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DOCUMENTATION

In this section on DOCUMENTATION, it is proposed to print summaries of important reports of ad hoc committees, set up by the Central or State Governments, relating to agriculture, forestry and fishery economy of the Indian Union as well as the individual States. Obviously, this section will appear only when such reports are summarised. Readers are requested to bring to the notice of the Editor such reports, as and when they become available.

Report of the Technical Committee on Drought Prone Areas Programme and Desert Development Programme

(Chairman: C.H. Hanumantha Rao), Planning Commission, Government of India, New Delhi, 1994. Pp. 73.

[This Report includes five chapters and 4 annexures. The summary presented here consists of extracts of the passages from the chapters and summary of recommendations (Chapter 5) of the Report.]

The Ministry of Rural Development, Government of India constituted in April 1993 a Technical Committee on Drought Prone Areas Programme (DPAP) and Desert Development Programme (DDP) under the Chairmanship of Professor C.H. Hanumantha Rao. The Technical Committee submitted its Final Report in April 1994. The terms and reference of the Technical Committee were the following:

(i) To review and suitably modify the existing criteria for identification of areas to be covered under DPAP and DDP for inclusion or exclusion of areas and evolving suitable well defined criteria for measurement of drought proneness and desert conditions.

(ii) To review the programme contents, methodology of planning, scale and pattern of funding and the administrative structure of DPAP and DDP at Central, State, District and watershed levels and recommend appropriate modifications wherever necessary and suitably modify the present list of eligible and ineligible activities.

(iii) To examine the possibilities of integrating DPAP and DDP with related area development programme such as National Watershed Development Project for Rainfed Areas (NWDPRA), National Wastelands Development Programme (NWDP), Poverty Alleviation Programmes and Minimum Needs Programme, etc., and recommend a suitable strategy for such integration.

(iv) To examine and identify relevant technologies for dryland farming especially those relating to cropping pattern and vegetative barriers and recommend directions of research and procedures for transfer of available technology to DPAP and DDP areas.

(v) To recommend measures intended to promote the role of Watershed Committee, Pani Panchayats, Non-Governmental Organisations (NGOs), etc., in order to encourage widespread participation of people and ensure greater accountability of funds and sectoral departments to people's representatives.

(vi) To examine the modalities to ensure that the DPAP/DDP resources are not only integrated with other area development and beneficiaries oriented programmes but are also used as supplementary and additional funds.

CHAPTER 2: HISTORICAL BACKGROUND

Substantial areas of our country periodically experience droughts leading to considerable loss of agricultural production and livestock wealth, besides causing misery to people inhabiting these areas. Large sums have been spent by the Government for providing relief after the occurrence of droughts. But, such expenditure has not helped to solve the basic problem of increasing the productivity of these areas by conserving soil and moisture and thereby reducing the impact of the severity of the droughts to the human and cattle population. Systematic efforts at long-term ameliorative measures to tackle these problems of drought started only after planning for economic development was launched in the country. [2.1]*

The origin of the Drought Prone Areas Programme can be traced to the Rural Works Programme launched in 1970-71 with the object of creating assets designed to reduce the severity of drought in affected areas. The Programme spelt out long-term strategy in the context of the conditions and potentials of the drought prone districts. In all, 54 districts in the country together with parts of another 18 districts contiguous to them were identified as drought-prone for purposes of the Programme. The Programme covered 12% of the country's population and nearly one-fifth of the area in the country. Labour-intensive schemes such as medium and minor irrigation, road construction, soil conservation and afforestation were taken up under this Programme. The Mid-Term Appraisal of the Fourth Plan redesignated the Programme as the Drought Prone Areas Programme. [2.3]

The Fourth Plan continued to lay emphasis on dryland farming technology. For this purpose, All India Co-ordinated Research Project for Dryland Agriculture, later renamed as the Central Research Institute for Dryland Agriculture (CRIDA), was set up. Twenty-four pilot projects were started to serve as training-cum-demonstration centres for application of technology relating to soil management, water harvesting, improved agronomic practices, drought-resistant crops, etc. [2.4]

