



**BIODIVERSITY FINANCIAL NEED ASSESSMENT
FOR THE IMPLEMENTATION OF
INDIA'S NATIONAL BIODIVERSITY ACTION PLAN
[AT CENTRAL GOVERNMENT LEVEL]**

REVISED FINAL REPORT



This revised report was prepared by **Dr. J.Soundrapandi**, under the Biodiversity Finance Initiative-India with the guidance of **Mr.T.Rabikumar IFS**, Secretary, National Biodiversity Authority, Chennai and **Dr. V.Rajagopalan, IAS** (retd.), Senior Technical Adviser to the BIOFIN Initiative-India. The encouragement and support received from **Dr. B. Meenakumari**, Chairperson, National Biodiversity Authority, Chennai is acknowledged.

¹For the early full report please refer:

Soundrapandi, J. (2017). Biodiversity Financial Needs Assessment for the Implementation of India's National Biodiversity Action Plan. National Biodiversity Authority, Chennai. India. December, 2017.

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I. INTRODUCTION TO REFINEMENTS IN THE BIODIVERSITY FINANCIAL NEEDS ASSESSMENT

This revised report¹ of Biodiversity Financial Needs Assessment is the outcome of the reconciliation and uniform application/attribution of modified Rio-markers² adopted in the country for both Biodiversity Expenditure Review (BER) and the Financial Needs Assessment (FNA) across national and state levels so as to maintain uniformity and to arrive at the realistic biodiversity finance gap. The BER exercise at the national and sub-national levels had made use of Demand for Grants (DFG), the form in which estimates of expenditure from the consolidated fund, included in the annual financial statement and required to be voted upon in the Lok Sabha, are submitted in pursuance of Article 113 of the Constitution.

Biodiversity Financial Needs Assessment (FNA) adopted the Working Group/Steering Committee documents of the Planning Commission of the 12th Five Year Plan (FYP, 2012-17) as baseline, since the Planning Commission (now NITI Aayog) prepared Plan Schemes and Programmes till the 12th FYP period and projected budgetary requirements for various Ministries and Departments as part of Five Year Plan Process in India. These plan documents deal in a comprehensive manner, assumptions, objectives and aggregate calculations of plan schemes and programmes and these are readily deducible. During the 12th FYP, a total of 178 schemes and programmes of 24 Ministries and 2 Departments having relevance for biodiversity were enumerated from 64 such working group documents out of the total 146 studied.

Plan process in India invariably followed the incremental budgeting model, wherein a budget for plan scheme/programmes is prepared using a previous period's budget or actual performance as a basis with incremental amounts being added for the new budget period. The allocation of resources is based upon allocations from the previous period to achieve additional results of an existing scheme/programme or the results of new strategy. Under the BIOFIN, this process is termed as 'business as usual finance scenario'. This is different from the 'biodiversity investment scenario' that the BIOFIN advocates incorporating low, medium

¹For the early full report please refer: Soundrapandi, J. (2017). Biodiversity Financial Needs Assessment for the Implementation of India's National Biodiversity Action Plan. National Biodiversity Authority, Chennai. India. December, 2017.

² Biodiversity-related expenditure is tracked using the biodiversity "Rio marker". It identifies activities and expenditure targeting biodiversity as a principal objective, a significant objective, or not at all and allows for an approximate quantification of biodiversity expenditures and flows. Under BIOFIN Initiative in India, these Rio markers were extensively modified and applied for BER and FNA. Please see Table 2.

and high-investment scenarios, that articulate the outcomes of these scenarios in terms of national development goals.

In due course of BIOFIN implementation in India, particularly in projecting financial needs for the implementation of the National Biodiversity Action Plan (NBAP, 2008) and the 12 National Biodiversity Targets (Addendum 2014 to NBAP 2008), there was a clear felt need to introduce quantitative targets and baselines in respect of specific biodiversity actions, so that the financial needs assessments under the BIOFIN could be on the sound footing. These quantitative biodiversity targets were developed and refined by Dr. V.Rajagopalan, Former Secretary, Ministry of Environment, Forest and Climate Change, Government of India in consultation with Dr.David Meyers, Senior Technical Adviser, the Global BIOFIN team.

This revised report includes 'Needs Assessment based on Quantitative Targets' in areas such as afforestation, river rejuvenation, restoration of wetlands, sanitation and relocation of people from core and critical tiger habitats by incorporating baselines and targets contained in biodiversity relevant national policies/national missions/national action plans/national commitments such as India's Nationally Determined Contribution under UNFCCC, etc., as these policies have been approved at the highest levels in government and therefore a holistic approach by way of considering the NBAP along with these policies, is necessary to arrive at specific actions to close the gap between present status (baseline) and the target/goal. Financial projections for the quantitative targets were made by using the government approved costs and cost norms.

Accordingly, this revised report includes two financial projections; one is the budgetary projection of financial needs based on the 12 FYP which is the 'business as usual finance scenario' and the other is the 'financial needs assessment based on quantitative targets' to comprehensively achieve the National Biodiversity Action Plan and the 12 National Biodiversity Targets.

1.1. Conservation Imperatives for India - a Mega Diversity Country

India is a one of the 17 mega-diversity³ countries of the world. It is ranked 8th in terms of species richness and as such forms part of a select group of nations that possess the greatest number and diversity of animals and plants. In only 2.4% of the world's land area, India harbours 7-8% of all recorded species, including over 48,000 species of plants and over 1,00,000 species of animals. Living in harmony in the same land area is the 17% of human and 18% of cattle populations. India is also home to 4 of the 35 globally identified biodiversity hotspots i.e., Himalaya, Indo-Burma, Western Ghats and Sri Lanka, and Sundaland (Fig-1).

³The word 'mega-diversity' is used to refer to the world's top biodiversity-rich countries

For India, conservation of biodiversity is crucial not only because it provides several goods and services necessary for human survival, but also because it is directly linked with providing livelihoods and improving socio-economic conditions for millions of local people, thereby contributing to sustainable development and poverty alleviation. As a mega diversity country, India has special need for the preparation of a comprehensive biodiversity financing plan (BFP) and a long term resource mobilization strategy to ensure that natural assets are maintained so that they may continue to provide the resources and environmental services to the people who directly depend on it.

Fig-1. Global Biodiversity Hotspots



Source: <https://conservationbytes.com/2008/08/25/classics-biodiversity-hotspots>

1.2. Biodiversity Governance and Financing in India

Protection of the environment is ingrained in Indian ethos and enshrined in the Constitution of India under Article 48-A and under Article 51-A(g) and to meet the requirement of the Fundamental Rights (under Article 21-‘Right to life’) and the concept of “Public Trust Doctrine” in which certain common properties such as rivers, seashores, forests, and air are held by the government in trusteeship for the free and unimpeded use by the general public.

Biodiversity management in India and the associated financing is truly an inter-sectoral subject with sectoral initiatives on biodiversity conservation being undertaken by several Ministries and Departments of Government of India (GoI) through the budget support of Central and State governments supplemented by civil society, official development assistance (ODA) and others. The magnitude of biodiversity financing challenge in India far exceeds the capacity of any one Ministry/Department and demands a strong a partnership with relevant stakeholders.

