS— 1981-83

SI. No.	Date of meeting	% attendance
1.	28-2-1981	N.A.
2.	28-3-1981	N.A.
3.	25-4-1981	60%
4.	23-5-1981	40%
5.	27-6-1981	51%
6.	25-7-1981	63%
7.	26-8-1981	75%
8.	2-10-1981	88%
9.	26-12-1981	50%
10.	23-1-1982	70%
11.	23-2-1983	58%
12.	17-4-1982	44%
13.	22-5-1982	50%
14.	22-6-1982	31%
15.	24-7-1982	32%
16.	4-9-1982	57%
17.	2-10-1982	76%
18.	29-1-1983	74%
19.	26-2-1983	69%
20.	26-3-1983	83%
21.	21-5-1983	60%
22.	25-6-1983	70%
23.	23-7-1983	65%
24.	27-8-1983	73%
25.	17-9-1983	54%
26.	19-11-1983	68%
27.	24-12-1983	60%

THE PLANNING PROCESS AT THE VILLAGE LEVEL-SOME SUGGESTIONS TO THE VILLAGE PLANNING FORUM (VPF)*

I look upon the Kundrakudi experiment together with its Planning Forum as the functioning of a Receiving/utilising mechanism which interacts with the Delivery Mechanism (i.e. the government and its local offices and personnel and other agencies operating in the area, such as banks) to obtain a fair share of its developmental needs in accordance with its local preferences and local potentials. In this concept, the Receiving/Utilising mechanism (i.e. the Planning Forum) has an important contribution to make towards the framing and adoption of the Village Plan. In order to enable the Planning Forum to play this role effectively, the following suggestions are given:

(1) For the formulation of the plan, the initiative should come from the bottom level and the proposals formulated by the Receiving/Utilising mechanism should adjust and be adjusted by the proposals of the Delivery Mechanism at a 'matching exercise'.

(2) While the bitter off farmers may prepare their individual farm plans, the low income disadvantaged farmers and peasants can plan effectively only in groups. So the first task should be to form suitable groups. In these groups, farmers owning land in contiguous association may come together. A group may consist of 15 to 20 small farmers/other occupation groups.

(3) The formulation of Group Plans is the core of the Planning exercise. A Group Plan is a plan of work for an agreed period of time, indicating joint and individual production and income-raising activities, based on joint and individual resources, sharing of inputs and other aids and supports to production and following a schedule of operations. It will enable individual farm and household plans to be prepared. Each group should be associated by a Group Organiser who will be from among the members of the group itself, being one who enjoys the confidence of the Group as a whole. The Group Organiser is expected to inter-act vigorously with the VPF and perform the role of a planner and change agent. He would be constantly "sensitised" for this role by the intellectual component (scientists and planners) in the Forum. Where necessary, the help of subject matters specialists and extension officers should be sought.

(4) A group plan should have three main components, the *Group Record Book*, the Plan for the "Nucleus" or *Starter Activity*, and the plan for *subsidiary income raising activities*.

(5) The Group Record Book will result from the collection of base line data of the socio-economic conditions, resources and liabilities of the participating households. It will also keep a record of the progress of the group schemes.

(6) The Plan for the "Nucleus" activity will cover the joint undertaking of the Group that benefits all or most members participating, that is likely to bring quick results and that necessitates the continuance of joint effort in mutual interest.

(7) In nature, the "Nucleus" undertaking will require the participation of all members in one capacity or another. Examples are tube well, storage, feed mixing for animal production, common transport, power tillers, common pool of sprayers and machinery, processing, rice huller, common procurement of livestock, supplies of aids to production etc. Crops and/or livestock that are consequential to the choice of the Nucleus activity are also included in the Group Plan.

The Plan for subsidiary income raising activities is the third component of the Group Plan. It should give a cumulative picture of the action contemplated by individual numbers for farm-based

* Prepared by Dr. K. V. Sundaram, Joint Adviser, Planning Commission.

subsidiary income raising activities/or other kinds of employment generating work that raises the income and living standard of the family. These may often require joint aids for production and mutual help.

Planning of the Nucleus Activity

The group should discuss different ways of increasing productivity and income through activities that are common and could be done jointly. The Group Organiser should help the group by obtaining and collecting information on existing or new developments in the area that may give scope for common activities for income raising. The scientists and other intellectuals in the VPF (The Think-tank) should feed such information to the Group Organisers during their weekly interactions. The common income-raising activities may be of the following kinds:

(a) Joint aids to production, e.g. tubewells, bullocks, storage, power tillers, common hand operated feed mill for poultry, common nursery for seedlings, common milk collection and freezing centre, common methane gas plant, etc.

(b) Group custom services for additional income, e.g. contractual labour for other farmers and public works, specialised services for others on payment e.g. servicing through providing draft animal, machinery, sprayers, repairs, etc.

(c) Inter-related farm-production requiring Group effort e.g. crop-cum-livestock, farm-cum-fishery, poultry-cum-crop etc.

(d) Items of physical infrastructure relevant to the rural poor e.g. deepening of a pond, soil conservation, terracing, deepening of channels, a short approach road etc. Though the provision of physical infrastructure is the responsibility of the Delivery Mechanism, it is possible that in some situations, localised and small scale landwater-soil development by the Group itself is an essential starter for income-raising.

Selection of 'Nucleus' Undertaking

The members should identify the 'Nucleus' undertaking on the basis of the list of common activities. Priority should be given to those undertakings that will not only give additional income, but will also benefit the majority of members. The Group with the assistance of the subject-matter specialists should also consider the technical and economic aspects of the undertaking. The 'Nucleus' undertaking, especially in the beginning, should, to the extent possible be simple and practical. It should be the felt need of the group, labour intensive and should demand cooperation of all members. Furthermore, technical support from government and non-governmental agencies should be available. The size of the activity or enterprise should be determined on the basis of the resources available. Consideration must also be given to indirect benefits such as that the activity should encourage cohesive functioning of groups and lead to better use of surplus family labour, etc.

The viability of the 'Nucleus' undertaking should be appraised by the Group before deciding to go ahead with the Nucleus undertaking and the production plan.

Subsidiary income raising activities will be organised by the Group members on household basis. This portion of the Group Plan will therefore be the sum total of individual decisions. In some cases, the group may form smaller sub-groups to organise such activities i.e. two or three households may find it convenient and economical to undertake an activity and may formulate a work plan. A summary of the plan to subsidiary activities should be prepared by the Group for incorporation in the Group Plan.

Though the subsidiary income raising activities are to be planned individually by every household, it is important that the Group should provide support and assistance in its formulation and implementation. It is the *Group's responsibility* to obtain off farm inputs, assist in transport and marketing and take action to cover the risks. Sometimes joint aids to production will be necessary and the factors mentioned above will have to be considered.

Consolidation of Group Plan into the Village Plan

The Group should be brought together and discussed by the members of the Village Planning Forum. The representatives of every group should present "an explanation and implication of their Group Plans. A consolidated statement of all Group Plans will then be prepared for consideration at the higher levels. This statement should include the assets and liabilities of each group; the production activities, the requirements for investment (Nucleus activity and joint aids to production), production inputs credit, farm machinery and equipment etc. and estimate of costs and recovery item-wise. On these subjects, banks may prepare separate statement of credit requirements.

Specialised Training Requirement

The Planning Forum should determine the training requirements of the different groups. For example, a group may need to have a trained tubewell or tractor operator. The requirements of the different groups for such specialised training can be considered and the planning forum can plan training programmes according to the needs.

Adjustment between the Plans of the Receiving/Utilising and Delivery Mechanisms and the procedure for matching the plans from below with those from above.

The aim here is to examine the plans of several Groups in order to match and adjust them with the State Government Plans or programmes. The responsibility for this area-level adjustment lies with the Village Planning Forum (VPF) on the one hand and the concerned supervisory and some decision making officials of government and the credit agency on the other hand. If a District Planning Team exists, then they would be familiar with the government plans and would have access to policy makers and planners in the State Government level. Then, it would be their job to link local level plans to the plans prepared by decision-makers and planners at the State headquarters. As such, they should be in a position to influence people in higher authorities to accept the plans prepared with their participation.

One procedure for 'matching' the plans from below with those from above is for the VPF to take the initiative by organising a short Field workshop to which the government departmental functionaries at the district level may be invited. Then the proposals of the Group Plans are presented and the officials are requested to accommodate these proposals with their departmental schemes. If the departmental schemes are also ready, the Workshop could compare the list of proposals emanating from the Group Plans with the departmental scheme and should attempt adjustments in the light of priorities from-below and above. Sometimes the departments may have to prepare a new programme in order to support the Groups' Plan. Groups may also have to modify their [proposals in certain circumstances.

The conclusions emerging from this exercise should lead to quick action in two directions. First, it will be the responsibility of the Government officials participating in the Workshop to obtain early clearance of the schemes from the government and the bank. Secondly, the Groups will immediately consider the adjustments to be made in their plans as a result of the matching exercise.

THE ROLE OF NRDC

The National Research Development Corporation is a Government of India enterprise specially established to develop and explore indigenous know-how. One of its activities is to evolve appropriate rural technologies and to carry them to economically backward people in the rural areas. In doing so, the NRDC seeks to graft the technologies in such a way that they match effectively with the existing life style of the people. This is sought to be accomplished through a special programme called "Development and Promotion of Appropriate Technologies". Under this, the NRDC has established Rural Technology Demonstration-cum-Training Centres (RTDT Centres) in about a dozen places in the country. In these centres, a cluster of technologies relevant to the needs of the local population are available for demonstration and training of the local people. They include provision of safe drinking water, lift irrigation, farm based utilisation technologies, low cost and safe housing, post harvest technology, literacy aids, technology for women, utilisation of solar and wind energy. The NRDC has chosen Kundrakudi to establish a rural technology demonstration-cum-training centre in collaboration with Village Planning Forum and the Centre was set up in April, 1984. The NRDC has supplied machines and equipments worth Rs. 10,000 for demonstration purposes.