The Programme in the Fifth Five Year Plan followed the strategy and approach of integrated area development laid down by the Task Force constituted by the Planning Commission in 1971 under the Chairmanship of Dr.B.S. Minhas, then Member, Planning Commission. The Task Force recommended that the Programme should be based on resource endowment analysis and potential for development of the project areas. It recommended that the Programme should aim at integrated development of agriculture with focus on conservation, development and utilisation of land, water, livestock and human resources in an optimum manner. The need to provide more stable income and employment to the weaker sections of the rural society was also emphasised. [2.5]

In the Interim Report of the National Commission on Agriculture (1974) the hot desert areas were identified and it was suggested that a development programme consisting mainly of afforestation and livestock development should be taken up. In its final Report, the National Commission has suggested that the problem of the cold desert areas of Jammu & Kashmir and Himachal Pradesh should be studied in depth. The Desert Development

* The number in brackets denotes paragraph number in the Report.

Programme (DDP) was started in 1977-78. [2.6]

The DPAP and DDP were reviewed by the Task Force set up by the Ministry of Rural Development under the Chairmanship of Dr. M.S. Swaminathan. The Task Force in its Report in January 1982, recommended certain modifications in the coverage of these programmes based on certain objective criteria evolved by it. While the on-going approach and strategy were reiterated, the scope and the objectives of the programmes were re-defined. Emphasis was laid more on productive agriculture, dryland as well as irrigated, and vegetative cover. Greater stress was given on the strengthening of the land-based infrastructure including pasture and fodder resources. The DPAP was withdrawn from areas covered under DDP as the programmes have similar objectives and contents. It emphasised the need for planning the programmes on a watershed basis in an integrated manner. Thus, the objective of ecological restoration through proper land and water management was emphasised in the programmes. Instead of beneficiary oriented schemes, the Task Force recommended the provision of subsidy on predominantly area development schemes irrespective of the size of the holding and for schemes involving community participation such as farm forestry, water harvesting, etc. [2.7]

The main thrust of the programmes in the successive Plans continued to be income generating and infrastructure oriented schemes and the scope of the activities taken up under the programmes became sufficiently wide to cover expenditures on staff and establishment, feed mixing plants, liquid nitrogen plants, veterinary hospitals and dispensaries, construction of road for transportation of milk, cross-breeding programmes, establishment of livestock and poultry farms, silk rearing units, ground water survey, purchase of rigs, etc. In the process, it was observed that the programmes deviated considerably from the avowed objective of ecologically integrated development of drought-prone and desert areas through drought-proofing and control of desertification. [2.8]

The implementation of the programmes were closely reviewed in June 1987 by the Central Sanctioning Committee (CSC). The inadequate impact of these programmes was attributed to the undertaking of wider range of activities which were neither properly integrated nor necessarily related to the core objectives of the programmes. It was also felt that the low levels of investment in widely dispersed areas, implementation of schemes without proper feasibility studies, diversion of funds to unapproved schemes, high administrative expenditure, etc., had diluted the focus of the programmes. It was, therefore, decided to narrow down the range of activities under DPAP and DDP so as to sharpen the focus of the objectives to be achieved. It was decided that the main thrust of the programmes should be on activities relating to soil conservation, land shaping and development, water resources conservation and development, and afforestation and pasture development. It was decided that at least 75% of the annual allocation should be earmarked for these activities, while 15% of the funds were allocated for activities in minor sectors like animal husbandry, dairy development, sericulture, horticulture, etc., which directly contributes to the basic objectives of the programmes. A maximum of 10% of the annual allocation has been earmarked for project administration. [2.9]

As regards the unit of planning and development, micro-watershed was considered to be the most scientific basis for optimum utilisation of available resources, in spite of several operational problems. It was felt that earnest efforts should be made to implement programme activities in identified micro-watersheds. [2.10]

The National Committee on DPAP and DDP which was set up under the Chairmanship of Dr. Y.K. Alagh in May 1988, was re-constituted with Shri L.C. Jain, Member (RD),