Financial resource flows to the biodiversity sector include core funding administered through Ministry of Environment, Forest and Climate Change (MoEFCC) and the non-core and peripheral funding that are allocated by as many as 23 other scientific and development

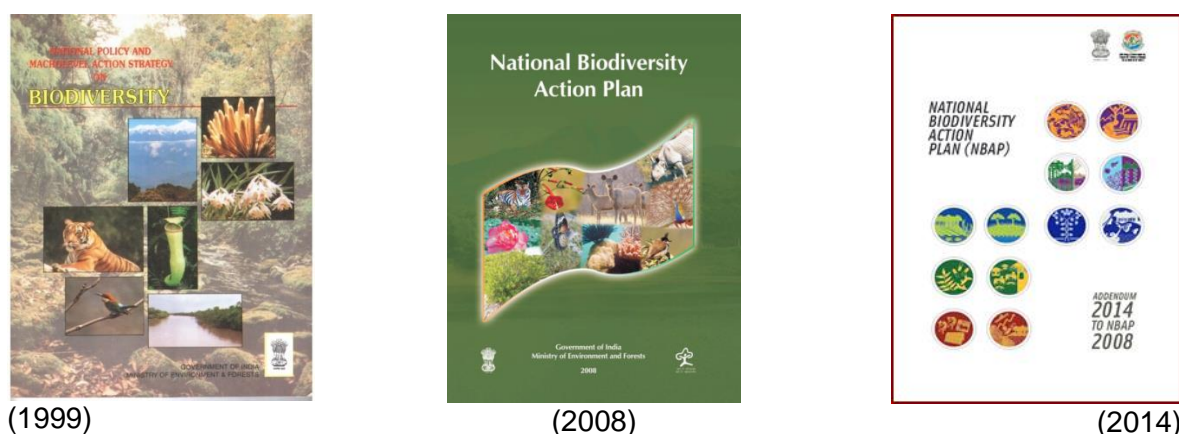
Ministries/Departments⁴of the Gol towards schemes and programmes that have a bearing on biodiversity conservation; as well as the funding by the State Governments on biodiversity and environment. The special responsibility held by MoEFCC as a nodal ministry for the environment/biodiversity is mainly operating at the policy development level as is the case with the preparation and implementation of India's National Biodiversity Action Plan.

1.3. India's National Biodiversity Action Plan (NBAP) and the Financing Needs for its implementation

National Biodiversity Strategies and Action Plans, more commonly referred to as NBSAPs, are the main vehicles of national implementation of the Convention on Biological Diversity (CBD). Article 6 (a) and 6 (b) of the CBD, enjoins upon the Parties to prepare NBSAP and ensure its implementation through mainstreaming of the strategy into relevant sectoral or cross-sectoral plans and programmes respectively. India's Biological Diversity Act, 2002 under Sections 36 (1) and (2) reflects the spirit of the said CBD Articles and provide the legal basis for the preparation of the NBSAPs as well as for the mainstreaming of biodiversity concerns into sectoral and cross-sectoral plan, programmes and policies.

India developed a 'National Policy and Macrolevel Action Strategy on Biodiversity' in the year 1999. Subsequent to the adoption of the National Environment Policy (NEP) in 2006, a National Biodiversity Action Plan (NBAP) was prepared through a comprehensive inter-ministerial process in 2008. The NBAP 2008 was updated in 2014 to prepare an Addendum, 2014 to NBAP 2008 by incorporating the 12 National Biodiversity Targets (NBTs), developed in line with the 20 Aichi Global Biodiversity Targets of the Strategic Plan (SP) for Biodiversity 2011-2020.

Fig-2. National Biodiversity Strategy and Action Plan - India's Journey



The principle part of India's NBAP 2008 consists of 175 Action Points spread across 11 thematic areas (Tab.1). The action points under India's NBAP 2008 bear close harmonization with the 12 NBTs developed as part of Addendum 2014 to NBAP 2008, which have been further cross linked to the 175 action points from the NBAP 2008, which in

⁴ India's National Biodiversity Action Plan; Addendum 2014 to NBAP 2008. p56

principle, allows monitoring and reporting of both the NBT at the national level and the contribution to the Aichi targets at the global level.

The adoption of India's NBAP (NBAP, 2008 & Addendum 2014 to NBAP, 2008) have not lead to allocation of funds for its implementation as the NBAP is essentially a strategic policy document. Rather, it was envisaged to implement the objectives of NBAP through schemes and programmes of relevant ministries; with the NBAP providing the sectoral ministries with a flexibility to integrate biodiversity concerns in their respective schemes. Hence, a reasonable estimate of financial needs for the effective implementation of NBAP proved to be a methodological challenge.

Tab-1. Action Points of India's National Biodiversity Action Plan, 2008

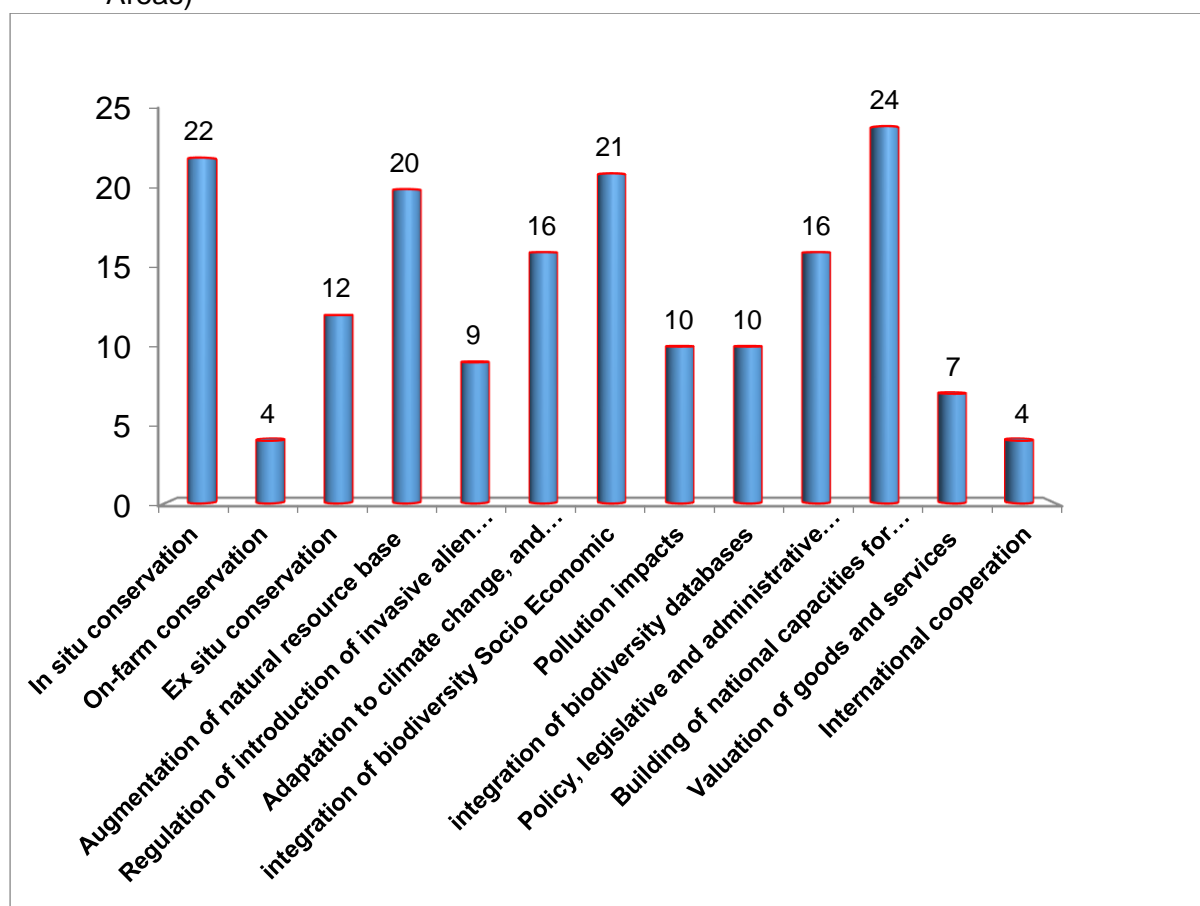
No. of Thematic Area	NBAP Thematic Area	No. of Action Points ⁵	% of NBAP Actions
1a.	Strengthening and Integration of <i>in-situ</i> conservation	22	12.5%
1b.	Strengthening and Integration of on-farm conservation	4	2.2%
1a.	Strengthening and Integration of <i>ex-situ</i> conservation	12	6.8%
2.	Augmentation of natural resource base and its sustainable utilization: Ensuring inter- and intra-generational equity	20	11.4%
3.	Regulation of introduction of invasive alien species and their management	9	5.1%
4.	Assessment of vulnerability and adaptation to climate change, and desertification	16	9.1%
5.	Integration of biodiversity concerns in economic and social development	21	12.0%
6.	Pollution impacts	10	5.7%
7.	Development and integration of biodiversity databases	10	5.7%
8.	Strengthening implementation of policy, legislative and administrative measures for biodiversity conservation and management	16	9.1%
9.	Building of national capacities for biodiversity conservation and appropriate use of new technologies	24	13.7%
10.	Valuation of goods and services provided by biodiversity, and use of economic instruments in decision making processes	7	4.0%
11.	International cooperation	4	2.2%
Total Actionable Points		175	100 %