The RTDT Centre in Kundrakudi has demonstrated the following technologies :-

- i. Safe drinking water (water filter);
- ii. Leaf-cup-making machine;
- iii. Fire Proof thatch roof;
- iv. Agrowaste compaction machines;
- v. Paper slate;
- vi. 'Balwan' bullock cart of improved design;
- vii. Cattle Lick;
- viii. Smokeless chulha;
- ix. Solar cooker;
- x. Storage bin;
- xi. Rope making machine

Two local teachers were given training in operating the machines. They explain the salient features of the centre to the visitors and demonstrate the working of the machines.

Apart from the people in Kundrakudi and surrounding areas people come from far off places also to see the demonstration-cum-training centre. It is understood that an average of 50 to 100 persons visit the centre every month. The village Planning Forum itself has proposed to set up a few manufacturing units based on the rural technology. The Dairy cooperative in the village has already started manufacturing cattle lick. A unit for producing water filter candle has also been set up in 1983-84. The Village Planning Forum has proposed to set-up a unit for fire proof thatch roof and improved smokeless chulha in 1984-85. Quite a few interested persons have come forward to adopt the technology advocated by the NRDC for manufacturing paper slate, leaf-cup-making, agrowaste compaction.

II. CASE STUDIES OF SUKHOMAJRI AND DASHOLI

CHAPTER 7 Introduction: The background and genesis

7-1 The Planning Commission has set up a Working Group on Hill Area Development for the Seventh Five Year Plan (1985—90), which constituted a sub-group on "Catchment area development and integrated micro-watershed management and coordination of sectoral programmes." The Sub-group, in turn, established two sub-committees, one "to suggest measures for protection and development of catchment areas", and two "to conceptualise and give expression in the form of a project report to the multi-disciplinary integrated work carried out in the Sukhomajri project and the Dasholi Gram Swarajya Mandal Project. The project report should serve as a model framework for micro-watershed management projects for the hill areas in the country."

7.2 The sub-committee appointed to study and conceptualise the Sukhomajri and Dasholi Gram Swarajya Mandal projects comprised the following persons:

- | | | |
|----|---|------------------|
| 1. | Dr. (Mrs.) Kamla Chowdry | Chairman |
| 2. | Dr. D.R. Bhumbla | Member |
| 3. | Shri P. R. Mishra,
Officer-in-charge, Central Soil and Water,
Conservation Research and Training Institute. | Member |
| 4. | 4. Shri Madhav Ashish,
Mirtola Ashram | Member |
| 5. | 5. Shri Chandi Prasad Bhatt
Dasholi Gram Swarajya Mandal | Member |
| 6. | 6. Dr. M.G. Jackson,
Mirtola Ashram. | Co-opted Member. |

7.3 The Working plan of this sub-committee was to travel together to Dasholi Gram Swarajya Mandal (DGSM) and the Sukhomajri project and discuss our observations, insights and their implications on site and enroute. Unfortunately, this plan could not be followed, so that Shri Madhav Ashish and Dr. M.G. Jackson visited Dasholi Gram Swarajya Mandal on May 15, 16 and 17 (1985) and Shri P.R. Mishra, Shri Bansal and Dr. Kamla Chowdry visited on June 13 and 14, 1985. The collective visit to Sukhomajri project also did not take place because of the Punjab disturbances. However, most of the members excepting Shri Chandi Prasad Bhatt, had previously visited Sukhomajri and had discussions with Mishraji, Madhu Sarin, Deep Joshi and other key persons connected with the project.

7.4 The report briefly describes the Sukhomajri project and the activities of the Dasholi Gram Swarajya Mandal especially those related to the rehabilitation and management of uncultivated lands by village communities; identifies key elements in the success of these projects, considers replication of these projects and proposes an intermediary support agency as a buffer between voluntary agencies and government in the development of micro-watershed and related village developments; mentions constraints in the management of uncultivated lands by village communities and suggests some policy changes necessary and finally discusses the broader implications of these projects on hill development.

CHAPTER 8—Case 1: Sukhomajri Background

8-1 At the foothills of the Himalayas are the Shivalik, Garhwal and Kumaon hills, environmentally perhaps the most degraded hills in the world. Accounts of this area, only a century and half ago, speak of dense luxurious and vast forests. Drastic changes began to take place around 1830's when deposits of iron and copper were discovered which attracted private entrepreneurs as well as the state government for their exploitation. Coupled with mining were decades of railway building which called for high quality timber much of which came from the lower Himalayas. By the turn of the twentieth century, much of the dense forests had given way to boulders, deep gullies and chasms. After Independence, the building of dams, the widening of roads and other such development projects further deteriorated the situation. Increased pressure of grazing also accelerated deforestation and denudation of the hills. The Shivaliks even more so that Garhwal and Kumaon hills are now bare and barren, hardly able to provide even the subsistence needs of the people and their cattle.

8-2 With the cover of trees and grasses all gone the monsoon water comes down in torrents destroying villages and whatever else comes in its path. The villagers in these hills live in fear of the cataclysmic deluge that comes with each monsoon often carrying their villages and fields into the ever widening gorge or "choes" as the locals call them.

8-3 Sukhomajri, a small village of about 71 families, mostly *gujars*, is in the lower ranges or the Shivaliks. The village has about 240 acres of land, half owned by individual families, and the other half used as common land. The major portion of the catchment is owned by the Forestry Department who lease it to the villagers for grazing. Before the project the village had 411 animals consisting of goats, buffaloes and bullocks. Not enough was produced either in agriculture or in the surrounding slopes to feed the people or their cattle. Many men found jobs in the nearby cement or machine tool factory or in Chandigarh.

8-4 The *Gujars* of Sukhomajri trace their origin to seven families that came to the village eight generations ago. There are two *Jat* families also who have been in the village for about two generations. Historically they are poor cultivators and became very poor once the fodder from the trees and grasses disappeared. Most people in the village are illiterate and few children attend school.

8-5 Before the project the only water in the village came from a muddy rainfed pond in the middle of the village and a rapid drinking water supply from a nearby spring.

8-6 The monsoon water often played havoc with the village. In 1968, several acres of land had plunged 40-50 feet into a deep gorge at one end of the village, and since then the precipice of the gorge has been edging closer to the village huts.

8-7 The village had no irrigation water, no electricity, not even a bullock cart for there were no surpluses of harvested crops to be taken to the market. There were no vegetable plots, or fruit trees or fodder crops since all of these required water which they did not have. The wealth of the village was in their animals, none of them of superior breeds because these more productive animals could not survive with the fodder and water available. The village also produced wheat, maize and legumes but these were rainfed crops and often withered because of drought.

8-8 Whereas, the men of the village tried to find employment outside, the women spend most of their energies searching the surrounding countryside for grass and trees that could be cut for fodder and fuel.

Beginning of the Project

8-9 Chandigarh a city designedly Le Corbousier, has a large artificial lake. The residential mansions of the Governors of Punjab and Haryana are located near the lake. The lake water recharges the aquifers which feed Chandigarh with its water supply. The people of Chandigarh also use the lake for boating and for other recreational purposes. The lake is one of the major beauty spots and the pride of Chandigarh people.

8.10 The Sukhna lake^{*}, was built in 1958 and was 445 acres (180 ha) in spread and 28 feet (8 - 4 m) deep. Since the lake was created more than 60% of it has been filled by silt from the Shivaliks. The deepest point of the lake which was 14 metres was little more than 4 metres deep at the start of the project. The Chandigarh authorities had been spending lakhs of rupees each year in dredging and desilting the lake but each monsoon brought tons of silt back again.

8.11 The forest catchment area of the lake amounts to 3214 ha, 76 -3 % of the total catchment area. The surrounding villages graze their cattle in the forest catchment and have been doing so for centuries. Because of the large number of cattle grazing in this area it has led to severe soil erosion and consequently sedimentation in the lake. In an earlier attempt to conserve the soil the Forest Department had fenced the area and threatened to punish villagers for violations. These measures, as was to be expected did not succeed.

8.12 Around 1974 the Central Soil & Water Conservation Research and Training Institute (CSWCRTI) in Chandigarh was invited to discuss the problem of siltation and requested to do something about it. Shri Mishra and some of his colleagues surveyed the catchment area on foot. Their observations indicated that the major source of silt was in the higher catchment area which constituted 25% of the total catchment but contributed 80—90% of the total silt load. Shri Mishra recommended a number of check dams near the Sukhomajri village and the planting of *Acacia catechu* and bhabbar grass on contour trenches in the catchment area, *Dalbergia sissoo* in the gullies and other soil conservation measures. These were completed before the monsoon of 1976.

8-13 A second check dam near Sukhomajri was built before the monsoon of 1977, However, in 1977, the monsoon failed and the farmers saw their kharif crop of maize withering before their eyes. There was water in the dam and the farmers realised there was life-saving irrigation in it, for their crops. It was during this crisis that the farmers realised that the soil conservation work meant for Sukhna lake could also mean supplemental irrigation for them. Instead of an uncertain crop the farmers could have two assured crops. The mutuality of interest between the Chandigarh authorities, the CSMCRTI and its soil conservation work and the villagers became mutually reinforcing.

8 -14 Today Sukhomajri has[#] three rainfed reservoirs varying between 200 and 400 ft. in diameter. All the rainwater that falls on one side of the village is caught and channelled into the reservoirs and is then used for irrigating crops and for drinking water. The village people keep their grazing animals out of the watershed areas. Since the grazing animals have been kept out, the area has sprung back to life and is now full of new grasses, shrubs and trees.