Planning Commission, as its Chairman. The Committee reviewed the programmes and identified deficiencies in their planning and implementation. In the light of the past experience of these programmes, the Committee discussed future strategy of the programmes and emphasised the need for new approach based on conceptual clarity of the goals to be pursued, capability of planning, methodology of implementation and involvement of people's representatives. The Committee also emphasised the approach of the Planning Commission under the Eighth Five Year Plan to provide greater scope for the people as well as Voluntary Organisations to articulate and stress their needs. The importance of decentralisation was highlighted. The Committee finally recommended the transfer of DPAP and DDP to the State Governments and suitable merger of these schemes with the State Plans. [2.12 and 2.13]

The Report of the Committee was examined by the Government and the recommendations about the transfer of the programmes to the State Governments was considered carefully. In view of the decision of the Cabinet on the proposal made by the Planning Commission that the recommendations of the Narasimha Rao Committee, which suggested that DPAP and DDP will continue as Centrally Sponsored Schemes, should be accepted, the recommendation of the Jain Committee that DPAP/DDP may be transferred to the States was not agreed to. Thus the DPAP and DDP were continued as Centrally Sponsored Schemes. [2.14]

Since the Jain Committee did not give any advice on the content of the programmes, and inclusion of additional areas which have been pending for a long time, a Technical Committee was constituted consisting of experts to go into the technical parameters, requests from the States for inclusion and exclusion of areas and modification, if any, in the programmes and their implementation. [2.15]

CHAPTER 3: IMPACT OF DPAP/DDP - A REVIEW

An expenditure of Rs. 1,470.92 crores has been incurred under DPAP and Rs. 468.50 crores under the DDP since the inception of these programmes upto September, 1993. The area treated under DPAP so far which comes to about 5 million hectares constitutes only about 10% of the geographical area of the blocks selected for DPAP. The area treated under DDP comes to only about 0.4 million hectares which accounts for only about 1% of the total area in the blocks selected for DDP. Although it would be necessary to cover only a part of the area in the selected blocks for treatment under the programmes, it is reasonable to conclude that a very large part of the eligible area still remains uncovered by the programmes. It becomes obvious then that with such a small coverage, one cannot expect to make a real dent in the development of drought prone and desert areas. [3.1 and 3.2]

Despite the fact that the DPAP and DDP have been in operation for almost two decades, it has been observed that the programmes have not made a substantial impact. On the other hand, it is widely believed that drought conditions in the country are increasing and ecological degradation is taking place unabated especially in drought prone and desert areas. The main reasons for this degradation have been large scale denudation of forest cover leaving the land vulnerable to soil and water erosion. [3.4]

Of the many factors responsible for the unsatisfactory performance of the programmes, the most important one is that under both the programmes, a wide range of activities not necessarily related to the core objectives were taken up in the past by spreading them thinly over a widely dispersed area. This tended to defuse focus on efforts to be made for achieving

the core objectives of the programmes. [3.6]

Though it has been accepted that watershed based integrated development programme is the basic means for drought mitigation and control of desertification, the programme works in the field have been undertaken more on sectoral basis and in isolated patches. Planning is still done on an ad hoc basis merely by arithmetical consolidations of sectoral budgetary proposals. At the district level, efforts are rarely made to appraise the proposals received from various sectoral heads and to prepare integrated watershed development plans. The concept of integrated land and water management on watershed basis through active involvement of the people which alone could improve the environment and productivity of resources was not duly focused. However, the Committee notes with some satisfaction that some States have initiated steps to plan and implement the programmes on watershed basis. [3.7]

There is no appropriate multi-disciplinary agency at the district, block and the watershed level to prepare integrated plans which could be taken up for implementation. Most of the schemes taken up are of ad hoc nature and without due consideration of cost-benefit ratios. Essential data which are crucial for watershed planning are rarely available with the planners at the district and block levels. Perspective planning for micro-watersheds is seldom done and the plans are mainly prepared on annual basis. [3.8]