India's NBAP makes it clear that the 175 action points of the NBAP spread across 11 thematic areas areas to be the basis for seeking funds from domestic and external sources and in order to sharpen the inter-linkages between the Aichi Biodiversity Targets and India's NBAP, the plan schemes and programmes of the MOEFCC and those of other Ministries/Departments of the GOI have to be further aligned for their outcomes in terms of indicators provided by the Aichi Biodiversity Targets.

⁵For the purpose of financial needs assessment, NBAP Thematic Area 1 consisting of 38 actionable points were segregated into three viz., *in situ* (22), on farm (4) and *ex situ* conservation (12)

The implementation of India's NBAP and the associated NBTs needs an explicit alignment with plan schemes and programmes of the government resulting in the preparation of a comprehensive biodiversity finance plan to identify periodic and continuous funding needs for its effective implementation. This is the context for biodiversity financial needs assessment under the BIOFIN Initiative that endeavours to estimate the finances required to implement the NBAP and to achieve the NBTs.

Fig-3. Distribution of Actionable Points of NBAP, 2008 (175 Action Points; 11/13 Thematic Areas)



1.4. Biodiversity Finance Initiative (BIOFIN)

Biodiversity Finance Initiative (BIOFIN), currently being implemented in 31 countries, supports countries with a methodology that provides innovative steps to measure current biodiversity expenditures, assess financial needs, identify the most suitable finance solutions and provide guidance on how to implement these solutions to achieve their national biodiversity target through the implementation of National Biodiversity Action Plan (NBAP).

The BIOFIN methodology takes shape through three assessments (PIR, BER & FNA) that culminate in a Biodiversity Finance Plan (BFP) as listed below;

- I. **Biodiversity Finance Programme and Institutional Review (PIR)** looks into the programme and institutional context for biodiversity finance in the country and establishes which are the key stakeholders to involve.

- II. **Biodiversity Expenditure Review (BER)** is an analysis of public and private expenditures in the country that benefit biodiversity. The assessment establishes past, present and projected expenditures on biodiversity.
- III. **Biodiversity Financial Needs Assessment (FNA)** estimates the finance required to deliver national biodiversity targets and plans, usually described in the NBSAPs.
- IV. **Biodiversity Finance Plan (BFP)** identify and prioritizes a mix of suitable biodiversity finance solutions to reduce the biodiversity finance gap.

2. BIODIVERSITY FINANCIAL NEEDS ASSESSMENT UNDER THE BIOFIN INITIATIVE

Biodiversity Financial Needs Assessment (FNA) is the third step in the BIOFIN process {preceded by early BIOFIN steps; Programme and Institutional Review (PIR) and the Biodiversity Expenditure Review (BER)} that aims to make a comprehensive estimate of the financial resources needed to achieve national biodiversity action plans and the associated biodiversity targets.

Financing for biodiversity conservation in India is a complex policy issue with implications on Country level Planning and Budgeting process. Until the 12th Five Year Plan (2012-17), the Planning Commission of India (1951-2014) and the NITI Aayog (2015-2017) were responsible for assessing the financial resources and decisions on the design and size of sectoral schemes and programmes at the country level and allocated funding for their implementation. During the Plan process, based on the overall objectives set for the Five Year Plan (FYP), the Planning Commission set up various working groups and steering committees by taking into consideration various inter-sectoral and sector specific issues. The working groups projected realistic and realizable financial and physical targets for plan schemes and programmes under its purview

2.1. Approaches to Biodiversity Financial Need Assessment and Methodology

Biodiversity Financial Needs Assessment in India has taken the approach of looking at trends in National Planning and Budgetary Process to derive estimates of financial needs/ requirements to achieve activities listed in India's NBAP. National Planning process in India is organized through formulation of Five-Year Plans (FYPs) by the Planning Commission that was set up in March, 1950. The principal task of the Planning Commission is to formulate the Five Year and Annual Plans for the most effective and balanced utilization of the country's material, capital and human resources, appraise from time to time the progress in their implementation and recommend adjustments of policy and measures that are considered to be necessary in the light of such appraisal. The 12th FYP ran from 2012-2017. Beginning 1st January, 2015, the Planning Commission is now replaced by NITI Aayog (National Institution for Transforming India). Since 1st April, 2017, a three-year action plan (2017-2020), prepared by the think-tank NITI Aayog is currently being implemented in the country⁶.

The Planning Commission was set up by a resolution of the Government of India in March 1950. The Planning Commission decides the design and size of all sectoral schemes (central sector scheme and centrally sponsored scheme) and allocates finances for their implementation. A key aspect of Planning in India, as practiced by the Planning Commission is its rigorous academic probity and transparency. Allocation of public finances between the Centre and States and between different ministries is done through a detailed, iterative and inclusive process in which the Planning Commission (now NITI Aayog) plays the pivotal role.

⁶ http://niti.gov.in/writereaddata/files/coop/India_ActionAgenda.pdf

The resolution creating the Planning Commission of India⁷ enjoined to the following functions:

- i. Make an assessment of the material capital and human resources of the country and to suggest ways of augmenting them;
- ii. Formulate a plan for the most effective and balanced utilization of the country's resources;
- iii. Determine priorities of the plan and to allocate resources to different sectors of the plan;
- iv. Remove factors retarding economic growth in the current socio-political scenario of the country;
- v. Build up machinery for the successful implementation of the plan ;
- vi. Appraise progress achieved in the execution of plan from time to time and to bring about necessary adjustment in policy and thrusts of the plan;
- vii. Make necessary changes in both policy and implementation of the plan in accordance with the advice or recommendation received from the central or the State Governments.

