**ABSTRACT**

**SPECIAL AREA DEVELOPMENT PROGRAMME** - Formulation of a new scheme called Special Area Development Programme (SADP) and Guidelines for administration and field implementation of the Special Area Development Programme - Approved - Orders - Issued.

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**PLANNING, DEVELOPMENT AND SPECIAL INITIATIVES (TC - I) DEPARTMENT**

**G.O.Ms.No.40**

**Dated :04.03.2016.**
**Manmadha, Maasi - 21**
**Thiruvalluvar Aandu - 2047.**

**Read:**

Announcement made in the Budget Speech, 2015-2016.

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**ORDER:**

The Hill Area Development Programme (HADP) and the Western Ghats Development Programme (WGDP) were implemented in Tamil Nadu from 1975-76 onwards in designated Hill areas/Western Ghats taluks with financial assistance (90% Grant and 10% State Share) from the Government of India. Hill Area Development Programme was implemented in the Nilgiris District while the WGDP was implemented in selected areas of Coimbatore, Tiruppur, Dindigul, Madurai, Virudhunagar and Tirunelveli districts and in the whole of Theni and Kanniyakumari Districts. The State Government is also implementing schemes for the welfare of the tribals and other population living in the areas prone to leftwing extremism along the border areas of the state in the districts of Dindigul, Theni, Erode, Coimbatore and Nilgiris. The nature of the works implemented in the Maoist prone areas are also similar to what was taken up under Hill Area Development Programme and the Western Ghats Development Programme.

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2. In the Union Budget 2015-2016, Government of India had announced that the HADP/WGDP schemes will be delinked from the Central Assistance from the year 2015-2016 onwards. lri view of this, in the Budget Speech 2015-2016, the following announcement was made: -

> "In order to provide special attention to hill areas, including areas prone to left wing extremism, a Special Area Development Programme will be launched with an outlay of Rs.75.00 Crores".

3. Accordingly, the Government order the implementation of the Special Area Development Programme targeted on the hilly areas of Tamil Nadu which are at an absolute altitude of above 600 m ASL from the base. The target area is spread over **10 Districts, 40 Taluks and 67 Blocks** (as detailed under Annexure - I of the guidelines) which covers **36 Municipalities, 148 Town Panchayats and 1266 Village Panchayats** of the State. The Government also issue the detailed Guidelines for administration and field implementation of the Special Area Development Programme as annexed to this order. Areas in Erode district which were not covered either in WGDP or HADP are now included in SADP.

4. The Special Area Development Programme intends focus on the buffer zone adjoining the protected forests areas, which often suffer from lack of investment as they fall neither in the forests areas nor one close to habitations but are critical to soil and water conservation. Hence, the scope of SADP would cover the interaction between water and production landscapes and human livelihood; water and ecosystem services and water biodiversity. There would be focus on enhancing livelihood opportunities insitu or micro watershed based planning. Further detailing of the scope of the programme and the types of works that would be undertaken are contained in the detailed Guidelines.

5. The Department of Planning, Development and Special Initiatives of the Government of Tamil Nadu would be the State Level Nodal Department (SLND) for the management of the Special Area Development Programme.

6. The State Level Technical Cell for the Hill Areas of Tamil Nadu (STCHA) will be established at the state level and will be hosted in the State Planning Commission and function under the State Land Use Research Board. Technical experts of the Cell would represent the sectors of agriculture, forestry, hydrology, water management, capacity building, social mobilization, information technology, geo-spatial technology etc. In case such experts are not available, they would be engaged on contract basis.

7. For administration and field implementation of the Special Area Development Programme, it is proposed that the work may be taken up in two Units. Unit I, will cover the hilly areas in 4 Districts viz.,The Nilgiris, Coimbatore, Tiruppur and Erode with

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present office of the Project Director, HADP, Udhagamandalam taking care of the areas. The State Level Technical Cell at the State Planning Commission will be Unit II and oversee the field implementation in the remaining districts of Western Ghats viz., Dindigul, Madurai, Theni, Virudhunagar, Tirunelveli and Kanniyakumari through the District Planning Cells in each of these districts.

8. Government also constitute a State Level Empowered Committee (SLEC) with the following composition:

1. The Vice-Chairperson, State Planning Commission - Chairperson
2. The Additional Chief Secretary, Finance Department or his representative - Member
3. The Principal Secretary, Planning, Development and Special Initiatives Department - Member
4. The Secretaries to Government concerned - Member

The State Level Empowered Committee shall approve the Annual Plan and the Integrated Plans prepared for blocks and shall accord sanctions for individual projects or sub projects, as and when the proposals are received from the Districts/Local bodies. This Committee will also be mandated to be the Steering Committee to monitor, review and evaluate the implementation and impact of the project.

9. At the level of the District, the District Planning Cell will be responsible for the implementation of SADP. The operational model of the SADP project will be based on the present State Balanced Growth Fund (SBGF) wherein a State Level Empowered Committee approves the proposals submitted by the District Administration and vetted by the State Planning Commission.

10. SADP works will be typically implemented through the following departments: -

1. Agriculture
2. Environment and Forests
3. Adi-Dravidar & Tribal Welfare
4. Animal Husbandry, Dairying & Fisheries
5. Rural Development and Panchayat Raj
6. Energy - Tamil Nadu Energy Development Agency
7. Handlooms, Handicrafts, Textiles and Khadi
8. Tourism, Culture & Religious Endowment.
9. Highways and Minor ports
10. Public Works (Water Resources Department)

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11. The Government also direct that, out of the 73 existing posts available under HADP/WGDP, 62 posts will be retained wherever it was created as per Annexure II of the Guidelines. The other 11 posts detailed in Annexure III will be redeployed to State Planning Commission.

12. The Government hereby sanctions a sum of Rs.75.00 Crores (Rupees Seventy Five Crores only) for administration and field implementation of the SADP for the year 2015-2016 under the following heads of account: -

| Sl. No. | Head of Account (Demand No.36) | BE 2015-16 (Rs. in Crores) |
|---|---|---|
| 1 | 4551 CAPITAL OUTLAY ON HILL AREAS – 60 Other Hill areas – 789 Special components Plan for Scheduled Castes - JA Infrastructure Development in Special Areas - 16 Major Works **DPC 4551 60 789 JA 1602** | 37.50 |
| 2 | 4551 CAPITAL OUTLAY ON HILL AREAS – 60 Other Hill areas – 796 Tribal Area Sub-Plan – JA Infrastructure Development in Special Areas - 16 Major Works **DPC 4551 60 796 JA 1607** | 0.75 |
| 3 | 4551 CAPITAL OUTLAY ON HILL AREAS – 60 Other Hill areas – 800 Other expenditure – JH Infrastructure Development in Special Areas - 16 Major Works **DPC 4551 60 800 JH 1602** | 36.75 |
| | **Total** | **75.00** |

13. The Head of Division, Tamil Nadu State Land Use Research Board at the State Planning Commission (TNSLURB) is authorized to draw the amount from the relevant Heads of Account and disburse the funds to the Districts/Programme Implementing Agencies based on the sanctions accorded by the State Level Empowered Committee.

14. This order issues with the concurrence of Finance Department vide its U.O.No.16945A/DS(B)/2016, Dated 04.03.2016.

**(BY ORDER OF THE GOVERNOR)**

**$.KRISHNAN**
**PRINCIPAL SECRETARY TO GOVERNMENT**

To

The Member-Secretary, State Planning Commission, Chennai-5.
The Project Director, Hill Area Development Programme, Udhagamandalam.

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The Head of Division, Tamil Nadu State Land Use Research Board at the State Planning Commission (TNSLURB), State Planning Commission, Chennai-5.
The Additional Chief Secretary to Government, Finance Department, Secretariat,Chennai-9.
The Additional Chief Secretary to Government, Public Works Department, Secretariat, Chennai-9.
The Additional Chief Secretary to Government, Highways and Minor Ports Department, Secretariat, Chennai-9.
The APC & Secretary to Government, Agriculture Department, Secretariat,Chennai-9.
The Principal Secretary to Government, Environment and Forests Department; Secretariat, Chennai-9.
The Principal Secretary to Government, Handlooms, Handicrafts, Textiles and Khadi Department, Secretariat, Chennai-9.
The Principal Secretary to Government, Tourism, Culture and Religious Endowment Department, Secretariat, Chennai-9.
The Secretary to Government, Animal Husbandry Dairying ?t Fisheries Department, Secretariat, Chennai-9.
The Secretary to Government, Adi Dravidar and Tribal Welfare Department, Secretariat, Chennai-9.
The Secretary to Government, Rural Development and Panchayat Raj Department, Secretariat, Chennai-9.
The Secretary to Government, Energy Department, Secretariat, Chennai-9.
The Chairman and Managing Director, Tamil Nadu Energy Development Agency, 5th Floor EVK Sampath Maaligai, College Road, Chennai – 6.
The Chief Engineer, Agricultural Engineering Department, Nandanam,Chennai-35.
The Principal Chief Conservator of Forest, Panagal Building, Saidapet, Chennai-15.
The Director of Adi-Dravidar Welfare, Chepauk, Chennai-5.
The Director of Tribal Welfare, Chepauk, Chennai-5.
The Director of Animal Husbandry and Veterinary Services, OMS Compound, Central Office Buildings, Block 11,DMS Compound,Chennai – 6.
The Director of Fisheries, Administrative Office Building,Teynampet,Chennai – 6.
The Chief Engineer, National Highways, Chepauk, Chennai-5.
The Director of Town Panchayats, Kuralagam, Chennai-108.
The Engineer in Chief & Chief Engineer(WRD),Public Works Department,Chennai-5.
The Chief Conservator of Forests and Director of Sericulture, Foulke's Compound, Anaimedu, Salem - 636 301.
The Director of Agriculture,Chepauk, Chennai-5.
The Director of Rural and Development and Panchayat Raj Department, Panagal Building, Jeenis Road, Saidapet, Chennai-15.
The Commissioner of Horticulture, Chepauk, Chennai-5.
The Chief Executive Officer.Tamil Nadu Khadi & Village Industries Board, Kuralagam, Chennai-108.

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The Director of Tourism and Culture Dept, Wallaja Road, Chennai-2.
The Collector, The Nilgiris District.
The District Collector, Coimbatore District.
The District Collector, Erode District.
The District Collector, Tiruppur District.
The District Collector, Dindigul District.
The District Collector, Theni District.
The District Collector, Madurai District.
The District Collector, Virudhunagar District.
The District Collector, Tirunelveli District.
The District Collector, Kanniyakumari District.
The Accountant General (A&E & Audit-I), Chennai-18.
The Pay and Accounts Officer (East), Chennai-8.
The Treasury Officers, The Nilgiris, Coimbatore, Erode, Tiruppur, Dindigul, Theni, Madurai, Virudhunagar, Tirunelveli and Kanniyakumari Districts.