Maintenance of the assets created has suffered, especially in respect of water-harvesting structures. In several places, beneficiaries were not motivated to assume responsibility for maintenance after the works are completed even when the benefits accruing from such works are substantial. Moreover, the concerned departments do not have adequate provision for maintenance in their budgets. As a result, the water harvesting structures were silted and otherwise damaged in less than three years of their completion. Except in rare cases, the participation of people was conspicuous by its absence either in the preparation of plans or in their implementation. However, where people have been motivated to participate from the inception, i.e., from the planning stage, their enthusiasm was visible and the structures were protected by them. [3.10 and 3.11]

The degradation of environment in the dryland areas is basically attributable to the increasing biotic pressure on the fragile eco-systems in the absence of adequate investments and appropriate management practices to augment and conserve the land and water resources. Population growth and poverty on the one hand and the pressures of rising demand from affluence on the other have been exerting powerful pressure on the eco-systems. In the dryland areas, the pumping of water has been proceeding at a faster rate than the rate at which groundwater is being recharged. This is on account of the availability of electricity at a flat rate regardless of the amount of electricity used for pumping water. [3.17]

The breakdown of traditional institutions for managing common property resources and the failure of new institutions to fill the vacuum have also been responsible for the denudation of natural resources. The outstanding examples of success at Ralegaon Sidhi and Adgaon in Maharashtra, Kabbalnala and Mittemari in Karnataka and Jhabua in Madhya Pradesh show that drought can be beaten with concerted efforts for development on watershed basis and active participation of local farmers who are willing to undergo sacrifices and share benefits. [3.18 and 3.19]

CHAPTER 4: FUTURE STRATEGY

Overview

One major lesson that has emerged from the experience of the working of DPAP and DDP is that these programmes failed to make the desired impact in areas treated not so much because of the wrong identification or inadequate allocation of funds, but mainly because of (a) poor and ad-hoc planning without any serious regard for watershed approach; (b) almost complete lack of people's participation; and (c) weak co-ordination between, and lack of integration among works undertaken by different agencies involved in the operation. The Committee has kept this in view while making recommendations for future planning and implementation of the Programme. [4.1]

There are wider forces operating in the economic system which have an adverse effect on the rural environment, particularly in the dry areas. Without simultaneously addressing such issues it would be difficult to counter the processes of degradation through programmes like DPAP and DDP alone. Conservation of natural resources has to be made privately profitable by providing necessary infrastructure, technologies and institutional back-up. Further, the pattern of socio-economic development and the set of macro-economic policies including the pricing of inputs which reduce pressure on natural resources, augment such resources by arresting their depletion are going to be critical for protecting the environment. The specific programmes like DPAP and DDP can make a visible impact only in such a favourable macro-economic setting. This calls for a reorientation of approach and strategy for the development of ecologically vulnerable areas. Greater attention has to be given to peoples' own strategies and their own indigenous technologies including the locally preferred plants so as to incorporate them in the programmes to mitigate the rigours of drought. Provision of adequate infrastructure and other facilities would be necessary to attract and retain the talented professionals and administrative personnel to service the developmental and the Minimum Needs programmes. [4.1.3 and 4.1.4]

Policies in the non-agricultural sector in such areas will have a close bearing on the protection of the environment by reducing biotic pressure. Establishment of wool-processing units and tanneries in ecologically vulnerable areas can raise the employment and income for local people and thus reduce nomadism and migration which will have favourable impact on environment. Development of crafts and other income earning opportunities will have the similar effect of reducing nomadism. All this would require the development of infrastructure and research in the evolution of location-specific technologies based on indigenous innovations including the tapping of solar and wind energy abundantly available in such areas. These have to be backed by a credit plan as an integral part of area development plan. [4.1.5]