8-15 Prior to the availability of rain harvested water, villagers were able to raise only a kharif crop, whose success depended on the duration and strength of the monsoon. With the availability of supplemental irrigation, the number of crop rotations has increased varying from 2 to 4. In terms of production[#], in 1977, there was 250 quintals of wheat, 500 quintals of wheat straw and 196 quintals of maize. In 1981 the production was 1015 quintals of wheat, 2031 quintals of wheat straw, and 356 quintals of maize. The milk yield too has increased from 2196 litres in 1977 to

* Sedimentation of Sukhna Lake, Chandigarh Status Report, 1982, CSWCRTI, Research Centre, July 1983.

Planning Commission, Tour Notes of Planning Commission Team unpublished document, December 1980.

4405 litres in 1981. The grass production in the catchment areas has increased from 200 kgs. in 1977 to 2500 kgs. per year in 1981.

People's Participation

8.16 For the management and control of the reservoir water, a Water User's Association (WUA) was proposed and accepted. A young management specialist was hired by the Ford Foundation to assist in putting the W.U.A. on a sound footing. After many rounds of talking to the villagers, and after much discussion, a system was established in which every member would be given equal share regardless of the land owned, landless too could be members and claim a right to irrigation water.

8.17 Another consultant hired was with the objective of working with the women of Sukhomajri, listening to their problems and urging them to take a more active role in the W.U.A and in conserving the watershed. The woman consultant also helped the village women build smokeless *chulas* for themselves. The women claim that their wood consumption was reduced by one third to half and that the inside of their huts has become more hygienic. The women of Harijan Nada have been providing 'technical assistance' in *chula* making to other villages as far distant as Himachal Pradesh. Because of easy availability of grass the women now have more time for growing vegetables, collecting babbar grass and making rope and other income generating activities.

8.18 It is clear from the Sukhomajri experience that exhortations for cooperation do not work especially if these are aimed at people who live on the margin of subsistence. The poor cannot stop grazing their animals especially when the animals are their mainstay of subsistence. When the Forest Department had fenced off the catchment area, the villagers found their way inside in spite of fines and threats. On one occasion, during the early part of the project, when a villager was told not to graze his cattle in the catchment area, he retorted "who are you to tell me not to graze my cattle here—my forefathers did it and so will I Only with increased productivity and increased milk yields resulting from supplemental irrigation, were the villagers of Sukhomajri anxious to invest in conservation measure to preserve and enhance their new way of life.

8.19 Another lesson that emerges from the Sukhomajri experience is that social and management systems appropriate to the new technology take time to evolve. All the key people involved in the project spent much time learning from the villagers, earning their confidence and respect before they could experiment and introduced new methods going against traditional ways of doing things. Without establishing mutuality of trust it would have been difficult to establish the new system of equitable water distribution and the management for its effective functioning and control.

8 -20 In conclusion, it can be said that the first phase of the Sukhomajri project (1974-79) was concerned in diagnosis of the problem and in building dams and largely improving the technical system. It was in this phase PVC pipes were laid so that water seepage and evaporation was minimum, sprinklers were experimented with so that more people could share the limited water. The second phase (1980-83) was in improving and ironing out the procedures and problems of W.U.A., in getting the women involved, and in establishing the social and management system of the new resource. In this second phase the Sukhomajri project was expanded in Nada and Harijan Nada so that further experience could be gained. In other words the experimental and the learning phase lasted almost a decade, with both governmental and non-governmental agencies playing key roles.

CHAPTER 9—CASE 2 : Dasholi Gram Swarajya Mandal

9.1 In common with the rest of the U.P. hills Garhwal has a long history of poverty exacerbated by increasing population with consequent denudation of village fuel and fodder resources. Foodgrain production is insufficient for even subsistence levels and men have been forced to migrate to plains for seeking employment. The women look after farming, livestock and the collection of fuelwood, fodder and water in addition to their household tasks. In the village panchayats not much attention has been paid to women's issues of fuelwood, fodder and water, the men who participate in these forums discuss issues relating to cash crops at the neglect of subsistence needs.

9.2 The workload of hill woman and the drudgery involved is extraordinary. She works 14 to 16 hours a day spending as much as 2 to 5 hours for collection of fodder and anywhere from 4 to 7 hours for collection of firewood (2-3 days a week). In addition, there is the chore of fetching water and in many villages they grind their wheat themselves because no power *chakki* is available within walking distance.

9.3 The Dasholi Gram Swarajya Mandal (DGSM) is a voluntary agency founded by Shri Chandi Prasad Bhatt, in 1964, at Gopeshwar, District Chamoli, Garhwal. It is an autonomous self-supporting agency, obtaining its funds from Khadi and Village industries programme, its own resin, turpentine and varnish units and a flourmill. Income from these activities is used to pay the salaries of about 25 workers. Since 1982 partial funding of eco-development camps has been provided by the Department of Environment and for the integrated Garur Ganga micro watershed development, the Planning Commission has given some assistance.

9.4 The floods and landslides of 1970 in the Alaknanda valley saw the DGSM engaged in relief work. The death devastation sharpened everyone's perception of the deteriorating environmental situation and the realisation that its major cause was deforestation of the hillsides. In 1973-74 with the leadership of the DGSM, the people started an agitation to save their forests. The Chipko movement played a significant role in saving the remaining tree cover in Reserve Forests from the area of the cultivators and the policies of the Forest Department. The other aspect of the Chipko movement, as led by DGSM is to undertake constructive work for the rehabilitation of the denuded hills and of village common lands.

9.5 The rehabilitation of denuded hills and forest lands is tackled by making village communities aware of the importance of tree cover and the protection it would afford to their villages. The DGSM has also pointed out the need and advantages of surrounding their cultivated lands by a protective wall, leaving a wide margin between the wall and the cultivated fields. This area is planted with trees of their choice and also yields fodder grass for hand cutting. The wall not only protects the cultivated area from wild animals but protects the trees and grasses from their grazing animals.

9.6 The eco-development camps are a major mechanism for sharing and communicating ideas. These camps are organised in villages, some 3 to 4 being run every year. There are 250-300 participants in a given camp, 75 per cent of whom are village women. Twenty to fifty outsiders—students, professors, social workers, environmentalists—also attend. The programme of the camps is one of discussion and *shramdan* through which wall building and tree planting activities are undertaken. There are spontaneous songs and other entertainment in the evening in which everyone participates, building strong relationships and commitment to each other and to the protection of their hills.

9.7 A unique feature of these camps is planning for village development. A blackboard is used to draw out a map of the village. Proposals are made for walling, tree planting, water pipelines, etc. These are discussed and finalised by all the participants in the camp.

9.8 To support the reforestation programmes DGSM has set its own nurseries and also uses schools for raising nurseries. Tree seedlings are made easily accessible to villages and given free.

9.9 In addition to reforestation of common wastelands, the DGSM's programme also includes the introduction of fuel-efficient, smokeless *chulas*, pit latrines and gobar-gas plants.

9.10 Efforts of the DGSM are largely concentrated in the 21 villages located in the very sensitive region of Garur Ganga, Pathal Ganga and Maina Gad tributaries of the Alaknanda river.

9.11 The key to the programme's success is the organisation of Mahila Mandals. These are informal, with no written constitution, but very effective nonetheless. As has already been mentioned, firewood, fodder and water are primarily women's concerns in these villages, and women consequently take more active interest in improving their supplies and thus reducing their drudgery. In the eco-development camps these issues are highlighted as also the need for women's control over the common lands. The Mahila Mandals have shown real capacity to take the management of village common land into their own hands, effectively opposing village and forest panchayats where their activities threaten the well being of the community. By ensuring the equitable distribution of grass and firewood produced on village common land, the Mahila Mandals ensure that all families of the village cooperate in the programme.

9.12 Another agency that has worked collaboratively with DGSM and has played a catalyst role is *Daliyon ka Dag-daya* (Friends of Trees). Member of *Daliyon ka Dagdaya* are men, women and local students. This agency not only participates in the eco-development camps but plays a key role in organising the Mahila Mandals.

9.13 There is a quiet revolution going on in the U.P. "hills. The women through their Mahila Mandals are awakening not only to deal with subsistence issue of fuel, fodder and water, but wider issues related to the well-being of their families, villages and of hill economy.

CHAPTER 10—Key Elements of Success

10.1 Both Sukhomajri and DGSM are exceptional projects providing new perspectives and insights in micro watershed and hill development. In this section we plan to discuss key elements contributing to the success of these projects.

Participation of Local Communities, especially Women

10-2 In both projects the involvement of the village communities has been absolute and the women's participation has been of key significance. In Sukhomajri when people realised that the dam water could be used for irrigating their crops, their commitment to preserve the watershed was there. Only when people saw the benefit accruing to them, were they in a position to provide cooperation in 'social fencing'. Participation did not come from exhortations or persuasion but from the realisation by the people that their own benefit was tied to it.

10.3 For people who live on the margin of subsistence, a change to a new system of land and livestock management can only be achieved if they can clearly see the benefits to themselves. It is difficult for the poor to stop grazing their animals especially when the animals are their mainstay of subsistence. As Seckler mentions in his paper*, "These people cannot save resources for the future through reduced current consumption nor can they direct resources from present production to invest in increased future production. Savings or investment is the difference between income and consumption. When people consume all their income, and even then consumption is only at subsistence levels, they cannot be expected to save and invest until their income is increased". With increased productivity resulting from supplemental irrigation and increased milk yields from better availability of fodder, the villagers of Sukhomajri are on an upward spiral, anxious to help in conservation measures to preserve and enhance their new way of life.