The Planning Commission is responsible for assessing the financial resources and decides on the design and size of sectoral schemes and allocates funding for their implementation. Within the overall objectives set for the Five Year Plan (FYP), the Planning Commission sets up various working groups by taking into consideration various inter-sectoral and sector specific issues. The Working Groups project realistic and realizable financial and physical targets giving due emphasis to socio-economic and developmental efforts. The Planning Commission then finalizes the Plan allocation for different Ministries in which the budget support component is clearly specified. Budget estimates thus prepared by different Ministries are discussed with Ministry of Finance (MoF). The MoF, in turn depending upon availability of financial resources fixes a ceiling of funds available and the budget estimates are revised. Through a process of iterations between the revenue receipts and expenditure, the Planning Commission budget for different ministries is fixed. Economic, social, regional, sectoral and political trade-offs are the considerations involved in allocation of financial resources.

The formulation of each FYP is preceded by considerable amount of technical work involving stakeholder participation including consultations with Central Ministries and State Governments, sector experts, economists, sociologists, political scientists and civil society organizations and prolonged consultations to arrive at consensus in order to ensure effective and balanced utilization of the material, capital, and human resources. Assumptions and aggregate calculations of these Plan/Scheme/Service/Project are explicitly stated and readily deducible through the FYP Plan documents of various Ministries and Departments of Government of India.

⁷<http://planningcommission.gov.in/aboutus/history/PCresolution1950.pdf>

2.2. Process of Biodiversity Financial Needs Assessment:

It is recognized that the detailed, budget based financial outlay of schemes and programmes that India undertook as part of its Planning process⁸ cannot be replicated under the National BIOFIN Initiative. Thus, the imperative is to look into BIOFIN's unique contribution to the National Planning and Budgeting process and how it can complement Government's financing for biodiversity.

The process of biodiversity Financial Needs Assessment began with the compilation of all the working group/steering committee documents of the 12th Five Year Plan (FYP; 2012-17). These Working Group documents of 12 FYP were adopted as baselines as these plan documents deal in a comprehensive manner, assumption, objectives and aggregate calculations of plan schemes and programmes and are readily deducible for their mission objectives and projected financial requirements for the given Plan period.

The rationale for analysing the Plan documents is underlined by the following assumptions;

- i. First, Government of India is the dominant stakeholder with more than 50 percent of public expenditure in India being provided through outlays in Union Budget.
- ii. Second, the Constitutional obligation with regard to environmental protection has been laid down under Article 48-A and under Article 51-A(g) of our Constitution and to meet the requirement of the Fundamental Rights (Under Article 21) of 'Right to life' and the concept of "Public Trust Doctrine" in which certain common properties such as rivers, seashores, forests, and air are held by the government in trusteeship for the free and unimpeded use of the general public.
- iii. Thirdly, the study of the Plan document is specifically important as it comprehensively shows as a signpost the adaptation policy priorities that the Government.

2.3. Enumeration of steps followed in the FNA process in India

The process of Biodiversity Financial Needs Assessment begins with the compilation of all the Working group/Steering Committee documents of the 12th Five Year Plan. In order to identify the biodiversity relevant schemes, all the sectoral working group (WG) documents of the 12FYP numbering about 146 were studied. It was identified that as many as 64 WG proposed Plan Schemes and Programmes that had relevance for biodiversity. The enumeration process is schematically represented in Fig.4.

Step 1: Identification of biodiversity relevant schemes proposed during the 12th FYP along with enumeration of financial outlay and objectives

- A total of 200 schemes/programmes of 25 Ministries/2 Departments having relevance for biodiversity were enumerated from the Planning Commission's Working group/Steering Committee documents during the 12th FYP (2012-2017). Scheme-wise objectives along with budget outlays were compiled.

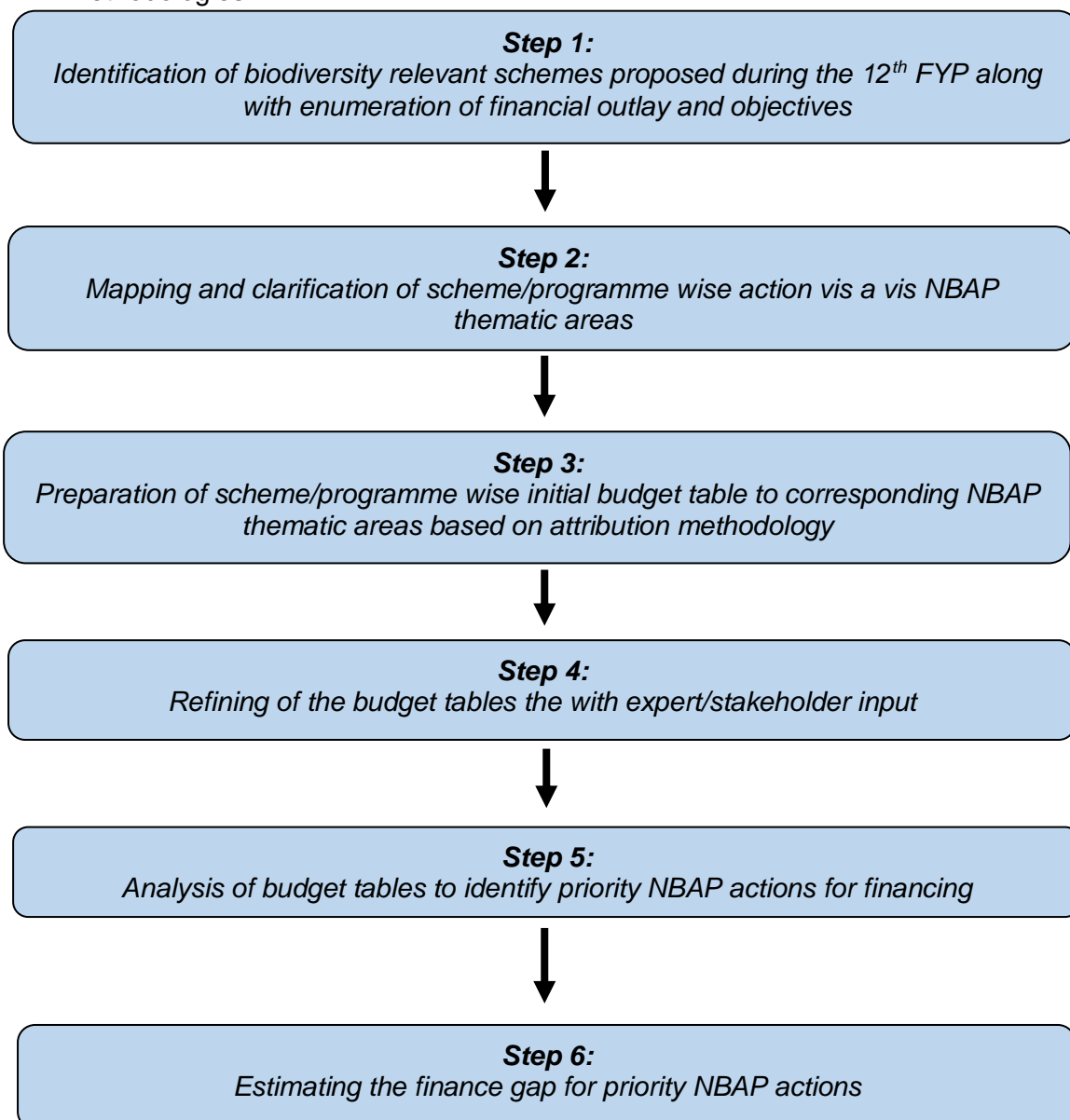
Step 2. Mapping and clarification of scheme/programme wise action vis a vis NBAP thematic areas

- Based on the objective reading of each scheme and programme, NBAP thematic area wise weightage was assigned, using Rio Marker methodology, as having direct (95%), Indirect high (62.5%), indirect medium (37.5%) and indirect low (2.5%). 11/13 thematic actions of NBAP and the corresponding 175 actionable points were broadly matched with the objective of each scheme/programme.