Planning and Implementation

The Technical Committee reiterates that harmonious management, development and utilisation of land, water and vegetation resources on watershed basis, and the creation of complementary opportunities for processing and marketing of value added goods produced in such areas should be the essence of these area development programmes. The treatment plan for the watershed should include all categories of lands including private, village commons, Revenue and degraded Forest Lands. As far as possible the selected watershed

should be covering a village/hamlet. The Technical Committee is of the view that watershed development programme should be implemented with the total participation of the beneficiaries. This can be ensured by having a watershed development team (WDT) whose General Body shall consist of all the adult members of watershed area. However, for operational convenience the WDT shall consist of 10 members of whom at least 5 shall be women. The representation to SCs. and STs. in the watershed team shall be in proportion to their strength in the general body. It is also necessary to provide administrative and other support to the watershed development team. The team shall be assisted by 2 persons comprising a Village Level Extension Officer/Worker drawn from Agriculture/Animal Husbandry/Forest/Horticulture Department and, another preferably a Matriculate educated village youth selected by the beneficiaries of the micro-watershed. [4.2.1 and 4.2.8]

In any given year, only a micro watershed with about 500 ha. will be taken up for management and development. The assignment of watershed functionaries shall take effect six months previous to the commencement of the year in which the watershed is taken up for development. The functionaries shall undergo a multi-disciplinary training during the first three months and they will spend the next three months in survey and preparation of plan for implementation during the year of operation. It should be mandatory to make accounts public through the General Body of the WDT. While it would not be affordable financially to think of providing the services of block level field functionaries for each watershed, it may be a desirable proposition to create such Multi Disciplinary Technical Team of block level officers for cluster of watersheds and could be located in a centrally and accessible place like taluk or block headquarters to cater to the needs of the cluster of watersheds. [4.2.9 and 4.2.10]

While finalising the plans of the concerned States, the Planning Commission should ensure, through appropriate mechanisms, that in drought prone areas, the relief works are integrated with area development plans designed to conserve soil and moisture through the development of watersheds and to generate other income earning opportunities on a sustained basis which alone can mitigate the adverse effects of drought on a lasting basis. [4.2.11]

People's Participation and Role of NGOs

Barring a few exceptions, there have been no systematic efforts aimed at involving people of the areas concerned in preparing and implementing DPAP and DDP. For effectively ensuring people's participation in the implementation of DPAP and DDP, it is necessary to modify both the process of planning and implementation. The scope and contents of the DPAP and the DDP and the mechanism for their implementation are not widely known even to the beneficiaries of the areas in which they are being implemented. Hence, awareness-raising including dissemination of relevant information relating to the programmes is of prime importance. Voluntary Organisations are best equipped to undertake this task which is perceived to be the very basis for mobilising people's participation in the implementation of these programmes. [4.3.1 and 4.3.3]

The Committee is of the view that determined efforts and concrete steps are required to promote voluntarism in evolving and implementing DPAP and DDP. This would mean not only the involvement of the existing voluntary organisations who are genuine and competent, but creating conditions, through favourable policy and bureaucratic receptivity, for the proliferation of local groups consisting of motivated and dedicated people for undertaking such responsibilities. Hence, it would be desirable to move towards the goal of entrusting

ultimately 25% of watersheds to the voluntary organisations for the implementation of DPAP and DDP. Keeping this objective in view, the Committee makes the following specific recommendations for facilitating effective people's participation through Voluntary Organisations in the implementation of these programmes:

The State Governments concerned may constitute State Level Committees for the Promotion of Voluntary Action for DPAP and DDP. The Chief Minister of the State may Chair the Committee which may consist predominantly of representatives of established Voluntary Organisations and senior officers of the Government Departments concerned. A Committee at the district level under the Chairmanship of the District Collector consisting mainly of representatives of Voluntary Organisations may be constituted for the purpose. The District Level Committee may approve the project proposals including the financial outlays of Voluntary Organisations for implementing the programmes. Based on the decisions/recommendations of the District Level Committee, funds for implementing the programmes will be released to the Voluntary Organisations directly by the State Government/Zilla Parishad/DRDA (District Rural Development Agency), as the case may be. For effective mobilisation of local people's participation in the programmes, the Voluntary Organisations shall constitute Watershed Development Teams (WDT) for the implementation of the programme and shall share the accounts for the grants given for watershed development with the general body of WDT. The District Level Committee may periodically monitor the functioning of the Voluntary Organisations in the implementation of the programmes and take appropriate action in order to ensure that the programmes are implemented in terms of the approved project proposals. [4.3.4]