10.4 In DGSM the villagers realised that if protective walls could be built, not only will their crops be safe from wild and domestic animals, but there would be regeneration of grasses and protection of trees they planted. Participation and involvement was possible because of the tremendous need to reduce the drudgery in their lives. In other words, community participation is possible where the community can see the benefits accruing to each one of them—in the short run in the first instance. **The Village Organisation and Equitable Distribution**

10.5 In Sukhomajri the W.U.As were established to manage and control the water. Mishraji has renamed these associations as Hill Resource Management Village Societies (HRMVS). In Chamoli hills the Mahila Mandals became the key village organisation for management of the newly generated resources. In both projects the communities agreed to equitable distribution of water or grasses or bhabbar grass. There were examples in each project where the more privileged tried to get a bigger share but the threat of cutting the water was sufficient in the case of Sukhomajri to discipline the erring member. And in one of the villages of DGSM when the Mahila Mandal found that the Pradhan's family had taken the grass on the wrong day, the grass was confiscated. The Pradhan in retaliation registered a case of theft against two women of the Mahila Mandal. The women of the village met the District Magistrate and explained to him the nature of the 'theft' and said that they would all go to jail if anything was done to their two members. The incident and the stand taken by the Mahila Mandal clearly established the principle of equity and the authority of the Mahila Mandal over the management of common lands.

10.6 The concept of village people taking responsibility for their own development was very prominent in post Independence thinking about rural development. The *gram sabha* was set up as a democratic village institution to take up this responsibility. Cooperative societies of various sorts were also set up with the same basic aim. However, these village level institutions have been

* Sukhomajri—"a Rural Development Program in India" by David Seckler and Deep Joshi, The Ford Foundation, mimeo, 1980.

ineffective for a variety of reasons including political interference and corruption. Forest panchayats are too tightly controlled by the government bureaucracy to function effectively.

10.7 If we are to return to, and give new life to the concept of people taking development into their own hands, new organisational forms will be needed, we will need new organisations that are independent of government and that involve women. The replicability of the projects discussed depends entirely on the degree of success that can be achieved in setting up effective village level organisation.

10.8 Both in Sukhomajri and in DGSM villages we did not find much caste/class differences and therefore the local village organisation had a higher probability of being effective. How well the new village organisation will work in a multi-caste community or a community with large differences in land holding is difficult to say.

10.9 Both at DGSM and at Sukhomajri, the village organisation was non-government and independent. This is important because there will be situations when village people must oppose outdated government policies and laws in order to be able to push ahead with their development activities as happened in the Chipko movement.

Facilitating Organisation

10.10 The village communities need the help of a sympathetic service oriented organisation which assists the communities to move into new directions. Without the leadership of DGSM, the Mahila Mandals, the eco-development camps, and the rehabilitation of common lands would not have been possible. In Sukhomajri, the outside facilitating agency was the CSWCRTI, a government agency, with Ford Foundation also playing a facilitating role in collaboration with CSWCRTI.

In each case the leadership was able to bring together individuals with different skills, experience, abilities, position and relationships which helped in the success of the projects.

10.11 In each case the facilitating agency was able to attract exceptional people who were committed to working with the rural poor. They realised the importance of spending time with the local communities, understanding their problems and perspectives. Unless a relationship of mutual trust is established, which is time consuming, such projects are difficult to undertake. Flexible Funding:

10.12 Both DGSM and Sukhomajri had access to flexible and non-bureaucratic funding which was considered essential especially during the period of experiment and learning. The DGSM has used *shramdan* and their own funds to finance the development work they undertook. Only after 1982 did they receive some funds for their eco-development camps and integrated development of Garur Ganga from the Department of Environment and the Planning Commission respectively.

10.13 In the case of Sukhomajri funding for the dams, pipes, sprinklers came from a grant from the Ford Foundation to CSWCRTI for operational projects. A second grant in 1980 was for expanding the programme in Nada. The Ford Foundation also hired short and long term consultants to work on the project. These grants gave considerable flexibility in responding to the development needs of the project. Communication, Motivation and Learning

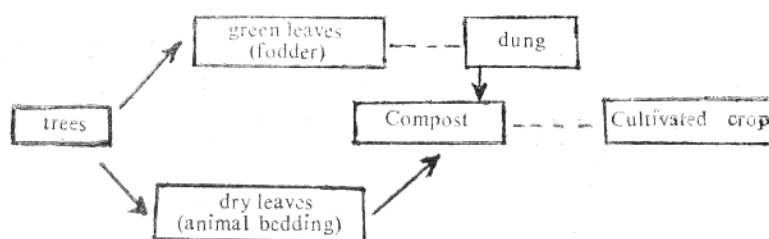
10.14 In the case of DGSM the eco-development camps are a major instrument in communication, motivation and learning for those who attend. The students gain a first hand understanding of the problems at the grass-root levels and the villagers gain a new understanding of their problems. The discussions are fruitful with active participation from all concerned. It is through these camps that the women learn what is possible and how the drudgery in their lives can be reduced. A tremendous sense of confidence is generated and the village people literally take their destiny in their own hands.

10.15 In the case of Sukhomajri too the village meetings and the W.U.A. meetings were key instruments of communication, motivation and learning. The meetings by village women to the use of smokeless *chulas* and the income generating activities connected with rope making.

Focus on Rehabilitation of Uncultivated Lands:

10 -16 It is significant that both projects developing independently of each other, recognised the over-riding importance of the degeneration of common lands and focussed their projects on their rehabilitation. In both projects the rehabilitation of common land secured the deteriorating subsistence base of the hill economy, that is, it may secure the supply of subsistence needs such as fodder, fuel and water. The weakness of most development programmes in hill areas is the neglect of this base and the almost exclusive attention to improving money income.

10.17 Uncultivated land is as important as cultivated, While food comes primarily from cultivated land, fodder, firewood, water, house-building materials, wood for agricultural and domestic implements and a host of other natural products come from uncultivated land. Even food production from cultivated land depends upon inputs of organic matter : and plant nutrients, deriving from uncultivated land via the chain.



Food production also depends upon firewood produced by uncultivated land, because in the absence of firewood, cattle dung is burnt, depriving the cultivated land of its vital inputs of organic matter and plant nutrients. The dependence of cultivated land on uncultivated is greater in the hills than elsewhere because of poor soil. Finally, in the hills irrigation potential depends upon the capture and storage of rain water, a function performed by uncultivated land. For all these reasons, uncultivated land has been termed a 'support area' for cultivated land.*

10.18 Further, most traditional cottage industries, as well as the new, small-scale industries visualised as a part of hill development, are based upon forest produce, such as bhabbar grass at Harijan Nada, the supply of which can only be secured through the rehabilitation and proper management of uncultivated land.

10.19 Rehabilitation of uncultivated lands also means more fodder, which will permit more and better animals to be stall kept which were previously "grazed. The individual family effectively regulates its animal members to its feed supply. For instance, in Sukhomajri with the change from grazing to stall feeding, buffaloes increased, cows decreased and goats almost disappeared.

10.20 In both projects rehabilitation is accomplished though purposive management, by replacing competitive exploitation by individual families with planned cooperative exploitation, The main elements of the management system are: planting and protecting of trees, regulating off-take and equitable sharing of benefits.

10.21 At Sukhomajri and Nada irrigation had been the catalyst for the change to a new system of managing uncultivated land. It must not, however, be assumed that the replicability of these projects is limited to areas where irrigation can be developed. Increased yields of fodder and firewood can be adequate incentive, as the experience of another village in the vicinity of Sukhomajri shows. In this village irrigation was not possible, but successful rehabilitation was nevertheless achieved. In the DGSM villages, increased yields of fodder and firewood, the prospect of future cash returns from fruit and nuts and environmental protection have been more than adequate to motivate people to protect and manage uncultivated land.

* Madhav Ashish in a seminar in New Delhi, January, 1984.

Watershed Management:

10.22 From Sukhomajri and DGSM projects it is clear that people have to be the focus of planning and therefore, the planning unit must be the village and the families in it. If we do not encourage rural people to manage the common lands to meet their needs of fuel and fodder, the watershed has no chance of survival. Only by increasing the productivity of the watershed in the interest of meeting local community needs will the watershed be rehabilitated and protected. These projects highlighted that people must be the focus of watershed planning and management.

The Bottom-up Approach

10.23 The two projects are examples of the bottom-up approach wherein rural people plan their own developmental belt with the help of governmental and nongovernmental agencies. In the eco-development camps of DGSM it is the people who decide what needs to be done with the support and the facilitating role of the outsiders. As people begin to take development in their own hands, they start realising many constraints that needs to be tackled. There will be conflicts with government to re-examine their policy about real rural development. The Chipko movement forced the government in re-examining the policy of tree felling in the sensitive area of Alaknanda resulting in a moratorium on tree felling. The Forest policy too needs to be re-examined and debated by the people and the recommendations made to safeguard the interests of the people who in turn would safeguard the forest interests. No amount of fencing or guards can save the forests if the people's interests are not involved. A top-down approach would have serious problems in safeguarding the watershed and the forests.

CHAPTER 11—Project Costs Project Costs

11.1 It is difficult to estimate project costs, especially when the benefits are in the nature of less drudgery for women, smokeless huts and environmental regeneration. However, in the case of Sukhomajri, David Seckler in his paper pointed out "At 10% discount over a 30 year horizon, the present value of the annual net return (9 -427 factor) is Rs.490,000. This amount divided by the total project cost of Rs.324,000 results in a favourable cost-benefit ratio of 1:1 -51"

11.2 Current economic norms calculate the cost of an irrigation projects on the number of hectares irrigated. At Sukhomajri the cost for 31 -5 ha. irrigated was Rs.10,375 per ha. This is considered very reasonable when compared to reported costs of upto Rs.25,000 per ha. on some of the big dams.

11.3 However, besides irrigation for the cultivated fields, the project has resulted in the protection and rehabilitation of about 100 ha. of uncultivated land in the watershed. If the regeneration of the uncultivated lands is taken into account the cost per ha. of the total land area effected by the project may be considered as low as Rs.2,465 per ha. Further, large sums running into lakhs of rupees were spent in desilting the Sukhna Lake which has reduced enormously after the reforestation and protection of the catchment area.