**Copy to:**

The Senior Private Secretary to Principal Secretary to Government, Planning, Development and Special Initiatives Department, Secretariat, Chennai-9.
The Finance (Public) Department, Secretariat, Chennai-9.
Stock file/Spare Copy.

**(Forwarded/By-order)**

Kamalam 4/3/2016.
**Section Officer**

4/3/16


# Guidelines for the Implementation of the Special Area Development Programme (SADP) for the Hill Ranges of Tamil Nadu

*Planning, Development and Special Initiatives (TC-I) Department*
*Secretariat, Chennai-9.*

CONTENTS

## A Programme for the Sustainable Development of the Special Areas of Tamil Nadu

### 1. Preface

The South Indian hills, amongst the oldest in the world, came into existence due to a geological process known as 'uplift' between 50 and 100 million years before present[1]. This uplift exposed the underlying rocks (that are over 2 billion years old) and led to the existence of two hill ranges that run parallel to the coasts of India. Recent studies and historical references[2] suggest that the classification of the hill ranges as Western and Eastern, originally by the British, is largely arbitrary. The number of species of plants and animals that are common to both the hill ranges and the structural similarities that they exhibit reiterate that the hills are a single bio-geographical entity and justify the consideration of the hill regions in the State of Tamil Nadu as a unified whole[3].

In terms of geographical organization, the Western Hill ranges are a continuous chain of hills running North to South along the western periphery of Tamil Nadu, with easterly-outliers that run in an east-north-east direction.

**Biodiversity** Although the Western hill range appears like a single geographical entity, it is quite heterogeneous in its geographical and geological features, of which, notable is the high topographical variance. Distinct high altitude peaks (> 1500m) and the corresponding topographic variation combined with a tropical south-west monsoon

[1] Radhakrishna, 1991 and 1993

[2] For example, the description of Kongu Country by M. Arockiasami and the Ayyapan Report on Hill Ranges of Tamil Nadu

[3] Examples include the endemic and endangered legume *Crotalaria longipes,* found only in the

Nilgiris Plateau and Kalli Hills (Jayanthi and Daniels, 1996) and the genus of Tree frog in Sri Lanka, south Western Hills and the Shevaroy hills (Daniels, 2005).

System, contributes to varying bioclimatic conditions at both macro and micro levels[4]. This diversity is in turn exhibited in the plant formations - from dense evergreen forests at low and medium elevations to stunted evergreen forests intermixed with savanna and grasslands at high altitude and, deciduous woodlands in drier regions. The diverse bioclimatic conditions encountered along the forest continuum, together with the fact that the hills have remained isolated from other such forests in Asia, have resulted in a high level of endemism. For instance, Nilgiris exhibits the highest number of endemic plants and animals within the entire range. Owing to the inherent richness in species composition and the fact that the landscape is under critical pressure due to a high population density (341 . inhabitants *I* $km^2$), this area is designated one of the 25 biodiversity "hotspots" of the world[5].

Biogeographers have described the Eastern hills as 'stepping stones' in the prehistoric dispersal of plants and animals from the Eastern Himalayas to the Western hills and Sri Lanka. This is supported by the many species of flora and fauna in the southern Eastern Ghats that are otherwise confined to the hot spot[6]. With an agrarian tradition that dates back, yet again, to the Sangam period, the Eastern Hills are repositories of crop genetic diversity especially of fruits, minor millets and spices.

While the western peninsula continued to be moderate in temperature, wet and less seasonal, the Deccan Plateau and the eastern hills gradually became warmer, drier (due to the rain shadow created by the taller western hills) and more seasonal during the past 15 million years or so[7]. In addition to climatic variations, anthropological

[4] Due to orographic effect of slopes and summits, windward side of the Western hills experiences full intensity of the summer monsoon, which results in rainfall > 7000mm. Also, since the monsoon arrives from the south and retreats in the reverse direction, the rainy season is longer in the south than the north. The second aspect is that the monsoon rains diminish rapidly once they cross the summit. The third climatic gradient is the fall of temperature with altitude.

[5] Myers et al. 2000

[6] Examples such as the Malabar Parakeet, Rufous Babbler, Malabar Whistling Thrush, Nilgiri Flowerpecker and White-cheeked Barbet in the Kolli Hills are noteworthy. These birds are considered 'endemic' to the Western Ghats. Similar examples are found amongst other faunal groups as well, such as the Flying Lizard *(Draco dussumieri)*.

[7] Radhakrishna, 1991 and 1993

factors, notably land use conversion into commercial plantations, linear infrastructure and allied human needs have played a role in fragmenting the rainforests of the region, resulting in aggravated conditions of water distress in the state.

While the 'shola' forests of the south-western hills (Nilgiris, Palanis, Anaimalais, etc) have attracted a lot of attention and recognition as ecologically fragile, higher elevation easterly hill forests of Tamil Nadu including the Kalli and Shervaroy Hills have not been managed with similar concern. This is exemplified by the fact that there are no Protected Areas in the Eastern Hills.

**Water Resources** The larger relevance of the hills to Tamil Nadu is of providing freshwater, thereby ensuring the water security of the state. Given the fact that the state is water stressed, the significance of the east-flowing rivers, streams and wetlands needs to be recognized . In view of this criticality, the following thematic areas assume significance viz: Water, production landscapes and human livelihoods, Water and ecosystem services especially provisioning services and Water and biodiversity. Of the many units that have been identified to consolidate the goals of conservation of biological diversity and development, the efficacy of watersheds (ideally at the scale of micro watersheds) as a planning unit is well established[8].

**Enhancing livelihood opportunities *in situ*** The hill ranges of Tamil Nadu are characterized by the presence of a number of endogamous groups designated as Scheduled Tribes, some of whom are of the category of Most Vulnerable Tribal Groups.There is also a considerable presence of- marginalized groups such as the Scheduled Castes. While Tamil Nadu has, over the last few decades, made a dedicated effort to expand the social security cover to these marginalized groups, many of them remain poorly reached or excluded. Persistent low levels of health, literacy and skills contribute to a situation that is typified by their employment in the unorganized sector as wage labourers and distress migration. Further, the contribution made by these communities as custodians of natural resources and biological diversity is often unrecognized or under- valued.

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[8] Gadgil et al, 2005

**Rationale for the Special Area Development Programme** The Hill Area Development Programme (HADP) and the Western Ghats Development Programme (WGDP) were implemented with the objective of addressing the special problems faced in the hilly regions of the state. Both programmes were operational in the Western Hill Ranges. The proposed Special Area Development Programme (SADP), addresses the common problems faced in the hill ranges delineated above which are treated as a single biogeographical entity. Premised on Tamil Nadu's vision of fostering sustainable development and preserving its natural heritage, the SADP would be a pioneer in demonstrating the reconciliation of conserving natural resources and biodiversity for fulfilling human needs and aspirations. It also seeks to address the possible penetration of Left Wing Extremists into the landscape.

In the following the existing components of the HADP and WGDP are outlined. This is followed by delineating the approach to the SADP and its operational features together with its proposed staffing pattern the scope of the Project as well as indicative schemes to be taken up by respective departments. The Special Area of Tamil Nadu is the hilly ranges above an absolute altitude of > 600 m ASL from the base on the western periphery of the state.

## 2. The Hill Area Development Programme (HADP) and the Western Ghats Development Programme (WGDP)

The HADP/WGDP were formulated to deal with special problems faced by identified regions due to their distinct geo-physical structure and poor socio-economic development. These programmes were in operation since the Fifth Five Year Plan (1974-79) to supplement the efforts of state governments in the development of ecologically fragile designated hill areas/Western Ghats. The main objectives of the programme were eco-preservation and eco-restoration with a focus on sustainable use of biodiversity. The programme also focused on the needs and aspirations of local communities, ensuring community participation in the design and implementation of strategies for conservation of biodiversity and sustainable livelihoods. Watershed-based development was the thrust area of the programme based on a participatory approach for ensuring efficiency, transparency, and accountability. The main aim of the watershed approach was to ensure a holistic view of water and land resources and to prevent further degradation of these ecologically fragile areas.

The Central Government was fundi g HADP/WGDP as Special Central Assistance (SCA) for Hill Areas Development. The SCA was being apportioned between HADP and WGDP in a ratio of 60:40. Under HADP, funds were distributed among the states implementing the programme by giving equal weightage to the area and population, whereas under WGDP 75% weightage was given to the area and 25% to the population. Ninety per cent of the total approved outlay of SCA was the central grant while 10 per cent was the state's share.

WGDP which was implemented in Tamil Nadu since 1975-76 covered an extent of 25.70 lakh hectares spread over 33 taluks in the districts of Coimbatore (7), Erode (2), Dindigul (4), Madurai (1), Theni (5), Virudhunagar (3), Tirunelveli (7) and Kanyakumari (4). The area covered by the programme was 62% of the total area of the eight districts and about 20% of the total geographical area of the State. Since (1992-93) the implementing agencies of three core-sectors *viz.,* Agricultural Engineering, Forestry and Horticulture were directed to execute the scheme works in selected priority watersheds

indicated in the Annual Plan G.Os. Accordingly, the watersheds in the region were delineated on the basis of soil erosion index. Of the 5197 watersheds thus delineated in the region, 2366 watersheds (45.5%) were identified as very high and high priority watersheds and are being taken up for treatment.

The programme enabled the implementation of a wide range of activities / works executed by about 15 line departments. However, the schemes implemented under Forest (34.8%), Agricultural Engineering (31.4%), Horticulture (12.3%), Animal Husbandry (4.6%) and Roads (4.6%) sectors together accounted for 87.7% of the total outlay provided during the first four years of the Tenth Plan. The activities carried out under the programme involved planting of miscellaneous/medicinal plants and execution of soil conservation works by the Forest Department, construction of civil works for Soil and Moisture Conservation and Water Harvesting by the Agricultural Engineering Department and rejuvenation of old orchards and production and distribution of planting materials and vegetable seeds by the Horticulture Department.