⁸ From 1951 to 2017, the Indian economy was premised on the concept of planning. This was carried through the Five-Year Plans, developed, executed, and monitored by the Planning Commission (1951 - 2014) and the NITI Aayog (2015 - 2017).

- Step 3. Preparation of scheme/programme wise initial budget table to corresponding NBAP thematic areas based on attribution methodology**
- Depending on the ability of the scheme/programme to contribute to thematic actions of NBAP and to the corresponding action points, financial estimates were defrayed from the scheme outlay using pivot table.
- Step 4. Refining of the budget tables the with expert/stakeholder input**
- The budget estimates were further refined using expert/stakeholder inputs. NBAP thematic area/actionable point wise financial needs assessments were prepared. Efforts were made to compile Ministry/Department wise financial needs assessment for the 12FYP and annual attributable financial needs were carried out.
- Step 5. Analysis of budget tables to identify priority NBAP actions for Financing**
- Analysis of financial need assessment of NBAP thematic areas to identify those actions that were inadequately funded as well as those actionable points/thematic areas that are never proposed for funding support were carried out.
- Step 6. Estimating the finance gap for priority NBAP actions**
- The financial gap is given as the difference between the appropriations required for actions included in the NBAP and the funds allocated in the fiscal plan for given year. Using biodiversity expenditure review (BER) as a baseline, NBAP actionable points/thematic area wise estimation finance gap may be arrived at, this in turn may be used as a basis for developing a viable biodiversity finance plan as well as a resource mobilization strategy.

Fig.4. Biodiversity Financial Needs Assessment: Process followed in India and Flow of Methodologies



The methodology of determining the FNA attributable to biodiversity conservation in India is guided by existing and widely accepted 'Rio marker' methodologies. The 'Rio Markers' classification is an Internationally accepted methodology of attribution by CBD (see Table.2.)

Tab. 2. Modified RIO Markers attribution adapted in Indian context

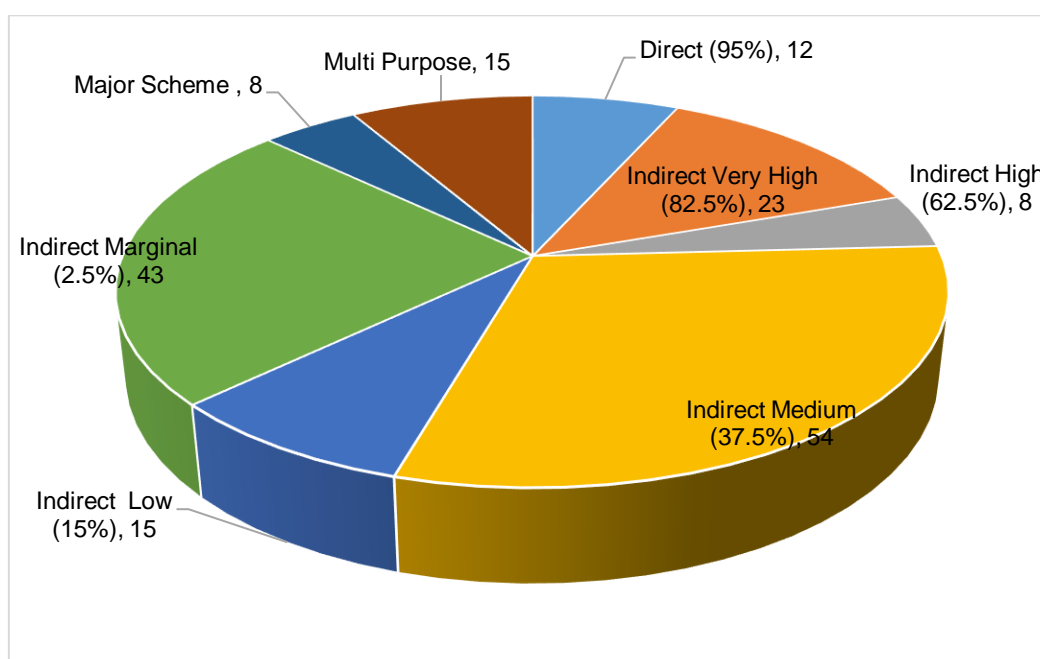
Names rename	Direct	Indirect Very High	Indirect High	Indirect Medium	Indirect Low	Indirect Marginal
Range	100-90%	90-75%	75-50%	50-25%	25-5%	5-0%
Target	95%	82.5%	62.5	37.5	15%	2.5%
Definitions	Principal Intent of Organisation / Activity is to accomplish one of three CBD objectives	Main intent to accomplish at least one of the CBD objectives coupled to a greater degree with other related / supportive intents	Main intent to accomplish at least one of the CBD objectives coupled to a lesser degree with other related / supportive intents	One at least one of the CBD Objectives or NBTs coupled with other - non biodiversity related intents / actions in balanced proportion	Intent primarily for non-biodiversity related activities but have a stated intent for positive BD impacts	Small BD impacts expected from much larger non-BD programs with at least safeguards in place.
Examples	Core MOEFCC schemes e.g. Tiger conservation, afforestation, protection of PA and sanctuaries	Promotion of organic farming, river conservation	Groundwater management and regulation	Integrated watershed management, Climate change adaptation, general awareness and training, activities	Public welfare initiative such as development of WRIS of MoWR, RD & GR.	Renewable energy, Climate change mitigation
RIO Markers	RIO Marker 2	RIO Marker 1				RIO Marker 0

Scheme/Programme wise financial attribution for the all the 200 schemes enumerated during the 12th FYP Plan was arrived at based on the ability of each of these schemes/programmes to contribute to the implementation of thematic areas of NBAP as tabulated above. This budgetary study and attribution methodology closely follows the FNA steps described in the BIOFIN Workbook (2016) and extrapolates the readily available budgetary projections to arrive at both ministry/thematic area wise financial needs assessment related to implementation of NBAP by keeping the plan schemes and programmes as a basis. The framework adopted for FNA not only allow for the gross initial estimation of financial needs but also allows for prioritization of programmes/schemes for NBAP implementation.