11.4 It would perhaps be difficult to obtain accurate figures for the costs of walling and tree-planting under the DGSM programmes. Work done by the eco-development camps could not be validly compared with similar costs under the Forest Department. It is claimed that the walls built by DGSM are far superior to Forest Department walls, and that the survival rate for the trees planted are higher. Saplings from the DGSM nurseries are distributed free. However, if the programme is to be extended and recommendations made for funding, it would be desirable to have reasonably accurate estimates of costs.

11.5 Estimates of benefits could be made, but the short-term benefits would have little significance in terms of cost-benefit ratios. In the Sukhomajri project, not only has irrigation largely increased grain yields, but the village is also reported to sell 1,500 litres of milk daily, and Harijan Nada is reported to make an annual sale of rope fetching Rs.20,000. The DGSM villages might be able to build up similar gains from fruit and walnut trees planted both by the DGSM and by the villagers themselves, but such gains will be relatively long-term, owing to the slow growth of trees in the hill climate. Other possible income generating resources, such as bamboo (Ringhal) basket-work and drug plants are at present inhibited by Forest Department policies and by marketing problems.

11.6 We have to appreciate that the DGSM programme are starting from much poorer conditions than at Sukhomajri. It has inferior soils, a harsher climate and more arduous problems of transportation and communication. It may, therefore, take more work, a longer time and larger funds to raise the village economy even up to full subsistence. To reach the point where moneymaking surplus can be generated may take longer still, particularly because as yet unproven products and markets may have to be found. These conditions must temper any optimistic hopes that programmes in the Garhwal hills could reach a self-sustaining level as rapidly as appears to have occurred at Sukhomajri.

11.7 Investments in such projects should not be considered on the basis of bankability. In areas where the rural economy is on a degenerative, downward spiral, that is, where each unit of consumption decreases the annual yield of materials, so that degeneration proceeds exponentially, the investments are for national good and for future generations. If the degeneration is not checked its repercussions may spread in what is known as the domine effect; communities migrating from devastated areas throwing unbearable burdens upon their neighbours resulting in further devastation. The point to be emphasised is that there is a difference between investments which stimulate growth in a viable community, and investments as part of a rescue operation to reverse a degenerative process. It needs to be pointed out that if the concept of bankability of projects comes between the rural communities and their capacity to regenerate their subsistence base then national subsistence itself will be jeopardised.

11.8 Both at Sukhomajri and DGSM it has been shown that a one time input, irrespective of its cost-benefit ratio has reversed a degenerative process and placed the village economy on an upward regenerative spiral and each further input increases the community's own capacity to invest and provide further inputs.

CHAPTER 12—Constraints on Rehabilitation of Uncultivated Lands

12.1 The Directive Principles of State Policy, set down in Articles 39 of the Constitution of India, provide that "The State shall, in particular, direct its policy towards securing, that the ownership and control of the material resources of the community are so distributed as to subserve the common good."

12.2 Village communities in general do not manage the material resources of uncultivated lands partly because of lack of appropriate community organisation for their management, and partly, because of ownership rights and control. Some forms of community organisation have been discussed in previous sections. In this section we discuss some of the constraint whose removal might require major changes in forest policy and perhaps even legislative and administrative reforms, if the well being of the hill community is to be ensured.

Village Rights within Reserve Forests :

12.3 In Sukhomajri and Harijan Nada there is no common land belonging to the village, all common land being Reserve Forests. Two problems have arisen; rights to the produce of the land, and lack of exclusive rights of a single village in a defined area of Reserve Forest. As Sukhomajri when grass regenerated as a result of protection by the people of the village, the Forest Department auctioned it, denying them the fruits of their investment of restraint and labour. At Harijan Nada, neighbouring villagers came and harvested the Bhabbar grass so laboriously planted and tended by the people of Harijan Nada, because all villages of the area share rights in common in the Reserve Forest land on which the bhabbar grass was planted.

12.4 A solution to this problem might take the form of changing Forest Department rules to permit village people greater rights to the produce of Reserve Forest land which they protect and plant and of delineating areas of Reserve Forest village-wise, so that each village has exclusive rights within a defined area of Reserve Forest.

12.5 A better solution would be to reclassify appropriate areas of Reserve Forest as village forest, since management of land for commercial forestry and for meeting villages' needs of fuel, fodder and minor forest products, as well as water, are not entirely compatible. In areas where village forests are no longer adequate to meet the needs of an expanded human population, reclassification would be desirable. If villages do not have enough land to meet their minimum needs, rehabilitation will probably not be possible through community action such as we are considering. In fact, what is needed, is a new, complete land settlement to ensure that every village has adequate land, reasonably nearby, to meet its basic subsistence needs. Safeguards would need to be applied to ensure that villages did, in fact, rehabilitate and manage the land properly for the benefit of all residents equally. Such a settlement, if safeguards could be ensured, would be the surest way of protecting and facilitating the improved management of the Reserve Forests that would remain. This would require a major policy decision to give priority to satisfying the rural people's basic subsistence needs from forest land over commercial exploitation.

12.6 The Forest Act of 1927 makes specific provision for the reclassification of Reserve Forests when increased areas are required to meet the subsistence needs of local people. This provision is removed from the draft Forest Bill 1980. In fact, the point of view from which the bill has been drafted is one of seeking more powers to protect existing Reserve Forests from the people. Coming at a time when the Forest Department should be enlarging its outlook to include an active concern for the rehabilitation of village forests by village people, this bill can only be retrograde in its ultimate effect.

Village Boundaries :

12.7 The point was made about the village communities lose their incentive to rehabilitate common land if the rights of benefits are disputed. Disputes over village forest boundaries are reported to be an obstacle to community forestry plantations (D.F.O. Almora, 1983—personal communication), Boundaries are officially demarcated by the Revenue Department's Bandobast.

However, it appears that the Department takes no steps to enquire into and to settle disputes. Disputes between villages therefore, have to be settled by the lengthy process of appeal in the Civil Courts. Means for speedy settlement need to be devised. The *Lok Adalat* or the 'people's courts' is a mechanism worth studying to deal with disputes of village boundaries.

Rights of the Individual

12-8 Problems might arise in respect of the power of the community to restrain the activities of the individual on common village land. Forest panchayats, established by law, have punitive powers over individuals who damage the panchayat forest, even though individual rights were once exercised in these forests. But the voluntary association of persons, such as the Society at Sukhomajri and the Mahila Mandals in the DGSM villages, have no legal standing in respect of their control over dissenting individuals. At Sukhomajri, the Society has so far been able to use the threat of deprivation of irrigation water to restraint individuals from grazing their animals on the land the Society is rehabilitating in the community's interests. If anyone were to ignore this threat, it might require a high level court case to decide whether the majority in a community can legally restraint a minority from actions construed as harmful to the majority's interests. The Society's principle that all members shall have an equal share in the produce of rehabilitated land would be a strong point in the Society's favour. But, since membership is voluntary, anyone who resigns or is deprived of his membership, would appear to be deprived of both his share under the Society and his rights in common law.

Legal Status of Societies

12.9 The point was made earlier that new village organisations will need to be set up in most villages to tackle the task of rehabilitating and managing village community land, because existing gram sabhas, forest panchayats, cooperatives, etc. have become ineffective. However, these existing bodies are constituted by government, while the Societies and Mahila Mandals we are considering are not. Conflict over which body has the right to manage common village assets, and to receive revenue generated from those assets, is a real possibility. Such conflicts could entirely paralyse any attempt at community management of village land.

Marketing

12.10 In some of the DGSM villages people have planted citrus and walnut trees in addition to fodder and fuelwood species on the slopes and on their uncultivated land. Their experience of marketing the citrus fruit, a perishable commodity, has been dismal. In Harijan Nada the rope makers also had a difficult time finding a suitable market for their rope. However, being close to Chandigarh they have been able to make some marketing arrangement. Were Sukhomajri not near Chandigarh, the marketing of milk, its chief saleable produce, at remunerative prices would pose a problem.

12.11 For hill development along the lines of Sukhomajri and DGSM projects there will clearly be a need of marketing assistance if village communities are to be helped to move from below subsistence farming to economic self-sufficiency through cash crops and village produce and perhaps to generate a cash surplus or savings. How such assistance can be provided is discussed in the next section. The National Dairy Development Board has recently undertaken the marketing of fruit and vegetables, in addition to the marketing of milk and vegetable oil. It might be worthwhile to study their approach to see its suitability for marketing produce from the hills and the rural areas.

Population Growth

12.12 Throughout India, all development plans are overhung by threat of increasing human numbers. In the U.P. Himalayas there is still sufficient land, with only a marginal reclassification of reserve forest to village forest, were it all to be rehabilitated to meet the needs of the present population for fodder and firewood (Jackson, 1983). But if population continues to increase at its

present rate, all afforestable land (village forests and reserve forest) will be needed by the year 2025 (Nautiyal and Babor, 1984)*.

12.13 It might be argued that one reason for the failure of the family planning programme was our failure to implement the equitable social policies proposed in the First Five Year Plan (e.g. land reforms) that lack of social security has driven the rural poor in particular to find economic security in the earning potential of children. The projects discussed in this report exemplify the rural response to socially equitable programmes, where everyone benefits in terms of the direct availability of the materials of subsistence which are everyone's basic security. It is to be hoped that such programmes will have an effect on population growth rates in the future, besides, direct programmes such as better health care and population, and family planning education in schools.*

* Nautiyal, J.C. and P. S. Babor, 1984. Changing the role of forestry to meet the needs of Himalayan communities—How to avert an environmental disaster. *Interdisciplinary Science Reviews*, accepted for publication

CHAPTER 13—Project Replication: Need for an Intermediary Support Agency

13.1 How can projects like Sukhomajri and DGSM be supported, expanded and replicated? Should a separate intermediary institution be considered, and if so, what kind of an institution should it be? Much discussion took place among sub-committee members as to the nature of such an intermediary support agency. Should it be a government or semi-government agency or should it be an independent agency perhaps funded by government?