The HADP, implemented since 1975-76, in the Nilgiris district covered a total geographical area of 2.74 lakh hectares. This area is vulnerable and prone to soil erosion and landslides calling for huge investments on protective agricultural engineering works and their periodical maintenance. Though the activities taken up under the programme were executed by about 20 line departments, Forest, Soil conservation and Horticulture sectors were initially identified as core sectors. From 1996-97 onwards four more sectors *viz.,* Tribal welfare, Development of Municipal area, Water supply and Improvement of Roads were included under the core sectors. In the total outlay provided during the first four years of the X Plan period Soil Conservation (16.7%), Forestry (16.4%), Horticulture (13.6%), Development of local bodies (11.5%), Roads (9.7%), Welfare of SC / ST (5.2%) and Human Resources Development (5.1%) together accounted for about 78 per cent. Sectors like Tourism, Medical and Health and Training component accounted for about 3 per cent each.

## 3. The Approach

In the Union Budget 2015-2016, Government of India announced that the Hill Area Development Programme and Western Ghats Development Programme schemes would be delinked from the Central Assistance from the year 2015-2016 onwards; and stated that the schemes may be continued with the available resources of the State Governments.

In order to provide special attention to hill areas of Tamil Nadu, the Government in the Budget 2015-2016 announced a new programme called **"Special Area Development Programme"** (SADP).

> "In the Union Budget 2015-16, the Government of India has discontinued the Hill Area Development Programme (HADP) and Western Ghats Development Programme (WGDP). In order to provide special attention to hill areas, including areas prone to left wing extremism, a Special Area Development Programme will be launched with an outlay of Rs.75 Crores by this Government"
>
> Excerpts from the Budget 2015-2016, Government of Tamil Nadu

1. **The key features of the SADP are as follows:**

    1. **Designating the Special Area:** The hilly areas of Tamil Nadu at an absolute altitude of > 600 m ASL from the base on the western periphery would be designated as the Special Area.
    2. The designation is in view of their ecological, hydrological and social significance, as well as the assignment of the Western Hills (Western Ghats) as one of the 25 biodiversity hot spots of the world. This designation is also a strategic measure to expand the scope and intensity of the social security net that the Government of Tamil Nadu implements for the most marginalized and vulnerable sections of the society such as the Most Vulnerable Tribal Groups.

3. Within the hills, the importance of the Western Ghats is further enhanced because of the hydrological significance, contributing not only as the conduit for the east flowing rivers from the state of Kerala and Karnataka, but also because of being the point of origin to the state's many perennial / torrential streams and wetlands.

4. To ensure that the designation of the special area is objective, it is proposed to define the area using a cluster of geographical, ecological and geological attributes, wherein the absolute altitude of > 600 m would be the fundamental unit of demarcation. Within this delineation, the finer analysis would be as follows:

5. The longitude 77°30'E would be the eastern limit of the Western Ghats or hills of Tamil Nadu, while an elevation of 600 M > from the base would define the term 'hill range'[9]. By overlaying the two attributes results in the identification of 40 taluks (in full, or in part), and the constituent Village Panchayats, Town Panchayats and Municipalities, as the area of Western Ghats of Tamil Nadu. A more definitive and appropriate identification would be at the level of blocks and the constituent village and town panchayats. Geo-spatial analysis of the area reveals that 67 administrative blocks [10] and covering 36 Municipalities, 148 Town panchayats and 1266 Village panchayats of the State to be the project area.

[9] This is critical in view of the fact that much of the state's area is under the category of uplands with an elevation of 400 mASL>.

[10] Nilgiris district has 6 taluks and 4 blocks.

**2.** State Level Nodal Departmenf(SLND)

The Department of Planning, Development and Special Initiatives of the Government of Tamil Nadu would be the state level nodal department for the management of the Special Area Development Programme.

The main functions of the SLND will be to:

1. Prepare a perspective and strategic plan for the hill ranges of Tamil Nadu and indicate implementation strategy and expected outputs/outcomes and financial outlays
2. Establish and maintain a state- level data hub through the involvement of professionals and experts.
3. Establish monitoring, evaluation and learning systems at various levels (internal and external/ independent systems).
4. Constitute a panel of Independent Evaluators for the programme, get this panel duly approved by the concerned agency and ensure that quality evaluations take place on a regular basis.
5. Prepare State Specific Process Guidelines, Technology Manuals and operationalise the same.

The programme is proposed to be operationalised at the level of the fundamental unit of decentralized governance viz. Village Panchayat, Town Panchayat or Municipality (organized as wards) through the district administration (District Rural Development Agency). A Project Directorate (such as the existing Project Directorate Hill Area Development Programme) overseeing the implementation of the programme will be developed. For administration and field implementation, under the Directorate,. it is proposed that the work may be taken up in two Units. For Unit I, the scope and functioning of the presen_t HADP may be expanded to cover the following districts:

1. The Nilgiris

2. Coimbatore
3. Tiruppur
4. Erode

For Unit II, the present State Land Use Research Board at the State Planning Commission through suitable addition of appropriate staff redeployed from the HADP Cell (as detailed under Annexure Ill) may oversee the field implementation of the remaining districts as follows:

1. Dindugul
2. Madurai
3. Theni
4. Virudhunagar
5. Tirunelveli
6. Kanyakumari

For administration and implementation, the District Planning Cell in each of the identified districts would be the nodal organization and liaison with the Project Directorate. The operational model of the SADP project will be based on the present State Balanced Growth Fund wherein a State Level Empowered Committee approves the proposals submitted by the District Administration and vetted by the State Planning Commission vide G.O. Ms. 13 PD&SI dated 07.02.13. Administrative Sanction will be accorded by the Project Directorate, after due technical and financial scrutiny and its field implementation will be carried out by the District Administration under the overall supervision and monitoring of the Project Directorate. The execution of WGDP programme was entrusted to the TAWDEVA for eight districts viz., Coimbatore, Dindigul, Kanyakumari, Madurai, Theni, Tirunelveli, Tiruppur and Virudhunagar upto 2014-2015. Assignment of responsibility to TAWDEVA has been hereby withdrawn and the above procedure shall be taken up.

3. State Level Technical Cell for Hill Areas of Tamil Nadu (STCHA)

A separate Cell, called the State Level Technical Cell for the Hill Areas of Tamil Nadu (STCHA) will be established at the state level and will be hosted at the State Planning Commission functioning under the present State Land Use Research

Board. Technical experts of the Cell would represent the sectors of agriculture, forestry, hydrology, water management, capacity building, social mobilisation, information technology, geo-spatial technology etc. In case such experts are not available, they would be engaged on contract basis. The Details of retained posts under HADP/WGDP are listed in Annexure II.

The functions of the Cell will be as follows:

1. Take up the over- all responsibility of facilitating the preparation of the Annual Plans and the Integrated Plans for the districts.
2. Providing professional technical support to Implementing Agencies in planning and execution.
3. Carry out regular monitoring, evaluation and learning.
4. Ensure timely submission of required documents to Nodal Department
5. Facilitate co-ordination with relevant programmes of forests, environment, agriculture, horticulture, rural development, animal husbandry, etc with projects that reconcile biodiversity conservation and development goals

Financial assistance would be provided for the strengthening of the state level agency mandated to implement the programme, as also to district level entities to ensure professionalism in execution and management of the programme.

4. Scope of SADP and Types of Works

The area in the immediate vicinity/boundary of the Protected Area System is normally referred to as the Buffer Area (conforming to the delineation of the Biosphere Approach of Core, Manipulation and Buffer Zones). The designation of the Buffer Zone using a 'x' km / radius approach has been contested, and it has also been rather difficult to demarcate the zone on ground. Further, past interventions of the WGDP and the HADP have been sector based with programmes that are specific to the department entrusted with the task. The current programme consolidates both the approaches for a more robust identification of the sectors and works to be undertaken. While the biological significance of the hjll ranges cannot be contested, the larger relevance of the hills to Tamil Nadu is of providing freshwater, thereby ensuring water security to the human population of the state. Tamil Nadu depends on the North East and South West Monsoons, of which the potential capture through the South West Monsoon is curtailed by the presence of the Western Ghats, rendering it to be a water deficit state.

Given the fact that the state is water stressed, the significance of the east-flowing rivers, streams and wetlands and the life support that they provide to humans and biodiversity is to be recognised. In view of this criticality, the following has been identified as the scope of the Special Area Development Programme

1. Water, production landscapes and human livelihoods: covering river courses, wetlands and man-made water entities such as check dams, micro reservoirs etc. And the habitats that they support through irrigation (all forms) such as tea and coffee plantations, mixed plantations of spices and condiments, commercial plantations of rubber, fuel forests, food crops areas including cultivation of paddy, horticultural crops such as vegetables, fruits including bananas, home steads, home gardens and associated animal husbandry.
2. Water and ecosystem services especially provisioning services: covering river courses, dams and reservoirs and their services, wetlands and man-made water entities and the services of providing potable water to the

habitations and other related human uses; protection of ground water tables, provision of fish, fodder, and prevention of soil erosion, landslides and damage to habitations and agrarian systems by protecting riparian vegetation, sustainable use of natural resources including harnessing of wind and solar power.

3. **Water and biodiversity:** focusing on protecting aquatic fauna and flora and the habitats notably riparian vegetation, medicinal plant areas and mitigation of Invasive Alien Species.

Focus on enhancing livelihood opportunities *in situ*

The hill ranges of Tamil Nadu are characterized by the presence of a number of endogamous groups designated as Scheduled Tribes, some of whom are of the category of Most Vulnerable Tribal Groups. Each of these groups are typified by their presence in specific forest types. There is also a considerable presence of marginalized groups such as the Scheduled Castes in the hills. While Tamil Nadu has, over the last few decades, made a dedicated effort to include and expand the social security cover to these marginalized groups, many of them remain poorly reached or excluded. In addition to the fact that the habitations of these communities are rather sparse in their density of households and location, persistent low levels of health, literacy and skills contribute to a situation that is typified by their employment in the unorganized sector as wage labourers and migration to mitigate lack of local level employment. Dependence on the collection of Non-Timber Forest Produce, seasonal migration to plantations across the state, wage labour etc. are some of the coping strategies adopted by the communities. Further, the contribution made by these communities as custodians of natural resources and biological diversity is often unrecognized or under- valued.

It is hence imperative that a SADP would

a) Enhance the coverage of the social security net
b) Provide access to basic infrastructure especially those related to health and sanitation

c) Improve skills that are linked to employment opportunities including emerging avenues such as bio-prospecting

d) Explore means of generating in situ livelihoods and minimize migration, be developed as part of the SADP.