Programme Contents

The main thrust in the programmes should be resource regeneration/conservation for sustainable development. The programmes should have all the ingredients on resource inventory and management. The components should not be pre-determined, as at present. There should be total flexibility in this regard and the actual choice of the components should emerge from the watershed plans prepared by implementing agencies including beneficiaries. Only the financial norms per hectare be fixed such that proportionate funding be allowed depending on the project and the evidence produced by the sponsoring agency. However, there should be a negative list, i.e., activities to be discouraged, as approved by the District Level Committee. [4.4.1]

Some of the specific recommendations on the programme contents are given below: It has been observed that large amounts are being spent on minor irrigation works. However, it should be restricted by stipulating that money not exceeding certain amount to be specified by the State Level Committee should be spent on minor irrigation works and in 500-hectare watershed, about 2 or 3 small structures may be allowed. Bigger structures and Kolhapur Type wier should be avoided under the programmes. With the minor irrigation works, the groundwater exploitation is expected to increase. However, its use should not be euphoric, but allow only to tap the rechargeable water without exploiting the static water. Rice, sugarcane and other heavy duty crops should be strictly prohibited in these watershed areas. The groundwater, in case of extreme drought, should be only used for the existing orchards, if any, and be fully diverted as drinking water.

Renovation and maintenance of existing water harvesting structures in the selected watersheds may be allowed with only manual labour. No heavy machinery that displaces

labour should be used for desilting, etc. However, it should be the policy of the State Governments to persuade the community to maintain the structures created under the programmes by handing over such assets to them. The maintenance of plantations may be permitted for 5 years in arid ecosystems whereas, in DPAP areas, the cost of maintaining plantations will be provided according to the existing norms of 3 years.

The pricing of electricity should be rationalised with a view to discouraging overdrawal of groundwater. In this context, charges for electricity on the basis of consumption by the users as a whole could be experimented so that cost from individuals are duly recovered by the community. In tribal areas where rainfall is comparatively higher, emphasis should be given on efficient water harvesting through minor irrigation works. The implementing agencies should make conscious efforts to mobilise local people to make some contributions in the form of labour or material in the programme works. Since replicability is the main criterion in the area development on watershed basis for sustainability, the approach should be simple, easily implementable and cost-effective. In order to cover all the areas in the watershed, the subsidy on programme works should be given to all the beneficiaries irrespective of the size of the holding of the landowners. In general, subsidies should be limited to only those activities which have a long gestation period. [4.4.2]

Integration with Related Programmes

The improvements in planning and implementation, promotion of people's participation and the programme-content would call for integration of related schemes primarily within the Ministry of Rural Development and effective co-ordination with other Ministries implementing either identical/similar programmes or other programmes having direct bearing on water and land resource based activities. As the logical corollary of our recommendation that the future strategies should be based on the integrated watershed development approach with effective people's participation and comprehensive programme content, it is necessary that the guidelines for the formulation of projects and the procedures for sanctioning, implementation and monitoring should be identical and in consonance with the basic approach advocated by us. Based on the integration of related schemes and harmonization of principles of allocation and procedures for sanctioning and implementation that we recommend, it should be possible to enhance the coverage of watersheds in the wasteland-dominant and the drought prone area districts. [4.5.1 and 4.5.2]

The Ministry of Rural Development has substantially stepped up the outlay of rural employment generation especially through the Jawahar Rozgar Yojana (JRY) (Second Stream) and the Employment Assurance Scheme (EAS). If watershed based development projects are taken on priority basis for implementation under the JRY Second Stream and the EAS, substantial expansion of coverage of watersheds for treatment and development can easily be achieved. Keeping in view the critical importance of regeneration of wastelands and prevention of further degradation of lands and the large magnitude of the problem, it is advisable that the States should also contribute a suitable matching share in wastelands development schemes as in the case of DPAP. From the Centrally Sponsored Scheme of the Ministry of Rural Development alone, nearly a sum of Rs. 1,250 crores can be channelised for watershed-based development. [4.5.3 to 4.5.5]