13.2 In the view of the sub-committee the limit to micro-watershed development on the lines of Sukhomajri and DGSM is not likely to be resources or technology but creating an appropriate structure and management on the one hand, and finding committed and dedicated people like Chandi Prasad Bhatt and Mishraji on the other hand.

13.3 It is important to consider institutional structures that can work closely and collaboratively with agencies such as DGSM and can earn their trust and confidence. It was the view of the sub-committee that a governmental agency will not do because of its rigid procedures, inherent lack of flexibility and the inaccessibility of the poor to bureaucracy.

13.4 In discussions with the leaders of Sukhomajri and DGSM projects, we were told that funds were a major constraint in spreading the model to other micro-watersheds. Funds are required to build the dams, lay pipes, build protection walls, buy cement for biogas plants, etc. but government procedures and the inherent indignity of related follow-up has discouraged many persons to avail themselves of government resources. Even when top authorities were very sympathetic the lower echelons of bureaucracy found reasons for delay and found many obstacles to the sanction of project funds. The rules and regulations involved in taking funds from government have discouraged many voluntary agencies taking advantage of government schemes.

13.5 Other services mentioned that voluntary agencies like DGSM need are (i) sources of information for getting technical, management and marketing advice, (ii) audio-visual materials especially relevant at the village level, (iii) documentation, (iv) net-working in terms of exchange of experience with likeminded agencies, and (v) a newsletter keeping them informed about government policies on the one hand and development experiences of other agencies on the other hand.

13.6 After considerable discussion and debate the subcommittee recommended establishing a non-governmental support institution, primarily to provide funds for the expansion and replication, of such 'models' in other hill areas. The function of such an agency would be to identify voluntary agencies and other NGOs, to assist in project proposals, and to provide grants to such agencies for watershed management and related village development. Such a non-governmental agency should be a registered Society. The name of the Society suggested was (a) Hills Local Imitative Support Centre (HILLISC) and/or (b) National Hill Resource Management Centre (NHRMC). It should have a Governing Board which should consist of 12 members, 6 representing voluntary agencies, 3 from government, and 3 independent members to be co-opted. The Chairman of the Board should be appointed in consultation with the Board members. The Executive head should be appointed by the Board. The Society should receive 50%-60% of its funds from government, and it should raise the rest from other sources.

13.7 It is important that the Society establishes norms of autonomy and flexibility. In this regard, choice of the executive director would be crucial to the success of the Society

13.8 The sub-committee also recommended supporting established agencies such as can provide the services mentioned earlier. Illustrative examples are the *Society for Promotion of Wastelands Development* (SPWD) for information about seeds, seminars for exchange of information and identifying problems, developing project proposals, providing information relating to technical, management and marketing help, development of audio-visual materials, etc; the *Centre for Science & Environment* (CSE) for net-working and newsletter, and other such agencies in other parts of the country. The idea is to keep HILLISC or NHRMC simple ^concept and management, and to use existing agencies with overlapping interests to provide the necessary services.

13.9 A team of 2 or 3 persons should be appointed to translate the idea into reality, and to work out the funds required for the Society and support services. The government should fund micro-watershed development and community management of hill resources through such an intermediary agency which in turn provides resources to grass root voluntary and other non-governmental agencies.

Chapter 14—Recommendations and Conclusions

14.1 What we have learnt from Sukhomajri and DGSM can be summed up by two quotations from Swami Vivekananda:

"All the wealth of the world cannot help one little Indian village if the people are not taught to help themselves."

"Take man where he stands and from there give him a lift. What can you and I do ? Do you think you can teach even a child ? You cannot. The child teaches himself. Your duty is to afford opportunities and to remove obstacles".

14.2 The above quotations are especially significant in relation to village level planning, micro watershed development, hill resources management and rural development in general. Planning must involve the people and the unit of management must be the village or a hamlet not an abstract watershed. Although village panchayats were established as democratic institutions, unfortunately, these have not functioned well for a variety of reasons. Much greater understanding is required of the rural poor, of class and caste differences and their impact on the kind of organisations that will work well at the village level. In Sukhomarji and Nada, three reservoirs were built in each village, so that each sub-group could have its own W.U.A. The Harijans of Nada have a separate hamlet and a separate W.U.A. which has been extraordinarily active not only in equitable water distribution but in growing bhabbar grass, rope making and building smokeless *chulas*. A shared concern and a shared way of life seems important for local organisations which work well.

14.3 A point that needs to be underscored is that in projects involving subsistence issues, and dependence on uncultivated and common lands, the involvement of women is crucial to the success of the project. Men are not interested in issues of fuelwood and fodder, these are part of the women's domain, and any regeneration of common and forest wastelands can only be accomplished with the active involvement and support of women, Any policy formulation in relation to fuelwood and fodder, and micro-watershed development, must take into account the role of women and the management of these resources by women.

14.4 Experience of Sukhomajri and DGSM, and a variety of other poverty programmes indicate that social and economic problems cannot be solved by crash programmes with large budgets. The marginal impact of such programmes has a second lesson : that efforts to deal with hill areas and backward communities must be comprehensive and long term. And it is not just capital but innovative problem solving mechanisms that would make better use of the leverage inherent in available resources.

14.5 With the growth of specialisation there is a widening gap between knowledge and action. The planners, administrators and scientists have knowledge in relation to soil and water conservation techniques and other scientific knowledge useful in the hills but the utilisation of such knowledge is not there. Utilisation of knowledge for the benefit of the rural poor, requires understanding of the poor and their psychology of fear, risk-taking, alienation, and trepidation of approaching the officials, and skills of organisation and social action. The gap between knowledge and action is a major concern of administrators and development activists. Certainly some of the most perplexing and urgent problems are not technological but human, organisational, social and political. It is evident that a governmental agency will not be able to work closely and collaboratively with the rural peer even with the best of intentions, and that an agency such as the DGSM should be the intermediary between government and village communities, and between knowledge and action.

14.6 In an earlier section we highlighted what we considered were key elements in the success of these projects. These elements are interrelated and interdependent: with bottom-up planning strategies there is participation of local communities; with equitable distribution everyone in the community is involved. An independent organisation at the local level can only be [supported by an independent voluntary agency, and such an agency must have flexible independent funds for it is often necessary to fight against government policies as the Chipko movement did and as may be necessary to fight the new Forest Bill in relation to their rights.

14.7 The cultivated and tin uncultivated lands too are interrelated and inter dependent, as has been amply shown in section 12. The rehabilitation of uncultivated lands which will mean more fuel and fodder, will also mean more productivity of cultivated lands, and greater participation of women.

14.8 At a future date when cultivated and uncultivated lands in the hills will mean more cash crops—vegetables, fruit trees, walnut trees etc. the incentive for participation will come within; availability of better marketing services, that can provide a better price to the producers.

14.9 Recommendations of the sub-committee for watershed and hill resource development are:

- i. Participation of local communities, especially women,
- ii. A village organisation to manage the resources,
- iii. Equitable distribution of resources amongst members.
- iv. A facilitating organisation which works closely with village communities e.g. DGSM.
- v. Horizontal and vertical linkages amongst villages students, teachers, between insiders and outsiders, between knowledge and action.
- vi. Focus on rehabilitation of uncultivated and wastelands.

14.10 A number of policy changes have also been recommended in the section on constraints to the rehabilitation of uncultivated lands. There is need to redefine village rights within reserve forests, to reclassify appropriate areas as village forests and redefine village boundaries.

14.11 The government should give clear cut policy decision to give priority to satisfying the rural people's subsistence needs because there are conflicts between the commercial needs and subsistence needs of the poor in a shortage economy.

14.12 It is also recommended that an intermediary nongovernmental agency be established in providing flexible funding, to organisations such as DGSM and Sukhomajri. Further, it is suggested that funds be allocated to agencies that could provide technical managerial and information services to such agencies.

14.13 Education regarding environmental problems and their impact on the village economy needs to become an integral part of schooling. This will mean the development of appropriate curriculum and teaching materials. Special emphasis on non-formal education for women would be important for their active involvement and participation in hill resource development.

CHAPTER 15—Observations of [Planning Commission Team on Sukhomajri and [Dasholi Gram Swarajya Mandal Projects

I. Visit to Dasholi Gram Swarajya Mandal Project

15.1 Dr. C. H. Hanumantha Rao, Member, Planning Commission visited U.P. Hill Areas from October 11 to 16, 1985 with a view to get acquainted with the implementation of the integrated watershed management projects under the U.P. Hill Sub-plan and the functioning of the Dasholi Gram Swarajya Mandal, a voluntary agency for eco-development in the district of Chamoli. He was accompanied by Dr. S. L. Shah, Consultant (Hill Areas), Sarvashri N. L. Meena, Deputy Adviser (NEC) and S.S. Batra, Sr. Research Officer from the Planning Commission and R. P. Sharma, Project Director (watersheds), Sh. K. P. Singh, Additional Director (Agriculture) Shri Anil Berri, Deputy Director, Land Use Survey Directorate, Department of Forest and Shri Gairola, Deputy Development Commissioner, Garhwal Division from the State Government of Uttar Pradesh.

Dasholi Gram Swarajya Mandal (D.G.S.M.)

15.2 The Dasholi Gram Swarajya Mandal (D.G.S.M.) is a voluntary agency founded by Shri Chandi Prasad Bhatt, in 1964, at Gopeshwar, District Chamoli. It is an autonomous self-supporting agency, obtaining its funds from Khadi and Village Industries Commission, its own, resin, turpentine and varnish units and a flourmill. Income from these activities is used to pay the salaries of the workers. Since 1982, partial funding of eco-development camps and for the integrated Garur Ganga micro watershed development has been provided by the Department of Environment.