Tab.3. Classification of schemes/programmes under the modified Rio-marker categories adopted to the Indian context under the BIOFIN Initiative

S.No.	Rio Marker classification of BD relevance	Range	No. of Schemes	%
1	Direct	100-90(95%)	12	6.74
2	Indirect Very High	90-75(82.5%)	23	12.92
3	Indirect High	75-50(62.5%)	8	4.49
4	Indirect Medium	50-25(37.5%)	54	30.34
5	Indirect Low	25-5(15%)	15	8.43
6	Indirect Marginal	5-0(2.5%)	43	24.16
7	Major Scheme		8	4.49
8	Multi-purpose scheme		15	8.43
	Total		178	100

Fig.5. Representation of schemes/programmes under the modified Rio-marker categories



The under lying assumption of FNA process and rationale for adaptation of such as process in India are as follows;

- I. Quantifying financial needs for a wide range of activities as outlined in the NBAP is complex, since estimates are dependent on a host of assumptions
- II. FNA is foundational exercise in the financial need assessment and estimates provided are conservative and minimalist. Nevertheless, these initial attempts are expected to shed light on the magnitude of the financing requirements
- III. India's approach to FNA is to look at trends in projected budgets to derive estimates of finance requirements to achieve activities listed in India's NBAP.

3. ASSESSMENT OF FINANCIAL NEEDS FOR THE IMPLEMENTATION OF INDIA'S NBAP AT THE CENTRAL LEVEL

3.1. Ministry-wise Schemes/Programmes identified as Biodiversity Relevant during the 12 FYP

A total of 178 schemes and programmes of 24 Ministries and 2 Departments having relevance for biodiversity were enumerated from the Working Group/Steering Committee documents of the 12th FYP (2012-17). Ministry of Agriculture (now renamed as Ministry of Agriculture and Farmers Welfare) has proposed nearly 35% (62 schemes) of the BD relevant schemes followed by Ministry of Environment and Forest and Climate Change (23 schemes) and Ministry of Science and Technology (15 schemes) respectively.

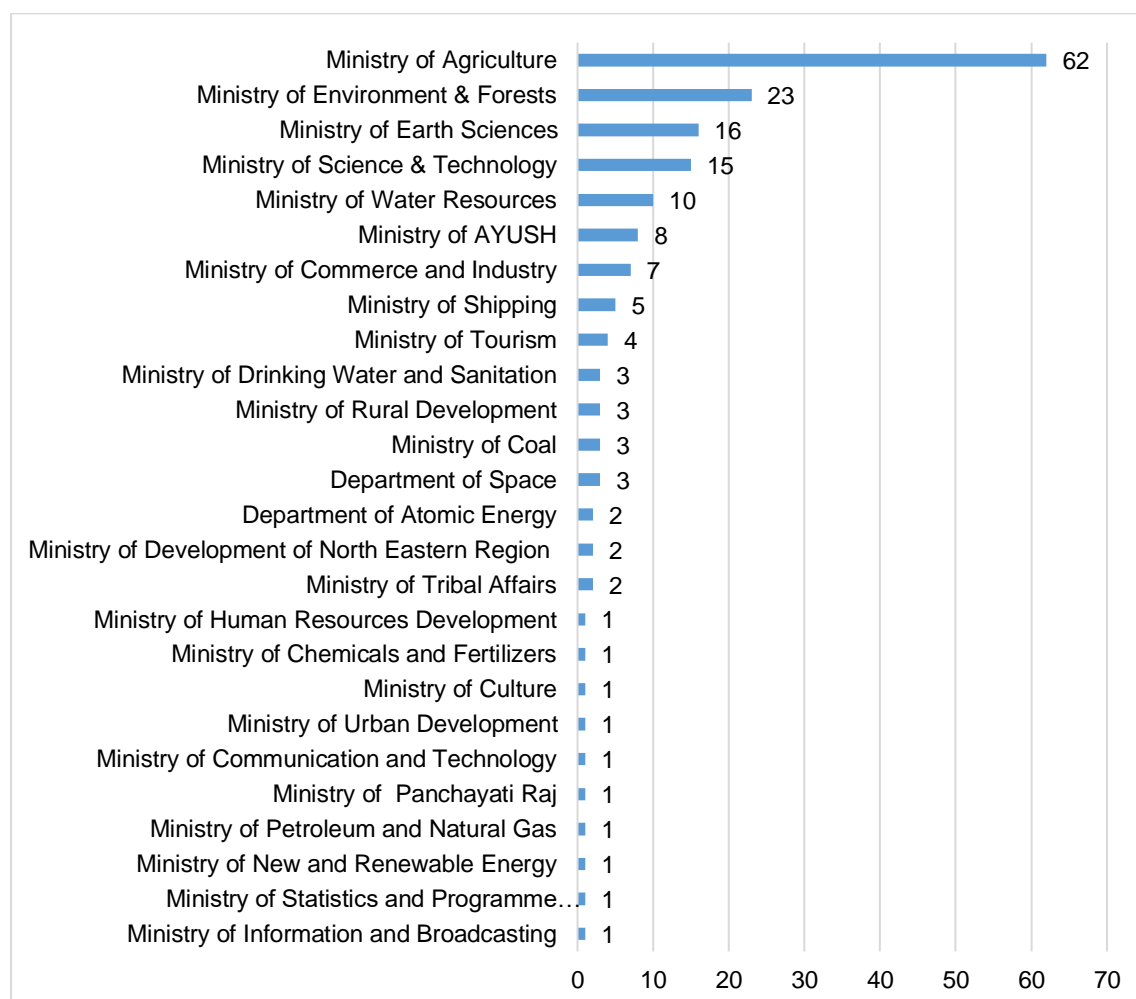
Tab.4. Ministries/Departments identified to have proposed schemes relevant for Biodiversity Conservation in the 12th Five Year Plan (2012-2017)

Sl.No.	Ministries/Departments of Government of India & Planning Commission	No. of biodiversity relevant schemes proposed by WG/SC in the 12 th FYP Plan
1	Ministry of Agriculture	62
2	Ministry of Environment & Forests	23
3	Ministry of Earth Sciences	16
4	Ministry of Science & Technology	15
5	Ministry of Water Resources	10
6	Ministry of AYUSH	8
7	Ministry of Commerce and Industry	7
8	Ministry of Shipping	5
9	Ministry of Tourism	4
10	Department of Space	3
11	Ministry of Coal	3
12	Ministry of Rural Development	3
13	Ministry of Drinking Water and Sanitation	3
14	Ministry of Tribal Affairs	2
15	Ministry of Development of North Eastern Region	2
16	Department of Atomic Energy	2
17	Ministry of Information and Broadcasting	1
18	Ministry of Statistics and Programme implementation	1
19	Ministry of New and Renewable Energy	1
20	Ministry of Petroleum and Natural Gas	1
21	Ministry of Panchayati Raj	1
22	Ministry of Communication and Technology	1
23	Ministry of Urban Development	1
24	Ministry of Culture	1
25	Ministry of Chemicals and Fertilizers	1
26	Ministry of Human Resources Development	1
	Total	178

The study in the process of scheme identification has categorically selected schemes, which are biodiversity relevant based on the careful reading of the scheme/programme wise objective of the plan document. Ministry of AYUSH and Ministry of Development of North Eastern Region are a few of the new Ministries that came into existence after the formulation of the 12 FYP. The list of ministries/departments identified to have proposed biodiversity relevant schemes during the 12th FYP are as tabulated above (Tab.)