Focus on Watersheds

Of the many unit that have been identified to consolidate the goals of conservation of biological diversity and development, the efficacy of watersheds (ideally at the scale of micro watersheds) as a planning unit is well established[11]. For the Western Ghats of Tamil Nadu, this would entail that the micro watersheds are identified and used as a planning unit (this however needs to be overlaid with taluk/block boundaries). If a micro watershed (overlaid with taluk/block boundaries) is identified as a unit of planning, the following finer analysis could be undertaken to identify broad thematic interventions.

1. The micro watershed falls in to the category of Very High Priority and High Priority as per the status Survey conducted by Remote Survey The index used for this is the soil erosion index. Of the 5197 watersheds thus delineated in the region, 2366 watersheds (45.5%) have been identified as very high and high priority watersheds.
2. The selected watershed is a micro watershed having an area of about 300-700 ha.

The new approach proposes to accord attention to the interface area that is broadly defined as the area in the immediate periphery of the Protected Area and the lands under the jurisdiction of the Revenue Department. This would mean that the fundamental unit of planning and execution would be a cluster of town and village panchayats and municipalities, with the ecological/hydrological boundary being the micro watersheds of approximately 300-700 hectares. Exceptions need to be made in terrains that are rather steep and difficult to access.

[11] Gadgil et al, 2005

## 5. Programme focus

The Special Area Development Programme would be organized so as to converge and derive full advantage of the other programmes in existence such as the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), Backward Regions Grant Fund (BRGF), Afforestation Schemes, Integrated Water Management Programme, Tamil Nadu Biodiversity Conservation and Greening Project etc. The SADP would limit itself largely to bridging shortfalls in fund requirement and programme implementation. In instances where option for convergence is limited, the financial and programme interventions of the SADP may serve as a seed fund for the development of a full fledged programme. A coordination of the programme interventions would also ensure that the goal for the hills of the state, remains consistent with the principle of biodiversity conservation and sustainable development.

### I. Water Management

That the hills of Tamil Nadu need to be protected, restored and conserved for their role in providing freshwater to the state of Tamil Nadu could be the primary focus of the revised programme.

While the perennial and major rivers are addressed through national and state level river conservation programmes, the smaller, seasonal, torrential rivers that originate within the boundaries of Tamil Nadu, such as Moyar, Gundar, Akasa Ganga etc. have not received sustained intervention especially from a river course management perspective. Likewise, the smaller stream orders and their networks have also not been addressed effectively.

It is hence suggested that a comprehensive programme for protecting/restoring/conserving and managing the river system be made a part of the revised programme. It is further suggested that protocols and guidelines for river course management be developed exclusively for Tamil Nadu. While doing so, it is essential that line departments, notably the Water Resources Organisation, Tamil Nadu Forest Department, Tamil Nadu Pollution Control Board and the Tamil Nadu Electricity Board are co-opted into the process of planning so that concerns pertaining to animal movement are addressed.

Water quality monitoring and mitigation of detrimental factors (including rivers/lakes/ponds and other water bodies)-

Natural features, such as topography, define watersheds that drain into specific surface-water bodies, such as streams, rivers, lakes, reservoirs, etc. Both natural and human-induced conditions within the watershed are reflected in the quality of the surface water. Monitoring is necessary to ensure that our waters can continue to support the various services. The information gained from monitoring helps with prioritizing the issues to be addressed and choosing the geographic areas in which to concentrate, thus helping to ensure cost-effective water-resource management. Effective monitoring is regular, long-term, and includes biological, physical, and chemical measurements. The Tamil Nadu Pollution Control Board is mandated to monitor pollution levels in all the major river courses of the State, which needs to be strengthened and factored into local level plans to ensure that point data on pollution is made available for mitigation. For, the water quality of a stream, a river or a watershed, can be improved by gathering good quality data and by responding to it most effectively at the local level. The local people, as citizen monitors, residing in a watershed are often in the best position to identify priority water issues and to understand the political, social, and economic context in which those issues can be addressed. Citizen monitoring enhances the monitoring conducted by state agencies by filling in geographic gaps or by increasing the frequency of sampling.

**a.** Riparian forest conservation/protection and restoration

Riparian forests are among the most rapidly disappearing vegetation types in the world. The disappearance of this vegetation type is largely triggered by direct human actions and indirectly by humans modifying the river courses such as for navigation and building of dams. Riparian vegetation performs various ecological functions like providing food, organic matter, shelter and habitat and regulating stream water temperature in addition to filtering sediments and nutrients, dissipating stream energy, preventing erosion and regulating the flow of litter from the forest floor into the stream[12] Riparian forests serve

as an ecological corridor both between habitats and across elevation zones and also as refugia protecting species against extreme temperature. Additionally their close

[12] Gregory et al. 1991; Naiman and Decamps 1997

association with socio-economic development, especially in terms of providing freshwater, cannot be ignored. Hence, it is important to define the extent of riparian regulation zone, assess riparian biodiversity and develop a management plan that integrates both riparian forest conservation and regulation of detrimental human interventions.

This activity can be converged with The National Natural Resources Management System (NNRMS) Scheme of MoEFCC which is part of an umbrella scheme of the Planning Commission-Planning Committee-National Natural Resources Management System (PC-NNRMS). The main objective of PC-NNRMS is utilization of remote sensing technology for inventorization, assessment and monitoring of country's natural resources.

**b.** Identification and Restoration of degraded riparian zones

The riparian zones are essential to maintain river water quality, hence it is vital to identity and restore degraded riparian zone to reduce the effect of pollution and improve water quality especially adjacent to agricultural lands.

Alteration of riparian forests can result in changes in the intensity of sunlight, nutrient availability, increased soil deposition, eutrophication, lowering of the water table and modification of both terrestrial and aquatic habitats. Loss of riparian forests has also been reported to result in decline in bird species' richness and diversity in the area (Gopal, 2004). Riparian buffers can help maintain and/or enhance the overall health of a stream ecosystem, thereby improving its ability to provide important "ecosystem services". Thus, the proper conservation, restoration, and management of riparian zones should play a critical role in maintaining and improving water quality in streams and rivers. This activity can be converged with Centrally Sponsored Scheme of National River Conservation Plan (NRCP).

**c.** Wetlands - Protection, Restoration and Conservation

Wetlands located in the highlands of tropical regions are important as water regulators essential for the productivity and as crucial carbon 'sinks'. Both these functions are at risk from the impacts of climate change. Hence, there is an urgent need to undertake studies to formulate comprehensive climate change mitigation and adaption strategies for conservation and management of valuable and vulnerable ecosystem of such

wetlands. Comprehensive and detailed assessment including qualitative and quantitative baseline studies is required for each such wetland type. This analyses including hydrological, biodiversity assessment and disturbance studies are essential to estimate the value of wetlands and their ecosystem goods and services (Chatterjee et al 2010).

The activity can be linked with 'National Plan for Conservation of Aquatic Eco-systems (NPCA) (Lakes and Wetlands Conservation Programme)'- as two separate Centrally Sponsored Schemes (CSS), namely the National Wetlands Conservation Programme (NWCP) and the National Lake Conservation Plan (NLCP).

## II. Agriculture, Animal Husbandry and Dairy Development

### A. Analysis of existing agro-biodiversity and its promotion to maximize effective use of resources

Biodiversity loss in agricultural landscapes affects not just the production of food, fuel, and fiber, but also a range of ecological services supporting clean water supplies, habitats for wild species, and human health. Given the expected growth in human population and predicted environmental change, action is needed that shows how the utilization and conservation of biodiversity can provide ecosystem services to meet both current and future needs.

Most critically, centres of diversity for agricultural / horticultural crops need to be identified within the state and dedicated programmes need to be implemented for the protection of these landscapes as in situ repositories / gene banks. Viable examples include the hill ranges of Kanyakumari.

Adoption of farming practices that utilize and conserve biodiversity may ultimately improve environmental quality and limit agricultural expansion. Conservation of biodiversity and human knowledge from traditional agroecosystems is an urgent priority[13]

[13] Jackson et al. 2005

**B.** Promotion of sustainable farming practices

Sustainable Agriculture involves the processes that would enable the state to meet the current and long term needs for food, fibre and other resources, while maximizing benefits through the conseNation of natural resources and maintenance of ecosystem functions. It is essential to contextualize the Agro-Climatic zone so that the inteNentions are relevant at regional scales in areas of research and devel?pment, technology and practices, infrastructure and capacity building. Agricultural productivity can be improved through customized inteNentions such as promoting efficient irrigation systems, demonstration of appropriate technology, capacity building and skill development. It is necessary to facilitate access to information and institutional support of the existing Agriculture Extension Centres.

This activity can be converged with other National Programmes like:

i. National Mission For Sustainable Agriculture
ii. Agro-Forestry- National Green Mission Water Pricing, Water Efficiency- National Water Mission
iii. National Sol
iv. Knowledge Management-National Mission on Strategic Knowledge for Climate Change

**C.** Horticulture and Plantation Crops

i. It is important to focus on Horticulture market deficiencies including the varieties of vegetables and fruits that are grown, post haNest techniques involved in collection, storage, packaging, distribution and sale at Panchayat/Block level and provide adequate aid in terms of technology and expertise. It is also imperative to focus on creating seed banks of local varieties and cultivars to aid farmers, while at the same time conserving centres of diversity. The possibility of exploring Precision Farming methodology to minimize and rationale the use of external inputs for agriculture could be focused upon, especially in view

of the natural limitations of hilly terrains.

ii. Further there is a need to focus on the factors which contribute to low productivity like limited availability of quality planting materials, old orchards,

poor orchard management practices, insect pest and diseases, poor post-harvest management practices, etc. The use of broad spectrum fertilizers and pesticides needs to be reviewed and corrected.

iii. Providing support systems to foods collected from the wild, normally referred to as Non-Timber Forest Produce is an area that needs to be focused upon, for close to 245 products are traded in significant quantities from Tamil Nadu. Further, the economic returns of this domain have not been realized by the primary collectors or the State. Additionally, horticultural interventions need to factor in issues of proximity to Protected Areas and animal movement

iv. Capacity building:The growth of the horticulture sector that is premised on sustainability, can be facilitated through increased participation of small and marginal farmers in an organized manner and farmers being trained with entrepreneurial skills. Agroforestry models that aid horticulture could be explored to maximize returns for the farmer.

**D.** Promote Medicinal Plants Cultivation in Private Lands

Bio-prospecting especially of plants in landscapes such as the hills of Tamil Nadu for pharmaceutical applications, as also cosmetics has been ongoing for many years. While the end buyers range from multinational entities to local levels medicine men, there has not been a targeted intervention to ensure that the local communities who identify, source or collect the plants are rewarded or compensated for their efforts. Concurrently, sustainable harvest regimes for the medicinal plants have also not been evolved, as also local level grading, sorting and processing facilities. The fact that medicinal plant collection and sal.e continue to be within the realm of the unorganized trade is sought to be addressed by the SADP.