15.3 The DGSM has played a key role in motivating the local people to participate in various eco-development and soil conservation schemes with the main thrust on plantation and forest protection. It has a history of its own for leading a movement of eco-development. An interesting phenomenon in this area is that various Andolans or movements were witnessed in recent years, and the DGSM has played an active role there in. What is more, women have been invariably in the forefront. In its initial stage, the DGSM workers took to spread the message of "Bhoodan Movement" in the villages but with little success. In 1967-68 for instance, they launched a massive "antiliquor campaign". The Govt. finally agreed to their plea and Uttarakhand and Chamoli remained dry. The "Chipko Movement" was born in March, 1973 when the women folk prevented the contractors from felling trees in the forest. The genesis of the Chipko Movement has both an ecological and an economic background. If any one event was responsible for the tremendous support extended by the local people to the Chipko Movement and the afforestation programmes it was the 1970 floods in the Alaknanda Valley. The flood inundated an area of about 1000 sq. kms. of Chamoli district. It swept away six major bridges, 10 kms of motorable road and 24 buses. Much of the vegetal cover all along the Alaknanda in the above catchment was lost. This Alaknanda tragedy left a deep impression on the hill folk and, with it, soon followed the appreciation of the role that forests play in their lives. The DGSM workers discovered that the root cause of the flood was heavy deforestation, heavy rainfall and ill planned road construction in the area.

15.4 The DGSM launched its first direct action programme of forest protection in 1973 with a view to provide stability to the area. For creating awareness of the need for conservation, it has been imparting environmental education to the villagers through eco-development camps in the different villages of the region. Three to four camps are held every year with majority of women as its participants. The camps start with patriotic songs and prayers and an inspiring atmosphere is created. Discussions take place on the problems of the village and their solution. Shramdan is also done. Every one participates spontaneously and this helps in building strong relationship and sense of commitment amongst the participants. The major tasks in the camp include stone wall construction for protection of crop fields pasture lands and plantation on community lands, digging pits, planting saplings, raising nurseries construction of check dams for prevention of landslides etc In addition to re-afforestation of common wastelands, the DGSM's programme also includes the introduction of fuel-efficient, smokeless chulahs, gobar gas plants, solar energy. Having created the consciousness about protection and regeneration of their degraded lands the need for a village

level organisation is felt to manage common resources. Mahila Mandals have been set up as the key village level organisation for the management of common resources.

Mahila Mandals

15.5 The Mahila Mandals are informal, with no written constitution, but very effective institutions indeed. Firewood, fodder and water are primarily women's concerns and women take more active interest in improving their supplies and thus reducing their drudgery. For the equitable distribution of grass and firewood produced on village common land, the Mahila Mandals ensure that all families in the village cooperate in the programme. Women have learnt that the rehabilitation of common lands could ensure the supply of subsistence needs such as fodder, fuel and water.

15.6 D.G.S.M. has provided a methodology for people's participation. The leader is held in very high esteem. He has been able to inculcate a sense of discipline, a feeling of reverence. The decisions are taken in unanimity which ensures success of public participation. The other leaders including women may be moderately educated or even uneducated, but they are highly motivated and imbued with a sense of dedication to promote eco-development. They work as initiators, promoters, educators and implementors of eco-development projects. They emphasise virtues of self-sacrifice and the need to guide others by setting a correct example. They generate enthusiasm and confidence. Being members of the local community, they have a sound knowledge of eco-developmental issues derived through experience. They are immensely interested in the welfare of the local people and have a concern for the unemployed youth, who are well motivated and conscientised. The D.G.S.M. approach is a people's approach rather than a mere project approach.

15.7. In the afternoon of October 13, 1985, the team accompanied by Shri Chandi Prasad Bhatt, leader of the Dasholi Gram Swarajya Mandal (DGSM), reached Tungsa village. Encouraged by the Dasholi Gram Swarajya Mandal (DGSM), Gopeshwar, the village had prepared several nurseries of fruits and fodder trees. The land for nurseries was donated free by the villagers. The nurseries are owned and maintained by the village community. The plants are being distributed to the villagers freely. The keenness of the villagers in afforestation is reflected from the fact that they had undertaken an afforestation project of the Deptt. of Forest under which they planted 10,000 trees on a payment of Rs. 4,000. This money was used in purchase of utensils, durries, harmonium for use of village community. Caste being no bar, all villagers participate in the community programme. Another instance of community participation was that the villagers have themselves harnessed the water having created a water fall by diverting perennial stream and got the turbine and three kilowatt generator functioning at Tungsa. The entire project cost them about Rs.12,000. The cost of the project at present was stated to be about Rs.50,000. They have been able to generate power to give street lights in their village, to run the flour mill, oil expeller and the saw mill. It has saved the women folk of the village a several kilometres trek to the neighbouring flour mill. A meeting with the Mahila Mandal of Tungsa was held. Some of the important problems faced and the suggestions made by them are listed below:

- i. A lot of citrus fruits particularly malta and kagji lemon were being produced in the area, but due to lack of processing/marketing and other infrastructural facilities these were being sold at throw away prices. As a result, the orchardists were not getting adequate returns on their investments. The villagers, therefore, sought assistance for setting up a fruit processing unit at their village. The Acting District Magistrate (Joint Director, Industries, Garhwal Division) informed in the meeting that their Industry Department would provide loan up to Rs.1.20 lakhs for setting up the fruit processing unit. They were asked to submit the project proposal to that Department. It was further stated that a cold storage plant was also being set up by the Department of Industries in the area.
- ii. Opening up of a high school in the village
- iii. Setting up of a hospital at a Central place
- iv. Opening up of a stitching/knitting Training Centre

- v. Facilities for soil testing
- vi. Primary school in village Kathoor as the children have to cross two rivers to reach the school in the neighbouring village. As a result many of the children attend the school at a late stage or remained illiterate
- vii. Due attention for the development of fisheries
- viii. Representation of women in village panchayat
- ix. Vocational education relevant to hill condition

15.8 The Team visited village Bachher in the evening. This village also had a big nursery of fruits and fodder trees. The women of the village were very active in Chipko Movement. For instance, 200 women of the village had opposed deforestation. During the discussion with the Manila Mandal, it was stated that the main problems faced by the village people were; (i) protection of crops from wild animals particularly wild boar and parcupine and of livestock from tigers (ii) lack of irrigation facilities despite abundance of the water resources (iii) upgradation of their junior high school to high school and repair and maintenance of its buildings.

15.9 On October, 14, 1985, the Team after seeing the afforestation programme of the DGSM around Gopeshwar reached Landsidhar and therefrom walked for about 10 Kms., to and fro, visiting Tapowan and Dwing villages. At a meeting with the village people of Tapowan, it was suggested that hostel facilities at the school be provided for the boys and girls as they were to walk 10-12 kms. to and fro, from their houses, The school should be upgraded to the intermediate college level.

The village people expressed that the proposal to construct another rope bridge near the existing one should be dropped and a motorable bridge may be constructed. They were of the view that construction of a motorable road of about 5 km. length would connect several villages to motor head and help them to market their produce particularly citrus fruits and soyabean. These views were also strongly endorsed in the meeting of Dwing, village people. In Dwing village, the Team witnessed solar energy system used for street lighting and gohar gas plant and smokeless; chulah for domestic energy purposes. The village was having good orchards of citrus varieties. They had also planted 40,000 walnut trees and raised stone walls around their fields and pasture lands with the assistance of DGSM. It has helped them increasing yield of crop and fodder. Prior to this, wild bear and other animals used to destroy the crops, agricultural land were turning into waste land and there was constant tension in the village. With the building of the wall, the wasteland has been planted with citrus and fodder trees and the women, no-longer have to walk 3-4 kms. in search of fodder. The men no longer have to stay up during nights to drive away wild animals from the fields. They had also a system of equitable distribution of grass raised in community lards. It was stated that soyabean could be a major crop in rain fed areas provided remunerative prices and marketing facilities were ensured.

15.10 A meeting with the District Officers of various Departments was held in the Collectorate at Gopeshwar (District (Chamoli) on October 15, 1985 to interact on the various issues/problems raised by the village people during the visit of the Team, Giving his impressions of tour, Member, Planning Commission stated that the basic needs of the hill people were fuel,, fodder, drinking water, primary education, health care, construction of water storage tanks and irrigation channels, marketing facilities for horticultural produce. One of the suggestions of DGSM villages was that the existing system of giving contracts for afforestation projects by the Forest Department should be abolished. The work should be entrusted to the village community. It was evident from the work done by the village youth and the Mahila Mandals that they were capable of doing such jobs.

15.11 In regard to the question of entrusting the work of the afforestation to the village community, the Divisional Forest Officer stated that according to U.P. Govt. order, there was no provision to give contract to the Gram Sabha exceeding Rs.7,500. As the cost of the most of the projects exceeded the fixed limit of Rs.7,500, it was necessary to increase the limit. It was

observed that under the IRDP, NREP, RLGP, the works amounting to Rs.1 lakh on muster roll basis were being undertaken. It was felt that the Forest Deptt. G. O. "may be examined with a view to explore the possibility of undertaking works on IRDP norms. This would help involving people which, is necessary for success of any development programme.

15.12 In his concluding remarks, the Member, Planning Commission, stated that in the District of Chamoli under the auspices of the DGSM, the people were highly awakened and a movement of eco-development was underway. The District Officers should take advantage of this awareness and involvement of the people in carrying out their Departmental programmes. He expressed that officers should be rewarded suitably for their good work done in remote and inaccessible areas. Procedures and rules should not stand in their way as these could be suitably changed.