The main factors found responsible for the unsatisfactory performance of the DPAP were the undertaking of activities unrelated to the core objectives and the use of DPAP and DDP allocations as substitutes for sectoral funds. Adoption of the unified approach and integration

of related programmes in rural development should, in our estimates, make available, at current level of funding, at least a sum of Rs. 1,500 crores every year for this important national work. The integration of schemes/programmes at the stage of planning and implementation, provision of funds, etc., should be done at the appropriate sanctioning levels, namely, the DRDA or at the State Government. The funding of watershed-based area development schemes should be done comprehensively, based on the projects prepared and the treatment plans developed on scientific lines. The guidelines and procedures for sanction of projects, release of funds, implementation, monitoring, etc., should be uniform in order to facilitate funding and implementation based on project approach. To follow up the Committee's recommendations, the Ministry of Rural Development should take necessary steps for effective co-ordination between the different wings of the Ministry as well as between the concerned Ministries. The Ministry should also formulate guidelines for bringing about uniformity of approach between the programmes under different agencies and should commission training modules for the preparation of the watershed development plans. [4.5.7, 4.5.8 and 4.5.10]

Research and Training

Adequate research back-stop is available for area development on watershed basis in arid, semi-arid and dry sub-humid regions. ICAR system has also been testing their findings through 46 selected watersheds in different agro-climatic zones. Based on the Research and Development (R&D) efforts carried out by various research institutions, the Committee feels that a renewed thrust can be given in area development on watershed basis by (a) creating awareness through training and (b) inducing the adoption of available technologies. We suggest that the Ministry of Rural Development should support the research institutions for providing R & D back-up to these programmes. [4.6.1 and 4.6.2]

Since in terms of the recommendations of this Committee, projects are to be sanctioned on the basis of the detailed plans prepared on watershed basis, the Committee would like to emphasise that training at various levels for the preparation of watershed development plans is going to be critical for the successful implementation of the programmes. The Ministry of Rural Development has to play a pivotal role in organising such training by way of selecting appropriate institutions, funding them, developing course modules for the purpose and monitoring them. We recommend that awareness should be created about the need for people's participation in such endeavour and about the concept of area development on watershed basis so that action plans for development of these areas can be prepared. ICAR Institutions like CAZRI, CRIDA, CSWCR&TI and some of the State Agricultural Universities are already imparting training in area development on watershed basis. The Committee recommends that these Institutions may be requested to impart the training on (a) the methods for ensuring people's participation and (b) developing areas on watershed basis. [4.6.4 to 4.6.6]

Criteria for Coverage and Allocation

As the present criteria of rainfall and percentage irrigation for identification of DPAP and DDP areas are only broad parameters, the Committee feels that a further refinement of the criteria based on latest technological data would help in focusing our efforts on a more scientific basis. We propose to include three ecosystems - arid, semi-arid and dry sub-humid - under DDP/DPAP instead of 'desert' and 'drought prone' areas as at present. The main objectives of drought mitigation and desertification control under DPAP and DDP, in a way, are inter-related. As the aridity increases, desertification also increases. However, irrigation moderates the biotic pressure as the carrying capacity of the land would be enhanced. We propose the following criteria insofar as irrigation is concerned for different ecosystems on district basis. Where moisture index (MI)* is less than - 66.7, the ecosystem is characterised as arid where the area irrigated is less than 50 per cent of the net cultivated area and the programme permissible being DDP. In districts where MI varies from -66.6 to -33.2 and from -33.2 to 0, the ecosystem is characterised as semi-arid and dry sub-humid with less than 40% and 30% of the net sown area irrigated respectively, the permissible programme in both the categories of districts being DPAP. The Committee recommends that the Ministry of Rural Development may obtain the necessary information on percentage of irrigation at the district and block level and select the districts and blocks which are to be brought under the purview of these programmes on the basis of the scientific and internationally accepted criteria discussed above. Keeping in view the budget constraints and the requests of the State Governments especially in the case of DPAP, where 50% of the total allocation is borne by the States, the Committee suggests that an exercise may be done by the Central DPAP Division for moderating the coverage of the Programme. [4.7.1, 4.7.2., 4.7.5 to 4.7.9]