This would entail that private holdings, especially small and marginal holdings, would be targeted for commercial cultivation of generic medicinal plants. This could be strengthened by evolving targeted interventions for plants that have high conservation values so that harvest from wild is reduced. This would involve the identification of a prioritized list of medicinal plants for the state, establishment of mass propagation protocols, undertake feasibility interventions for

replication and pilot projects for mass

cultivation. The intervention would also need to focus on providing training and capacity building on sustainable harvest regimes and primary processing.

**E.** Sustainable Animal Husbandry

Crop and livestock farming complement each other. Animal husbandry is a complex, multi-component, interactive process that is dependent on land, human resources and capital investment. The integration of animals with tree crops such as rubber is possible through the system of Integrated Intensive Farming Systems. For instance, Pig - Duck - Fish - Vegetable integration, as well as Fish-Duck-Rice in small farm systems are time tested options. Inter-Cropping and relay cropping to include both food and feed production, particularly in cereal growing rain-fed systems is a viable option.

Three Strata Forage Systems which include grasses, shrubs and legumes, and trees and which are applicable in dry land areas can be adopted. The following strategies are proposed for sustainable animal husbandry:

i. The grazing lands are not only a significant source of animal feed but are environmentally important for wildlife, conservation of plant genetic resources, and, in particular, as watersheds. It is recommended that land use strategies, which emphasise the need for control over these resources, are implemented through associations based on social and traditional organizations. A customary practice in this regard which has been largely abandoned is open grazing that is restricted only to summers.

ii. The condition of the vegetation, rather than availability of feed, is the criterion for judging the sustainability of management systems. In areas of sufficient rainfall and where adequate management can be ensured, the use of legumes is recommended to increase pasture productivity and improve the diet. While in arid and semi-arid areas which have a low production potential per unit area the main emphasis should be on improvements through management. That grazing lands are particularly vulnerable to degradation during periods of drought and efforts must be made to reduce stress on vegetation at such times. Drought feeding strategies should take vegetation preservation into account and that the systematic use of feed. It is

recommended that greater attention be given to the use of legume trees and shrubs for dry season feeding.

iii. The introduction of new breeds, particularly those developed in widely differing environments, as a substitution of indigenous breeds is unlikely to be a cost effective option. However, when breed substitution is considered to have potential, it needs to be preceded by a careful assessment.

iv. Veterinary services should place greater emphasis on disease prevention utilizing better management, nutrition and housing. Increased assistance is to be given to projects that evaluate and demonstrate the wide use of locally available plants and derivatives as veterinary medicine.

v. As with human health systems which have adopted the use of multiple streams of health care (AYUSH), it is important that the head start that Tamil Nadu has in traditional veterinary care and treatment systems be recognized and utilised.

vi. Deployment of mobile veterinary services is an intervention that would be a befitting intervention especially in view of the inaccessibility and poor connectivity in the hills.

**F.** Promoting Climate Resilient Agriculture practices

Climate change, especially in higher altitudes, is likely to reduce potential agricultural output in the longer term, and increase risk of hunger. The potential of decreased availability of foods such as tubers collected from the wild would further aggravate the existing food insecurity of the tribal communities.

Concurrently, there is an immense diversity of agricultural practices in the hills of Tamil Nadu, because of the range of climate and other environmental variables; cultural, institutional, and economic factors; and their interactions. This means there is a correspondingly large array of possible adaptation options. The following adaptation strategies under various themes are recommended:

**1.** Cropping Systems

- Altering inputs such as varieties/species to those with increased resistance to heat shock and drought, altering fertilizer rates to maintain grain or fruit quality

consistent with the prevailing climate, altering amounts and timing of irrigation and other water management.

- Wider use of technologies to "harvest" water, conserve soil moisture (e.g., crop residue retention), and use and transport water more effectively where rainfall decreases.
- Managing water to prevent water logging, erosion, and nutrient leaching where rainfall increases. Altering the timing or location of cropping activities.
- Diversifying income through altering integration with other farming activities such as livestock raising.
- Improving the effectiveness of pest, disease, and weed management practices through wider use of integrated pest and pathogen management, development, and use of varieties and species resistant to pests and diseases and maintaining or improving quarantine capabilities and monitoring programs.
- Using climate forecasting to reduce production risk.

**2. Livestock-** Adaptations in field-based livestock include additional care to continuously match stock rates with pasture production, altered rotation of pastures, modification of times of grazing, and timing of reproduction, alteration of forage and animal species/breeds, altered integration within mixed livestock/crop systems including using adapted forage crops, reassessing fertilizer applications, care to ensure adequate water supplies, and use of supplementary feeds and concentrate.[14] This activity can be converged with 'National Initiative on Climate Resilient Agriculture' which proposes the following interventions at village level.

**3.** Village level interventions towards climate resilient agriculture

i. Building resilience in soil health is the key property that determines the resilience of crop production under changing climate. Mandatory soil testing can be initiated or strengthened in all villages to ensure balanced use of chemical fertilizers. Improved methods of fertilizer application, matching with crop requirement to reduce nitrous oxide emission is proposed.

[14] Howden et al. 2007

ii. Adapted cultivars and cropping systems- Improved, early duration drought, heat and flood tolerant varieties can be introduced for achieving optimum yields despite climatic stresses. This varietal shift can be carefully promoted by encouraging village level seed production and linking farmers' decision-making to weather based agro advisories and contingency planning.

iii. Rainwater harvesting and recycling- Rainwater harvesting and recycling through farm ponds, restoration of old rainwater harvesting structures in dryland/rainfed areas, percolation ponds for recharging of open wells, bore wells and injection wells for recharging ground water can be taken up for enhancing farm level water storage.

iv. Water saving technologies- Since climate variability manifests in terms of deficit or excess water, major emphasis has been laid on introduction of water saving technologies like direct seeded rice, zero tillage and other resource conservation practices, which also reduce GHG emissions besides saving water.

v. Farm machinery (custon1 hiring) centers- Community managed custom hiring centers can be setup in each village to access farm machinery for namely sowing/planting. This is an important intervention to deal with variable climate like delay in monsoon, inadequate rains needing replanting of crops.

vi. Crop contingency plans- Operationalization of contingency plans during aberrant monsoon years through the districU block level extension staff can help farmers cope with climate variability.

vii. Livestock and fishery interventions- Use of community lands for fodder production during droughts/floods, improved fodder/feed storage methods, feed supplements, micronutrient use to enhance adaptation to heat sfress, preventive vaccination, improved shelters for reducing heaUcold stress in livestock, management of fish ponds/tanks during water scarcity and excess water are some key interventions in livestock/fishery sector.

viii. Weather based agro advisories- Automatic weather stations at KVK experimental farms and mini-weather observatories in project villages can be established to record real time weather parameters such as rainfall,

temperature and wind speed etc. both to issue customized agro advisories and improve weather literacy among farmers.

ix. Institutional interventions- Institutional interventions either by strengthening the existing ones or initiating new ones relating to seed bank, fodder bank, commodity groups, custom hiring centre, collective marketing, introduction of climate literacy through a village level weather station can be launched to ensure effective adoption of all other interventions and promote community ownership of the entire programme.

x. Village Climate Risk Management Committee (VCRMC) - A village committee representing all categories of farmers including women and the landless can be formed with the approval of Gram Sabha to take all decisions regarding interventions, promote farmers participation and convergence with ongoing Government schemes relevant to climate change adaptation. VCRMC would participate in all discussions leading to finalizing interventions, selection of target farmers and area, and liaison with Gram Panchyat and local elected representatives and maintain all financial transactions under the project.

Ill. Invasive Alien Species Management

**A. Mitigate the impact of Invasive Alien Species**

A large number of invasive alien species (IAS) are found in Tamil Nadu. Colonial invasion introduced several species in Nilgiris and Palani Hills. The total number of alien species in Tamil Nadu according to Tamil Nadu ENVIS centre is 1274. A majority of alien species (998) exist under cultivation. Out of the total 276 taxa have either naturalized or turned invasive. The naturalized species in this list, though not invasive currently, have the potential to turn invasive. It has been observed that the complete eradication of invasive species is difficult and hence their spread needs to controlled and monitored (http://www.tnenvis.nic.in/tnenvis _old/IASinvasive11.htm). The following assessments and interventions need to be taken up in this regard:

./ The kinds and conditions of habitats where invasive species are most successful

./ The traits of successful invaders

./ The vectors of invasive species

./ Mechanisms of habitat degradation due to invaders

../ Cascading effects of invasive species through ecological and socio-economic systems

There is a need to categorize alien species according to the level of threat and rate of spread in each of the bioclimatic zones. After the classification, broad and replicable management strategies need to be developed based on a range of options related to (a) early detection, (b) control and removal, and (c) ecosystem management and monitoring of IAS (Kannan et al. 2013).

B. Invasion by Non-native trees

There are three major exotic species in the hills of Tamil Nadu including wattle *(Acacia meamsit),* eucalyptus *(Eucalyptus globulus),* and pine *(Pinuspatula).* While wattle was initially introduced for tannin production, both pine and eucalyptus were grown for firewood. Wattle is an extremely invasive species that has spread over vast expanses in the hills. On the other hand growth of eucalyptus has been detrimental to water table in the region. It has been reported that while the exotic non-native trees have invaded grasslands, they have been unsuccessful in invading shola forest patches. Wattle requires more attention in the region as a result of its vast spread and it being a preferred firewood tree in the region. Intensive plantation of these species followed by their widespread invasion has modified the water and soil properties in the region, hence, it is very difficult to restore these area_s.

It is recommended that management interventions should be initiated at a small scale through prioritization and taking into account the fuel-wood requirement. The management of invasive species is especially challenging in tropical human-dominated landscapes as they reduce the densities of native species, many of which fulfil subsistence needs of the rural poor. In some cases they are also important sources of rural livelihoods. Management strategies that promote use of the invasive as a way of minimizing the net costs of the invasive species are to be initiated. (Shaanker, 2010).