Conclusion

15.13 Based on the above observations on the Government sponsored and the DGSM projects, the following conclusions emerge for successful implementation of the integrated water-shed projects:

- (i) The plan formulation should start at village level' converging on the watershed level. The two should be taken as complementary.
- (ii) The people must be the focus of watershed planning and management and participation of local communities especially women with a committed and dedicated leadership should be ensured.
- (iii) A village organisation to manage resources is needed. The State Govt. is to decide what the best form of local level organisation for people's participation would be however, since people have lasting interest in their resources, they should be trusted. It should be left to them to decide what kind of organisation would suit them most. The D.G.S.M. is one model for people's participation. Whatever may be the organisational form it should be the main vehicle for people's participation. It should not substitute the functions of any of the line departments but should assist them in the improvement of design as well as performance. It should effectively liaison and hold dialogue with line department functionaries and suggest necessary adjustments in the programme and its implementation.
- (iv) The shortage of fuel, fodder and water are the major problems in the hill areas and the burden of it falls on the women who have to walk two to three kms. along steep cliffs and jungles in search of them. Therefore, the subsistence needs of the people for fuel, fodder and water have to be met first. Conservation should become possible with fulfilment of this prime requisite. Providing social amenities like education, health care and family welfare, drinking water, bridle path and foot bridges and other communications facilities would not only improve the quality of their life, but also induce people's participation.
- (v) There is need to train multi-purpose workers at the watershed level and put them under the supervision of the project Director who should be vested with adequate powers for implementing the integrated watershed management programme.
- (vi) The people's organisations by their very nature and composition may often lack scientific and technological capabilities and expertise. Watershed management needs scientific information and appropriate technology for which a professional approach is needed. Collaboration and effective liaisoning with various R&D Institutions preferably those located in the region are very desirable.

II. Visit to Sukhomajri :

15-14 The Planning Commission's team comprising Dr. C.H. Hanuroantba Rao, Member, Shrimati P P. Trivedi, Adviser (State plans) and Dr. Virendra Kumar, Consultant (Hill Areas) visited Sukhomajri Watershed Rehabilitation Project in the state of Haryana on 23rd October, 1982. This small watershed is a part of the 900 kms. stretch of Shivalik tract of low hilly range.

The project has been sponsored by General Soil and Water Conservation Research and Training Institute's Regional Research Centre of ICAR at Chandigarh.

15.15 The team was accompanied by Shri P.P. Caprihan Chief Secretary, Haryana State Government and Shri P.H. Vaishnav, Financial Commissioner (Development), Government of Punjab, Shri Kulwant Singh, Planning Secretary, other officers from the, Forestry, Agriculture and Irrigation Departments of Haryana and Punjab Governments.

15.16 The visit aimed to make first-hand observations on the Sukhomajri watershed project in the denuded Shivalik Hill tracts which could be taken up as a model for large scale replication in all watershed areas. This region for over a century and a half, had undergone systematic deforestation and consequently, lost its water harvest and recharge properties. Instead of offering perennial source of water for a variety of human activities, it has become a zone of drought and flash floods. Instead of gradual release of minerals from the hills, enormous quantities of debris and silt flow down to destroy vast stretches of fertile agricultural land. Consequently, the inhabitants of this tract have come to live as scavengers at bare subsistence level; others migrate to cities to work as labour and live under a variety of deprivations in slums.

Sukhomajri project

15.17 Dr. P.R. Mishra, Officer-in-charge of the project explained to the group the technological measures undertaken, the socio-economic benefits which accrued out of it, and the emergence of new social consciousness among the local inhabitants, during the tenure of the project.

Social Fencing

15.18 It is a unique experiment in that the reforested area. was not cordoned off by the barbed wire fencing to prevent grazing and other human interferences. Dr. P. R. Mishra, the officer-in-charge, explained that the- area has instead been placed under, 'social fencing', a novel concept by which the people voluntarily decided not to allow grazing in the catchment area. The periodic removal of grass has been permitted for stall-feeding of cattle and for other economic purposes but not cutting of the trees or even lopping of leafy branches. Water Harvest

15.19 The area received approximately 1200 mm of rain during summer and winter monsoon. Earlier the entire water was lost in the form of flash floods in Sukhna Choe leaving the watershed dry during the non-monsoon period of 8-9 months.

Water Distribution System

15.20 With the availability of water to support irrigation, it was possible to raise crops other than during the monsoon period. The project helped in setting a Water User's Association of 10 members, including 2 non-resident members. The WUA decided to provide equal quantity of water by rotation to the head of each family by following coupon system. The benefit is equally shared irrespective of the size of the land-holding. Even the landless persons have the same share and therefore have strong stake in the conservation, protection of the watershed and restoration efforts. A coupon holder is free to sell his share of water to others who may need extra water. The amount collected by the association is being used for supporting the maintenance of the water supply system.

15.21 The gravity-run water is distributed by underground steel-pip; lines laid 20 metres apart. For each field there is a simple water-measuring device for the quantity of water utilised. By flexible hose, low pressure sprinklers have been used to irrigate the fields.

Key to the success of the Project

15.22 The key role for collective social cooperation was played by water harvested during rainy season and stored in the first stage reservoir. This water was made available for irrigation purposes and distributed equally to all the villagers. It was a revolutionary approach, turning "Warabandi" into "Hakabandi". It ensured social justice to all the inhabitants who, in turn, agreed to put themselves under an unwritten pledge of protecting the watershed. The defaulters are punished by the village panchayat. A defaulter loses his right to water. This voluntary moral and

social binding, imposed upon themselves by the people to protect the catchment area, again has been a unique feature, which led to the success of the programme. This concept appropriately named as 'social fencing' proved to be a much more effective barrier than the usual barbed wire fencing.

Conclusion

15.23 The field visit to Sukhomajri watershed Rehabilitation Project was a convincing verification of the concept that ecological and economic securities are clearly inter-dependent. That given the bleak panorama of 900 km. stretch of Shivalik hill tract and its recently gained propensity for hurling recurrent misfortunes in the form of flash floods, disrupting communication system, turning fertile agricultural land into wasteland of infertile stretches of debris and silt, drastically reducing the functioning life-span of expensive hydro-electric dams and irrigation system, loss of human life and colossal economic damages, this project gives the hope that nature when treated with due wisdom and care continues to be the ultimate "benign source to sustain the diverse life phenomenon.

A Viable Development Model

15.24 That the Sukhomajri and the satellite Nada Village project have offered a 'viable model, with comparatively low financial inputs, short gestation period and it has short and long term continued benefits, for strengthening the ecological as well as economic base concurrently.

Simple Inexpensive Technology

15.25 The 'soil Conservation and reforestation technology us simple, not requiring heavy investment in costly equipment or heavy machinery and other infrastructure like large building complexes etc.

The sun-light as the Energy Source

15.26 The source of energy, the abundant sunlight is the prime mover of this plantation based rural industry with its multifold environmental and economic benefits.

Socio-psychological Benefits

15.27 Besides, the ecological and economic benefits to the land and the poverty stricken people, this activity has brought harmony, cooperation and a sense of togetherness and optimism, among the people. We are well aware of the numerous social conflicts and atrocities and economic imbalances in rural and urban India brought by developmental projects in certain sectors. The people showed the ability to take right decisions collectively to enforce social discipline and provide social justice and equity for all. This socio-psychological gain is as significant as other obvious economic gains. The project is not a text book project, rather it has evolved as a gradual learning process leading towards clearly visualised ecological and socio-economic goals.

Need for Institutionalization

15.28 It is, therefore, highly desirable that the Sukhomajri watershed Rehabilitation project should be replicated on large scale, in the 900 km. belt of Shivalik hill tract, stretching from Jammu and Kashmir in the West to Kumaon hills in the East. However, to organise the scattered sectoral activities and finances in different States, it would be necessary to suitably institutionalise the process, among the 5 participating States, for coordination, funding and technical support from different sources.

Stages in the Watershed Rehabilitation

15.29 The Watershed rehabilitation would essentially follow two -developmental stages:

Stage I : Restoration of the Watershed

It would involve all the present ongoing activities as seen in Sukhomajri project i.e. integration of soil conservation engineering, reforestation, water harvest and human development.

The ecological objective of this developmental stage is to bring a drastic reduction in the silt-debris flow to prevent sedimentation of water bodies and degradation of agricultural land and severity and frequency of flashfloods in plains.

The social objectives is to upgrade the economy of the inhabitants, as situated, without any displacement of population..

Stage II : Re-activation of the Watershed Hydrology

This stage involves two inter-linked steps:

The natural vegetation should be allowed to reach the 'climatic climax'-this ecological term refers to the final stage of the process of plant succession i. e. under the given ecological" factors the natural state of vegetation beyond which it cannot transcend to any other stage.

Our academic knowledge is rather very fragmentary and inadequate, therefore, this aspect needs intensive inter-disciplinary research, for the understanding of this process in nature and its replication on large scale. This is a challenging field of research for the Universities and other scientific institutions located in the region.

The step (1) will gradually lead to the reactivation of the watershed to harness the atmospheric precipitation to recharge the underground storage and its gradual release in the form of perennial springs and to sustain the natural waterflow in the river channels originating in the watershed. The drying of hill springs and streams has caused great concern. This aspect of watershed restoration would need sustained efforts for a period of 2-3 decades, therefore, needs long term comprehensive integrated developmental planning for the entire region.

Urgent Need for Organised Action

15.30 The Stage I, in the form of Sukhomajri project is a fairly complete and successful model emerging out of the ICAR operational research project, should now be taken up as a development model for Shivalik hills and other hill tracts which have similar topography and agro-ecological situations. With the growing national concern for loss of forests, scarcity, of fodder, fuel and increasing incidence of flash floods, droughts quick thinking and organised action are needed on part of the State Governments sharing the Shivalik hill terrains.