During the 12thFYP, a total of 178 schemes and programmes of 24 Ministries and 2 Departments having relevance for biodiversity were enumerated from 64 working groups out of the total 146 working groups of the 12FYP (Fig-3). Scheme/programme wise objectives of 178 schemes (proposed under 12th FYP) having relevance for biodiversity were analysed by assigning weightages, as per the RIO marker methodology adopted for Indian contexts to 11/13 thematic areas of NBAP and 175 actionable points {as direct-(95%), indirect very high-(82.5%), indirect high-(62.5%), indirect medium-(37.5%), indirect low-(15%) and indirect marginal- (2.5%) based on scheme/programme objectives}. A scheme/programme may feed into various thematic areas/actionable points of NBAP, and accordingly weightages were assigned as per the objectives of the plan schemes and programmes towards biodiversity conservation and corresponding Ministry/NBAP thematic area-wise attributable finances from the overall scheme outlay of 12 FYP (2012-2017) were calculated.

Fig.6. Ministry/Department wise biodiversity relevant Schemes/Programmes 12 FYP



3.2. Ministry- wise Biodiversity Financial Need Assessment

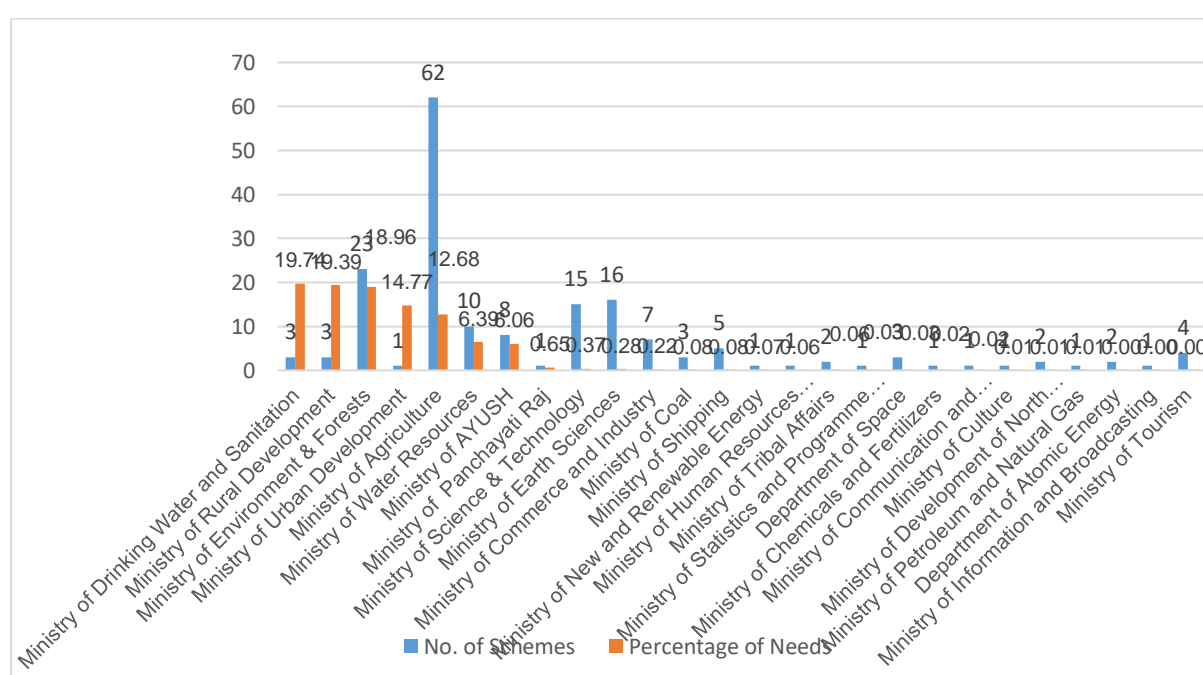
This section presents an estimate of attributable biodiversity financial as per the schemes and programmes proposed during the 12th FYP from the overall enumeration of the schemes and programmes along with the budgetary projections(See Annexure).The FNA has used 12 FYP budgetary projections as baseline. Plan documents prepared by the Planning Commission readily incorporate assumptions, objectives and aggregate financial calculations of schemes and programme proposed for that period. The biodiversity financial estimates presented here are derived from the scheme/programme-wise budgetary/financial requirements projected in the 12 FYP Plan documents. These estimates use the implementation of the NBAP as underlying assumption and as such can be translated in to resource requirements.

Tab.5. Ministry-wise Annual Attributable Financial Needs (Rs. In Crores)

S.No.	Ministry	No. of Schemes	Annual Attributable needs (Rs. In crores)	% of Needs Assessment
1	Ministry of Drinking Water and Sanitation	3	14084.14	19.74
2	Ministry of Rural Development	3	13834.00	19.39
3	Ministry of Environment & Forests	23	13528.68	18.96
4	Ministry of Urban Development	1	10537.77	14.77
5	Ministry of Agriculture	62	9046.02	12.68
6	Ministry of Water Resources	10	4561.19	6.39
7	Ministry of AYUSH	8	4323.17	6.06
8	Ministry of Panchayati Raj	1	462.50	0.65
9	Ministry of Science & Technology	15	264.79	0.37
10	Ministry of Earth Sciences	16	200.48	0.28
11	Ministry of Commerce and Industry	7	159.21	0.22
12	Ministry of Coal	3	59.02	0.08
13	Ministry of Shipping	5	54.95	0.08
14	Ministry of New and Renewable Energy	1	52.50	0.07
15	Ministry of Human Resources Development	1	45.00	0.06
16	Ministry of Tribal Affairs	2	40.63	0.06
17	Ministry of Statistics and Programme implementation	1	20.54	0.03
18	Department of Space	3	19.44	0.03
19	Ministry of Chemicals and Fertilizers	1	16.50	0.02
20	Ministry of Communication and Technology	1	14.98	0.02
21	Ministry of Culture	1	7.78	0.01
22	Ministry of Development of North Eastern Region	2	5.64	0.01
23	Ministry of Petroleum and Natural Gas	1	5.12	0.01
24	Department of Atomic Energy	2	2.93	0.00
25	Ministry of Information and Broadcasting	1	0.50	0.00
26	Ministry of Tourism	4	0.35	0.00
	Grand Total	178	71347.80	100.00

The biodiversity financial needs assessment process is underpinned by the primary assumption that sectoral budgetary projections, having relevance for biodiversity, readily incorporate the NBAP aspirations. The applicability of this assumption however is only limited by the selection of schemes and programmes actually implemented by Union Government along with the associated funding and do not in any way reflect on the requirement of additional resources. It is imperative that the overall budgetary projection of a particular scheme/programme cannot be attributed wholly for biodiversity; rather its objectives have to be aligned to the thematic areas of NBAP and assigned weightages accordingly. This is especially applicable to those schemes and programmes of the Ministries and Departments other than the MOEFCC.

Fig-7. Ministry wise % share of attributed biodiversity finances needed for NBAP implementation



Under the BIOFIN, it is clearly understood that the notion of finance needs is broader than the investment requirement, as the FNA encompasses various dimensions of finances required and the associated instruments and the conduits. This back-of-the-envelope approach (complex needs assessment process approximated within an order of magnitude using simple calculations) is a simple and transparent way to select funding needs as well as to prioritize activities. This preliminary assessment of the budget estimates/finances needed to implement the NBAP are essentially a back of the envelope calculations that provides initial estimation of finances needed and may serve as a basis for securing budgetary allocations for NBAP action.

3.3. Key Learning Financial Needs Assessment Process

A key learning emerged during financial needs assessment process is that, it brought to fore the acute lack of initiatives, in the form of scheme and programmes, as well as the associated financial projections in several of the thematic areas of NBAP (Tab-3). These include; (i). Strengthening and Integration of *in-situ* conservation; (ii). Regulation of introduction of invasive alien species and their management; (iii). Development and integration of biodiversity databases; (iv). Valuation of goods and services provided by biodiversity, and use of economic instruments in decision making processes and (v). International cooperation (Fig-4).