**IV.** Habitat management

Considerable biodiversity exists outside the boundaries of designated conservation areas in man-modified habitats and secondary forests. Hence, it is important to look at of patches, and restoring degraded areas, including productive areas. Tropical

plantation crops are significant for conservation because of the area they occupy, location in significant biodiversity hotspots, and land-use practices. In the hills of Tamil Nadu, large area is under plantations, especially of crops such as tea, coffee, cardamom, etc. adjoining key protected areas in the region. These plantations have been found to retain a large number of natural habitat remnants including rainforest fragments, shola-grasslands, and streams within these plantations, like in the Anamalai hills and Nilgiris, containing a great diversity of plants and animals. Studies in the region also show that a large number of fragments exist and continue to hold considerable conservation value as refuges of biodiversity including many endemic and endangered species and are important also as corridors for animal movement across the landscape.

Plantations can contribute to biodiversity within landscapes through the following three mechanisms:

- Habitat supplementation or complementation to forest species
- Connectivity
- Buffering effects

The existing support to farmers by way of subsidies would be based on the extent of individual land holding. Small and marginal farmers would be supported with a subsidy of 90:10, while the big farmers would be subsidized at a ratio of 50:50.

*Certification*

A variety of certification schemes including those being pilot tested by the State Department of Agriculture are available; like the well-established organic agriculture movement (and organic certification as overseen by the !FOAM-the International Federation of Organic Agriculture Movements) which has a primary focus on avoidance of chemical inputs for health and environmental reasons. In contrast, Fair Trade certification lays emphasis on social issues related to worker welfare and safety. The UtzCapeh certification aims to drive a balance between social and environmental concerns, but is lax in strict or well-defined criteria. The Smithsonian Bird-Friendly Coffee Certification is strong on stipulating organic agriculture and specific conditions related to shade tree cover, but ignores other aspects of sustainability (e.g., hunting of wildlife, social welfare).

Rainforest Alliance (RA) certification, perhaps the largest certification programme in tea and coffee plantations currently, attempts to encompass social, environmental, and economic criteria. RA certification is based on a set of standards developed by a network on non-profit organizations, called the Sustainable Agriculture Network (SAN), of which RA is a member and implementing partner. The SAN Standards and RA certification, were developed and implemented initially in Central and South America, for crops such as banana, coffee, and cacao. Presently, the SAN standards that apply for farms are the SAN Sustainable Agriculture Standard (July 2010) and the periodically updated SAN List of Prohibited Pesticides.

Although the standards do not stipulate organic cultivation, the list of prohibited pesticides ensures that the worst agrochemicals, internationally screened and prohibited, are not used for cultivation and additionally that chemicals falling within the highest toxicity classes are gradually reduced and replaced. Farmers groups and cooperatives will have to meet additional criteria specified in standards documents applicable for groups.

Farms that meet requirements based on screening by third party auditors can become Rainforest Alliance Certified™ and may apply for use of the 'frog' seal on packets and bags to market their produce.[15]

A rationalized approach to linear infrastructure

Roads and electricity transmission lines are an essential part of India's development, providing for vital needs of transport, communication, and power. The creation, expansion, and maintenance of such infrastructure also carries significant ecological and environmental impacts and social and cultural consequences. Such impacts are particularly serious for sensitive natural areas, especially Protected Areas (PAs) such as Wildlife Sanctuaries, National Parks, Community Reserves, and Wetlands, and for indigenous human communities dependent on these natural resources for their lives and livelihoods. Hence, it is absolutely essential to undertake impact assessment studies prior to commissioning of such projects in natural areas. All road and powerline projects in natural areas and their vicinity shall have a comprehensive Social and

[15] Mudappa and Shankar Raman, 2012

Environmental Impact Assessment (SEIA) carried out by an independent agency and the projects may be considered subject to their fulfilling the statutory obligations .

**6. List of works that can be undertaken by the line departments**

The following section details the departments that are to be involved in the programme and the list of works that can be implemented:

| Sl. No | Implementing HODs/PIAs | Sectors | Works |
|---|---|---|---|
| 1 | The Chief Engineer, AED | Soil Conservation | 1. Construction of Check Dams<br>2. Construction of Gabion structures and Gully plugs<br>3. Construction of Dry Stone Masonry Check Dam<br>4. Construction of Loose boulder check dam<br>5. Development of Percolation ponds<br>6. Construction of Recharge Shaft |
| 2 | The PCCF | Forestry and Ecology | 1. Establishment of riparian plant species nurseries<br>2. Reforestation of riparian zones<br>3. Restoration of marshes, swamps and peat bogs<br>4. Identification and restoration of terrestrial Invasive Alien Species Zones<br>5. Identification and restoration of aquatic Invasive Alien Species Zones<br>6. Establishment of Medicinal Plant Nurseries, Mass Propagation Protocols and Mass Cultivation.<br>7. Construction of percolation ponds<br>8. Construction of Dry Stone Check dam |

| Sl. No | Implementing HODs/PIAs | Sectors | Works |
|---|---|---|---|
| 3 | The Director of Agriculture | Organic Farming | 1. Implementation of Integrated Farming Systems for Small and Marginal Farmers<br>2. Training, capacity building and technical support for organic farming and certification and precision farming.<br>3. Training and capacity building in formulation and use of bio pesticides<br>4. Establishment of seed banks of traditional cultivars<br>5. Improvement of soil health through combination of physical and biological interventions<br>6. Establishment of farm equipment hiring centres<br>7. Development of crop contingency plans and low external input farming systems<br>8. Development of Weather based Agro Advisories |
| 4 | The Director of Horticulture | Horticulture | 1. Distribution of traditional cultivars of fruit, vegetable and spices<br>2. Development of commercial medicinal plant cultivation<br>3. Promotion of post harvest and primary processing technologies<br>4. Establishment of community seed banks<br>5. Establishment of organic farming systems, certification systems.<br>6. Establishment of ware houses for horticultural produce |

| Sl. No | Implementing HODs/PIAs | Sectors | Works |
|---|---|---|---|
| 5 | The Director of Adi-Dravidar Welfare and Tribal Welfare | Adi-Dravidar Welfare and Tribal Welfare | 1. Development of in situ livelihood opportunities through skill development programmes that maximize the use of traditional knowledge systems<br>2. Establishment of village based bio-enterprises<br>3. Providing safe drinking water facilities to the tribal hamlets. |
| 6 | The Director of Animal Husbandry | Animal Husbandry | 1. Launch Mobile Veterinary Services<br>2. Distribution of concentrated Feeds<br>3. Distribution of normal Feeds |
| 7 | The Director of Town Panchaya ts | Gap-filling infrastructure | 1. Providing drinking water facilities<br>2. Construction of paver block<br>3. Construction of small bridges<br>4. Construction of check dam |
| 8 | The Director of RD&PR | Gap-filling Infrastructure (DRDA) | 1. Construction of Drainage work and small culvert<br>2. Providing bore well with tank, motor and power pump.<br>3. Providing the new motor pump and pipe line for the existing drinking well. |
| 9 | TEDA | Renewable Energy | 1. Provision of Lantern and Home lighting system<br>2. Providing Stand alone Solar street lights<br>3. Repairing and maintenance of existing solar lights |

| Sl. No | Implementing HODs/PIAs | Sectors | Works |
|---|---|---|---|
| 10 | The Director of Agricultural Marketing and Agri Business | Agricultural Marketing and Agri Business | 1.i:::stablishment of farmer enterprises for certified agricultural products |
| 11 | The Director.Department of Fisheries | Fisheries | 1. Establish inland fishery systems for premium species such as trout.<br>2. Monitoring Aquatic Invasive Alien Species and implement mitigation measures<br>3. Promote eco friendly fishing techniques<br>4. Establishment of facilities for primary processing and storage |

The following section provides further details on the proposed works:

**1.** Department of Forests and Environment

- Riparian forest assessment, protection and restoration
- Staff training and capacity building for riparian forest management
- Assistance and expertize for private forest management
- Management of wetlands located in the hills including assessments and restoration
- Regulation of invasive alien species, terrestrial and aquatic, addressing plants and animals
- NTFP collection- preparation of resource assessment plans, harvesting plans, paying particular attention to the local occurrence of species or habitats of special conservation concern and species that perform vital ecological functions using the expertise of biodiversity specialists and promote low impact harvesting
- Coordinate actions of private forest owners, users and managers across landscapes to best ensure the maintenance of sufficient high quality connected habitat for species. Promote collaboration between research organizations and forest to develop silvicultural knowledge and practices.

- Encourage the establishment of representative natural forest within the plantation estate and, where possible, the restoration of natural forests on appropriate sites.
- Facilitate ecological research and monitoring systems (including long-term monitoring plots) with the aim of providing useful guidance on forest dynamics, regeneration and genetic diversity of valuable tree species. Collaborate to collect, synthesize, analyse and share data on forest biodiversity based on permanent forest plots, inventories and other sources and make these accessible to forest planners, forest managers and other stakeholders.
- Manage planted forests in ways that benefit biodiversity, both within the planted forest itself and in areas of natural forest that are retained within the planted forest landscape (Secretariat of the Convention on Biological Diversity. 2009).
- Construction and maintenance of sewage treatment plants for villages
- Training and capacity building of citizen monitors

**2.** Department of Agriculture

- Wider use of technologies to "harvest" water, conserve soil moisture (e.g., crop residue retention), and use and transport water more effectively where rainfall decreases.
- Promotion of Integrated Pest Management and the use of Biofertilisers
- Mandatory soil testing can be done in all villages to ensure balanced use of chemical fertilizers
- Encouraging village level seed production, community seed banks and linking farmers' decision-making to weather based agro advisories and contingency planning
- Setting up Community managed custom hiring centers for equipment for sowing, harvesting, etc.
- Setting up of seed bank, fodder bank, commodity groups, custom hiring centre, collective marketing, introduction of weather index based insurance and climate literacy through a village level weather station.
- Undertake soil conservation measures through the Agricultural Engineering Department.

- Build capacities in Precision Farming and Organic Farming
- Strengthen existing Extension Centres and Agricultural Marketing Systems.

**3.** Department of Animal Husbandry

- Develop processing and marketing and especially the development of small- scale processing suited to village conditions
- In areas of sufficient rainfall and where adequate management can be ensured, the use of legumes is recommended to increase pasture productivity and improve the diet. While in arid and semi-arid areas which have a low production potential per unit area the main emphasis should be on improvements through management.
- In regions where breed substitution is considered to have potential, careful assessment of the probable merit of exotic stock in sustaining a particular production system must be undertaken taking into account of the multi-purpose function of animals.
- Veterinarians should take the initiative in increasing animal productivity at the farm level by delivering programmes to control sub-clinical disorders, sustain health and promote higher levels of productivity.
- Regulation of grazing in important catchment areas
- Construction of shelters for livestock to reduce heat stress
- Deploy mobile veterinary services and maximize the use of traditional veterinary systems and practices.