It is further proposed that the blocks should be selected as per the following norms in the eligible districts: in arid ecosystem where the percentage of irrigation is upto 30 and in semi-arid and dry sub-humid ecosystems where irrigation is upto 20% and upto 15% respectively, such blocks are eligible for inclusion. In non-semi-arid/dry sub-humid districts where the irrigation is less than 10 per cent and/or resource degradation is due to high slopes (6 to 30 per cent), such blocks also may be considered. [4.7.10 and 4.7.11]

In each selected block, every village will be covered with 500 hectares area on a watershed basis and within a period of 10 years all the villages may be covered by covering one-tenth of the number of villages in each year. This should provide the basis for allocation of funds to the States and Districts under the programmes. The integrated development project for each village should serve as a catalyst and a model for furthering the cause of sustainable use of resource base. [4.7.13]

The Committee recommends that funding from 1995-96 has to be on project basis only. Thus the new programmes shall come into force from 1995-96 onwards.

* MI = $\frac{P - PE}{PE} \times 100$ where P = precipitation and PE = Potential evapo-transpiration.

Administrative Structure

At the National Level, there are different Ministries/Departments, namely, Agriculture, Rural Development, Environment and Forests which are dealing with activities relating to development of watersheds under different schemes such as the National Watershed Development Programme for Rainfed Areas (NWDPRA), DPAP, DDP and Integrated Wasteland Development Project (IWDP). The Committee recommends the constitution of National Policy Making and Review Committee on Watersheds under the Chairmanship of Member, Planning Commission, in-charge of Rural Development in order to bring about co-ordination and unified approach in the implementation of watershed-based area development schemes by different Ministries/Departments. Taking into account not only the volume of funding available for watershed programmes but also for other employment and poverty alleviation programmes which are sought to be converged for the implementation of the watershed projects, the Committee is of the view that the Department of Rural Development should function as the nodal department. With a view to achieving a certain level of co-ordination in the implementation of watershed-based area development programmes coming under the administrative control of other Ministries/Departments, it is suggested that the Department of Rural Development may constitute a Co-ordination and Review Committee with the representatives of other departments dealing with activities relating to watershed-based area development. [4.8.1 to 4.8.3]

At the State Level, the same divergence of departmental dealings relating to watershed development is witnessed in the States also. In order to bring about co-ordination, constitution of State Level Implementation and Review Committee is recommended under the Chairmanship of Chief Secretary. As on the lines of the National Committee, the Department of Rural Development at the State Level could be the Nodal Agency to service the State Level Committee. At least in States with substantial allocation for DPAP, DDP and IWDP, the Nodal Department at the State Level should be assisted by a Multi Disciplinary Team consisting of senior officers of the rank of Additional Director/Joint Director from Departments of Agriculture, Forests, Horticulture, Animal Husbandry and Minor Irrigation. [4.8.4 to 4.8.6]

At the District Level, there should be a Multi Disciplinary Team headed by Additional Project Director for watersheds. The officers representing different disciplines will constitute the Multi Disciplinary Team. The District Level Multi Disciplinary Team shall be responsible to guide the preparation of watershed development plans at watershed level, scrutinise them and accord administrative sanction as per the procedure prescribed. [4.8.7]

Monitoring and Evaluation

The role of Ministry of Rural Development would now be to fund the programmes as stipulated and monitor them to ensure that the basic strategy, i.e., planning and implementation on watershed basis is being followed. It should also monitor the availability of necessary training inputs, initiate and fund research for evolving location-specific

technologies by building upon local innovations. Considering the large amounts which will be allocated to watershed development programmes including DPAP/DDP, it will be necessary to organise independent evaluation studies on a large scale and on a regular basis through reputed, independent and autonomous institutions including NGOs by adequately funding them. These evaluation studies should be field-oriented, qualitative in nature and analytical and not just data collection exercises. The benefits accruing to the watershed community as a result of developmental efforts under the programmes should be the thrust of these studies. This may also require participation of concerned researchers and analysts in the preparation of action plans for the development of watersheds. [4.9.1 and 4.9.2]