**4.** Department of Fisheries

- Study the impact of dam construction on fish diversity and populations
- Construct fish passes in dams which must be designed to be versatile and open to modifications.
- Assess, monitor and control the invasive fish species in reservoirs and rivers
- Regulate overfishing and excess fishing capacity and should implement management measures to ensure that fishing effort is commensurate with the productive capacity of the fishery resources and their sustainable utilization.

- Promote and supply selective and environmentally safe fishing gear and practices should be further developed and applied, to the extent practicable, in order to maintain biodiversity and to conserve the population structure and aquatic ecosystems and protect fish quality.
- Develop and construct harvesting, handling, processing and distribution structures and mechanisms of fish and fishery products in a manner which will maintain the nutritional value, quality and safety of the products, reduce waste and minimize negative impacts on the environment.
- Maintenance or restoration of floodplains and riverine wetlands.

**5.** Department of Horticulture

- Construct improved collection, storage, distribution and sale at Panchayat/Block level and provide adequate aid in terms of technology and expertise to reduce losses
- Assess and improve the conditions of old and abandoned orchards
- Encourage the use of integrated pest management and organic farming.
- The growth of the horticulture sector can be facilitated through increased participation of small and marginal farmers in an organized manner and farmers being trained with entrepreneurial skills
- Research is necessary to develop new marketing initiatives, the post-harvest losses and wastage due to poor infrastructure facilities.

**6.** Departments of Rural Development & Panchayati Raj and Municipal Administration

- Coordinate the preparation of integrated strategic and action plans for the implementation of the programme
- Conduct awareness and training and capacity building programmes for the local bodies to develop and implement the SADP.
- Establish monitoring and evaluation protocols and systems to oversee programme implementation
- Establish local level advisory committees drawing upon representative stakeholder groups to oversee and guide the programme.

- Ensure integration with other ongoing or new programmes for the area, liaise with the District Administration on issues pertaining to the programme.

**7.** Department of Adi-Dravidar and Tribal Welfare

The hills of Tamil Nadu are home to Primitive Tribal Groups (PTGs), Scheduled Tribes and other indigenous forest dwelling communities (see Map). It is hence imperative that works that ensure livelihood security, and more importantly ensure and contribute to meaningful participation by the marginalized communities are undertaken. These include:

../ Reviving existing groups such as SHGs, tribal councils, village forest committees etc.

../ Providing technical and logistic support for seasonal livelihoods such as NTFP collection.

../ Implement skill development programmes that are identified as feasible and foster livelihood support programmes.

../ Construction, repair and maintenance of village and hamlet infrastructure

../ Strengthening existing educational/literacy infrastructure.

8 Water Resources Organisaiton (PWD-WRO)

- Developing and implementing a comprehensive strategy and action plan for protecting/restoring/conserving and managing the river system, including aspects such as bunding, strengthening of bunds, realignment of smaller streams, desilting, deepening etc.
- Protocols and guidelines for river course management be developed exclusively for Tamil Nadu.
- Establishing water quality monitoring systems to feed real time data for planning and mid course corrections.
- Undertake comprehensive assessment for the mid and high altitude wetlands, and implement site specific restoration programmes.

## 7. Implementation Mechanism

The goal and scope of the Special Area Development Programme is to make a systemic intervention for the hill ranges of Tamil Nadu so that the rich biodiversity of the ghats is conserved not only for its intrinsic value but also to secure the needs, aspirations and livelihoods of the resident human communities.

It is recognized that systemic interventions need to have the active and real time participation of local bodies.

It is further recognized that programme components and works need to be based on an Integrated Plan. For the purposes of developing the Integrated Plan, the services of expert organisations / academic institutions / Non-governmental organisations may be utilised.

This integrated plan, on the lines of being a strategy and action plan needs to be evolved using the following principles:

1. An overall framework for the Integrated Plan needs to be developed. The existing HADP office in view of its past experience of evolving such plans would be appropriately re-designated, and would be responsible for the programme.
2. The Integrated Plan needs to be at the scale of a district, with sub plans for blocks. Hence the onus of developing the Integrated Plans which would detail the strategy and action components based on local conditions would be with the district administration, which in turn may choose to entrust the responsibility to an appropriate line department or agency.
3. All plans need to be developed or spearheaded by the local bodies (as appropriate, viz. Village Panchayat, Town Panchayats or Municipalities); not as stand-alone documents but by incorporating ongoing / new agenda or projects. The local bodies may be encouraged to co-opt experts to support the activity.
4. The plans, most importantly need to be entrenched in the principle of conservation of biodiversity and sustainable development, and have well defined strategies and actions. Most importantly, the actions need to be prioritized over immediate, medium and long term time frames, and accordingly selected for implementation.

5. It is also imperative that the plans detail the mechanism by which there is an integrated approach; in other words, the works of one line department should not serve to contradict the scope and functionality of other line departments especially in view of the fragile nature of the landscape under consideration.
6. The Plans so developed should be peer reviewed by the STCHA and the SLND and endorsed by the District Administration for implementation.

State Level Empowered Committee

A State Level Empowered Committee headed by the Vice-Chairperson, State Planning Commission, Additional Chief Secretary, Finance Department or his representative, Principal Secretary, Planning, Development and Special Initiatives Department and the concerned Secretaries to Government shall approve the Annual Plan and the Integrated Plans prepared for blocks and shall accord sanctions for individual projects or sub projects, as and when the proposals are received from the districts / local bodies. This Committee will also be mandated to be the Steering Committee to monitor, review and evaluate the implementation and impact of the project. At the level of the District, the District Planning Cell will be responsible for the imlementatiqn of SADP.

Metrics for Monitoring Programme Implementation and Efficacy

The SADP has been evolved to foster conservation of biodiversity in the hill areas of the State while ensuring that local communities derive a host of direct and benefits from the programme. This twinning of objectives necessitates the use of robust metrics to monitor programme implementation and efficacy.

The following cluster of metrics hence recommended:

**Livelihoods and Poverty Reduction:** The impact of the project for this component, especially in view of the marginalized sections that the project seeks to address would comprise of:

1. Number of in situ livelihoods generated
2. Increase in per capita / household income
3. Change in migration patterns
4. Increase in biological resources based livelihoods

**Agriculture and Animal Husbandry:** The impact of the project for this component would be based on the following parameters:

1. Increase in area under organic farming and certification
2. Decrease in the use of external inputs for farming
3. Increase in productivity
4. Increase in area of multi-crop, agro forestry systems, medicinal plants cultivation
5. Increase in area under local cultivar-based farming
6. Lower incidence of veterinary epidemics
7. Implementation of integrated farming systems
8. Widespread use of Precision Farming techniques.

Water Resources: Habitats, Resource Availability

The focus of SADP is to ensure water security for the state of Tamil Nadu by addressing systems and habitats that have hitherto been accorded low priority. The metrics for assessment are:

1. Increase in riparian vegetation along riverine systems
2. Number of high altitude wetlands protected, restored using principles of restoration ecology
3. Strengthening of river courses using natural embankments
4. Establishment of water quality monitoring systems
5. Increase in surface water and ground water availability especially in town panchayats

Forests and Ecology

The hills of Tamil Nadu are repositories of significant biodiversity of global significance. The metrics for forests and ecology would be

1. Decrease in area under Invasive Alien Species, terrestrial and aquatic
2. Increase in areas restored, especially sholas and grasslands and wetlands
3. Increase in the identification of new areas for restoration especially peat lands
4. Increase in forest cover of all major types

## 8. Allocation of Resources

A sum of Rs.75.00 Crores has been allotted for the Special Area Development Programme for the year 2015-16. In view of the fact that the designated area for the Special Area Development Programme is targeted to the hill ranges of Tamil Nadu which are at an absolute altitude of > 600 m ASL from the base, and the target area is varied being spread over **10 districts, 40 taluks and 67 blocks** (as detailed under Annexure I) and covering **36 Municipalities, 148 Town Panchayats and 1266 Village Panchayats** of the state, the Annual Action Plan approved by the State level Empowered Committee will become the basis for funding and phasing with mid course corrections based on the need and feedback.

Within the yearly allocation of the funds will be used for financing approved projects/schemes/interventions. These funds shall strictly be an additionality to meet gaps which cannot be addressed through ongoing schemes, and are not intended to reduce the physical and financial contributions of the local body. However, the State Level Empower.ed Committee may, at its discretion, consider exceptions to this norm.

It is also to be recognized that historically, the district of Nilgiris which has almost its entire administrative area designated as hilly as also being ecologically significant has received substantial funding. An immediate cessation of this privilege would not be ideal, although in view of the fact that a larger zone of intervention is being proposed in the revised programme. Likewise, it is also recommended that a two tier system of resource allocation be implemented, the details of which are as follows:

| **Total Budget: Rs. 75.00 Crores/ Financial Year 2015-16** | | |
|---|---|---|
| Sl. No. | Budget Head | Percentage (%) of the total allocation |
| 1. | Programme Implementation Cost / Western Ghats Districts with 6 districts | 38.00 |
| 2. | Programme Implementation Cost/Western Ghats/HADP Area/Totally Hilly District/4 district | 60.00 |
| 3. | Monitoring and Evaluation | 2.00 |
| | **Total** | **100.00** |

Annexure I

List of Districts, Taluks and Blocks under SADP that form a part of the Western Ghats of Tamil Nadu

Implementing list of Districts, Taluks and Blocks under PD/SADP that form a part of the Western Ghats (4 Districts,16 Taluks and 26 Blocks)

Unit - I

| *Sl.No.* | *District Name* | *Sl.No.* | *Name of the Taluk* | *Sl.No.* | *Name of the Blocks* |
|---|---|---|---|---|---|
| 1 | THE NILGIRIS | 1 | Udhagamanda lam | 1 | Udhagamandalam |
| | | 2 | Coonoor | 2 | Coonoor |
| | | 3 | Kotagiri | 3 | Kotagiri |
| | | 4 | Gudalur | 4 | Gudalur |
| | | 5 | Pandalur | | |
| | | 6 | Kundah | | |
| 2 | COIMBATORE | 7 | Coimbatore North | 5 | P.N.Palayam |
| | | | | 6 | Sarkarsamakulam |
| | | 8 | Coimbatore South | 7 | Thondamuthur |
| | | | | 8 | Madukkarai |
| | | 9 | Pollachi | 9 | Kinathukadavu |
| | | | | 10 | Pollachi North |
| | | | | 11 | Pollachi South |
| | | | | 12 | Anamalai |
| | | 10 | Metupalayam | 13 | Karamadai |
| | | 11 | Valparai | 14 | Anamala i |
| 3 | TIRUPPUR | 12 | Avinashi | 15 | Avinashi |
| | | 13 | Udumalpet | 16 | Gudimangalam |
| | | | | 17 | Madathukulam |
| | | | | 18 | Udumalpet |
| | | 14 | Kangeyam | 19 | Kangeyam |
| | | | | 20 | Vellakovil |
| | | 15 | Dharapuram | 21 | Kundadam |
| | | | | 22 | Mulanur |
| | | | | 23 | Dharapuram |
| 4 | ERODE | 16 | Sathymanga lam | 24 | Sathymangalam |
| | | | | 25 | Bhavanisagar |
| | | | | 26 | Talavadi |

Implementing list of Districts, Taluks and Blocks under PO/DPC that form a part of the Western Ghats **(6 Districts,24 Taluks and 41 Blocks)**

**Unit** - II

| *Sl.No.* | *District Name* | *Sl.No.* | *Taluk Name* | *Sl.No.* | *Block Name* |
|---|---|---|---|---|---|
| 5 | DINDIGUL | 17 | Kodaikanal | 27 | Kodaikanal |
| | | 18 | Oddanchatram | 28 | Oddanchatram |
| | | 19 | Palani | 29 | Thoppampatti |
| | | | | 30 | Palani |
| | | 20 | Dindigul | 31 | Reddiyarchatram |
| | | | | 32 | Dindigul |
| | | | | 33 | Sanarpatti |
| 6 | KANYAKUMARI | 21 | Vilavancode | 34 | Melpuram |
| | | | | 35 | Munichirai |
| | | | | 36 | Killiyur |
| | | 22 | Thovala | 37 | Thovala |
| | | 23 | Kalkulam | 38 | Tiruvattar |
| | | | | 39 | Takkalai |
| | | | | 40 | Kurundankodu |
| | | 24 | Agastheeswaram | 41 | Rajakamangalam |
| 7 | MADURAI | 25 | Usilampatti | 42 | Chellampatti |
| | | | | 43 | Usilampatti |
| 8 | THENI | 26 | Periyakulam | 44 | Periyakulam |
| | | 27 | Bodinayakanur | 45 | Bodinaickanur |
| | | 28 | Theni | 46 | Theni |
| | | 29 | Andipatti | 47 | Andipatti |
| | | 30 | Uttamapalayam | 48 | Uttamapalayam |
| | | | | 49 | Chinnamanur |
| | | | | 50 | Cumbam |
| 9 | TIRUNELVELI | 31 | Sivagiri | 51 | Vasudevanallur |
| | | 32 | Sankarankoil | 52 | Sankarankoil |
| | | | | 53 | Melanelithanallur |
| | | | | 54 | Kuruvikulam |
| | | 33 | Shencottai | 55 | Kadayanallur |
| | | | | 56 | Shencottai |
| | | 34 | Tenkasi | 57 | Alangulam |
| | | | | 58 | Tenkasi |
| | | | | 59 | Keelapavur |

| | | | | | |
|---|---|---|---|---|---|
| | | 35 | Ambasamudram | 60 | Ambasamudram |
| | | 36 | Nanguneri | 61 | Kalakadu |
| | | | | 62 | Nanguneri |
| | | 37 | Radhpuram | 63 | Valliyur |
| | | | | 64 | Radhapuram |
| 10 | VIRUDHUNAGAR | 38 | Srivilliputhur | 65 | Srivilliputhur |
| | | 39 | Rajapalayam | 66 | Rajapalayam |
| | | 40 | Sattur | 67 | Sattur |

Abstract

| Unit | Implementation area covered under SADP | No. of Districts | No. of Taluks | No. of Blocks |
|---|---|---|---|---|
| Unit I | PD/HADP | 4 | 16 | 26 |
| Unit II | Western Ghats PO/DPC | 6 | 24 | 41 |
| | Total | 10 | 40 | 67 |

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| | | | |
|---|---|---|---|
| Technical Cell - II | | | |
| 1 | Section Officer *(Rs.15600-39100 G.P.5400)* | 1 | |
| 2 | Assistant Section Officer *(Rs.9300-34800 G.P.4600)* | 3 | |
| 3 | Typist *(Rs.5200-20200 G.P.2400)* | 1 | |
| 4 | Office Assistant *(Rs.4800-10000 G.P.1300)* | 1 | |
| Forest | | | |
| 1 | Assistant Conservator of Forest *(Rs.15600-39100 G.P.5400)* | 1 | |
| 2 | Junior Accountant *(Rs.5200-20200 G.P.2800)* | 3 | |
| 3 | Assistant *(Rs.5200-20200 G.P.2800)* | 4 | |
| 4 | Draughting Officer-Grade - II I *(Rs.5200-20200 G.P.2800)* | 3 | |
| 5 | Junior Assistant(Rs.*5200-20200 G.P.2400)* | 2 | |
| 6 | Steno Typist *(Rs.5200-20200 G.P.2800)* | 1 | |
| 7 | Forest Guard *(Rs.5200-20200 G.P.2800)* | 1 | |
| | Total Post (HADP) | | 51 |
| Western Ghats Development Programme | | | |
| Soil Conservation | | | |
| 1 | Assistant Executive EnQineer *(Rs.15600-39100 G.P.5400)* | 1 | |
| Forest | | | |
| 1 | Assistant *(Rs.5200-20200 G.P.2800)* | 1 | |
| Technical - Cell - I | | | |
| 1 | Section Officer *(Rs.15600-39100 G.P.5400)* | 1 | |
| 2 | Senior Programmer *(Rs.15600-39100 G.P.5400)* | 1 | |
| 3 | Assistant Section Officer *(Rs.9300-34800 G.P.4600)* | 1 | |
| 4 | Console Operator *(Rs.9300-34800 G.P.4400)* | 1 | |
| 5 | Assistant *(Rs.5200-20200 G.P.2600)* | 1 | |
| 6 | Typist *(Rs.5200-20200 G.P.2400)* | 1 | |
| 7 | Vehicle Driver *(Rs.5200-20200 G.P.2400)* | 1 | |
| 8 | Record Clerk *(Rs.4800-10000 G.P.1650)* | 1 | |
| 9 | Office Assistant *(Rs.4800-10000 G.P.1300)* | 1 | |
| | Total post (WGDP) | | 11 |
| | Total Post (HADP & WGDP) | | 62 |

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## Annexure - III

## HADP CELL STAFF TO BE REDEPLOYED to SPC.

| Sl. No. | Name of the Post | No. of Post | Scale of Pay | Remarks |
|---|---|---|---|---|
| 1 | Assistant Engineer - BE Civil / ME Civil (Agricultural Engineering Department) | 1 | Rs.15600-39100 (G.P.5400) | To be filled by Redeployment to TNSLURB of SPC |
| 2 | Junior Research Assistants / Deputy Block Dev. Officer. | 2 | Rs.9300-34800 (G.P.4800) | To be filled by Redeployment to TNSLURB of SPC |
| 3 | Console operator | 1 | Rs. 9300-34800 (G.P. 4400) | To be filled by Redeployment to TNSLURB of SPC |
| 4 | Junior Draughting Officer (Agricultural Engineering) | 2 | Rs.5200-20200 (G.P. 2800) | To be filled by Redeployment to TNSLURB of SPC |
| 5 | Steno Typist (Grade III) (RD Dept, Revenue Dept, or other departments | 1 | Rs.5200-20200 (G.P. 2800) | To be filled by Redeployment to TNSLURB of SPC |
| 6 | Assistants (RD Dept, Revenue Dept, or other departments) | 3 | Rs.5200-20200 (G.P. 2800) | To be filled by Redeployment to TNSLURB of SPC |
| 7 | Office Assistant cum Driver (RD Dept, Revenue Dept, or other departments) | 1 | Rs.4800-10000 (G.P. 1300) | To be filled by Redeployment to TNSLURB of SPC |
| | **Total** | **11** | | |

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S. Kamalanathan
Section Officer 4/3/2016.

4/3/16

**ASSETS CREATED UNDER HADP:**

**IMMOVABLE ASSETS**

a. HADP Office building
b. HADP Training centre
c. Project Director's Quarters
d. Assistant Project Directors Quarters
e. Staff Quarters (2 Blocks with 8 Quarters)
f. HADP Cultural Centre
g. HADP Rest House

**MOVABLE ASSETS**

1. Qualis – TN 43G 1001
2. Scorpio – TN 43G 0900
3. Bolero – TN 43G 0366
4. Ambassador - TN 43G 0387
5. Bolero – TN 43G 0450

## ABBRIVIATIONS

| | |
|---|---|
| SADP | Special Area Development Programme |
| HADP | Hill Area Development Programme |
| WGDP | Western Ghats Development Programme |
| BRGF | Backward Regions Grant Fund |
| CSS | Centrally Sponsored Schemes |
| DRDA | District Rural Development Agency |
| IAS | Invasive Alien Species |
| IASM | Invasive Alien Species Management |
| !FOAM | International Federation of Omanic Amiculture |
| Movements MVTG | Most Vulnerable Tribal Groups |
| NNRMS | National Natural Resources Management System |
| NRCP | National River Conservation Plan |
| NPCA | National Plan for Conservation of Aquatic |
| NWCP | National Wetlands Conservation Programme |
| NLCP | National Lake Conservation Plan |
| NICRA | National Initiative on Climate Resilient Agriculture |
| PAs | Protected Areas |
| PIAs | Project Implementing Agencies |
| PCCF | Principal Chief Conservator of Forests |
| PC-NNRMS | Planning Comittee- National Natural Resources Management System |
| PCRGP | Promoting Climate Resilient Agriculture proactive |
| PFOF | Precision Farming and Organic Farming |
| PMPCPV | Promote Medicinal Plants Cultivation in Private |
| Lands PTGs | Primitive Tribal Groups |
| RA | Rainforest Alliance |
| RAC | Rainforest Alliance Certified |
| RFC | Riparian Forest Conservation |
| SAN | Sustainable Agriculture Network |
| SEIA | Social and Environmental Impact Assessment |
| STCHA | State Level Technical Cell for Hill Areas of Tamil Nadu |
| TEDA | Tamil Nadu Energy Development Agency |
| TNFD | Tamil Nadu Forest Department |
| TNPCB | Tamil Nadu Pollution Control Board |
| VCR MC | Village Climate Risk Management Committee |
| WRO | Water Resources Organisation |

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