This budgetary analysis has provided an approximation of the direction of the NBAP implementation process in India, in addition to segregating schemes and programmes that directly influence the biodiversity status and trends in the country without attempting to comment on additional financial needs for the selected sectors to deal with the effective implementation of NBAP. The study is also aware of several midcourse interventions made during the intervening plan period, which were not considered in the FNA process to maintain consistency. Another limitation of the study is that the data reported and analysed are essentially the sectoral wish list of the Sectoral ministries and departments.

An important motivation for this exercise is the lack of baseline information about the funding needs for biodiversity sector as whole and this lack of information is an obstacle for mobilizing sustainable long term funding. Therefore, this study aimed at looking through the trends in the planning and budgetary process with a view to quantify the biodiversity financial needs as projected. It is envisaged that this study would serve as a signpost and would lead to more detailed and complex analysis of actual cost of implementing the NBAP.

3.4. Limitations of the Study

The selection of biodiversity relevant schemes/programmes relies mainly on the stated objectives and guidelines of the schemes and programmes proposed during the 12FYP. The study is also aware of several midcourse interventions made during the intervening plan period, which were considered in the FNA process to maintain consistency. Financial Needs Assessments are carried out on the budgetary projections of the schemes and programmes in order to quantify magnitude of the biodiversity financial the financial needs. Therefore, the study has not attempted to comment on additional financial needs for the selected sectors to deal with the effective implementation of NBAP. Another limitation of the study is that the data reported and analysed are essentially the sectoral wish list of the Sectoral ministries and departments.

The study captures only the projected budgetary requirements under the Plan Documents at the Central Government level while a large chunk of public expenditure is also incurred by the state government and the local bodies out of their own resources. However, since the Union Budget is the source of more than 50 percent of public spending in India, analysis of the Union Budget can serve as a signpost on the overall policy stance of the government on funding for biodiversity.

The rationale for analysing the Plan documents is underlined by the following assumptions; First, Government of India is the dominant stakeholder with more than 50percent of public expenditure in India being provided through outlays in Union Budget. Second, the Constitutional obligation with regard to environmental protection has been laid down under Article 48-A and under Article 51-A(g) of our Constitution and to meet the requirement of the Fundamental Rights (Under Article 21) of 'Right to life' and the concept of "Public Trust Doctrine" in which certain common properties such as rivers, seashores, forests, and air are held by the government in trusteeship for the free and unimpeded use of the general public. Thirdly, the study of the Plan document is specifically important as it comprehensively shows as a signpost the adaptation policy priorities that the Government.

An important motivation for this exercise is also the lack of baseline information about the funding needs for biodiversity sector as whole and this lack of information is an obstacle for mobilizing sustainable long term funding. Therefore this study aims at looking the trends in the planning and budgetary process with a view to quantify the financial needs. It is envisaged that this study would serve as a signpost and would lead to more detailed and complex analysis of actual cost of implementing the NBAP.

4. FINANCIAL NEEDS ASSESSMENT BASED ON QUANTITATIVE TARGETS⁹

Role of quantitative targets in finance solutions for Biodiversity Finance Plan

For purposes of Biodiversity Financing Plan (BFP), an overall resources gap (essentially FNA – BER) is not of much help in identifying priorities for planning activities. Gap in resources would need to be assessed against specific activities that need to be taken up in respect of different thematic areas and NBTs contained in NBAP. The action points of NBAP 2008 as well as NBTs introduced in 2014, however, do not contain quantitative targets. Hence, there is a need to consider NBAP along with targets contained in biodiversity relevant national policies/national missions/national action plans/national commitments such as India's Nationally Determined Contribution under UNFCCC, etc. It may be noted that, these policies, etc have also been approved at the highest levels in government and therefore a holistic approach by way of considering the NBAP along with these policies, etc is necessary to arrive at specific actions to close the gap between present status (baseline) and the target/goal.

In fact, specific action-wise gap in resources would help identify the finance solutions including new and innovative solutions necessary in addition to the financing mechanisms presently in place. In turn, this would help in drafting BFP with specific action-wise timeframes, additional resources needed and the appropriate finance solutions to be put in place.

A case in point is that of river conservation. The national Environmental Policy, 2006 identifies degradation of water resources as a key environmental challenge. Water borne diseases attributable to poor bacterial quality of drinking water account for a large proportion of disease burden amongst children¹. Given that discharge of untreated/partially treated sewage is the major source of bacterial and organic pollution load discharged in to rivers, the government has identified river cleaning with focus on sewage collection and treatment as a priority area. The national action plans such as the Ganga Action Plan launched in 1986, National River Conservation Plan and the National Mission Clean Ganga launched in 2015 are in pursuance of this national commitment to clean up rivers.

It may be noted that ecosystem restoration in terms of river rejuvenation by arresting pollution discharge in to rivers is fully aligned with Aichi Biodiversity target 8 which deals with reduction in pollution load and target 15 which involves restoration of ecosystems. Also, the expected outcome in terms of reduction in water borne diseases burden amongst children is aligned with SDG 3, in particular, Sustainable Development Target 3.9 which seeks to reduce by 2030 illnesses and deaths on account of factors including water pollution.

1 <http://www.downtoearth.org.in/news/dirty-air-and-water-increase-cradle-deaths-in-india-57305>

Baselines and Targets available

4.1. River Rejuvenation and Conservation

As per assessment carried out by the Central Pollution Control Board, as of March, 2015, for Class I cities, sewage generated = 61,948 MLD. As against this, total treatment capacity available = 23,277 MLD leaving a gap of 38, 671 MLD. Considering Class II cities also, the

⁹ Adopted from the Primary Work done by Dr. V.Rajagopalan, Senior Technical Adviser, UNDP-BIOFIN India Project.

gap can be approximately taken as 40,000 MLD. Assuming a cost of INR 5 Crs. per MLD to collect and treat sewage (cost of sewerage plus cost of setting up sewage treatment plants), the amount to be invested works out to INR 200,000 Crs.

Ensuring 100% treatment of waste water is necessary given inadequate flow and poor assimilative capacity in a large number of river stretches, particularly, in the lean season, abstraction for drinking water purposes and extensive bathing during religious occasions. This would help rejuvenate and restore polluted rivers as ecological entities supporting aquatic biodiversity which requires a certain minimum level of dissolved oxygen not available at present in several polluted rivers due to high organic pollution load discharged by way of untreated/partially treated domestic wastewater. The importance of river rejuvenation in terms of human health has already been mentioned earlier.

Assuming that 100% domestic wastewater treatment would be achieved for the entire country in 30 years, proportionate targets, requirement of resources, availability of resources under government schemes (Central govt. share as well as the share of States in centrally sponsored schemes such as NRCP, NMCG and sewerage and sewage treatment components of JNNURM, AMRUT) will need to be taken in to account to arrive at funding gap over the next 5 years and 15years. Needs assessment is shown below.

Table 1 Needs assessment for rejuvenation of rivers

Capacity gap to ensure 100% treatment of sewage (in MLD)	Per year sewerage and treatment capacity to be created to close the gap in 30 years (in MLD)	Annual investment needed @ INR 5 Crs. per MLD	Investment needed during next 5 years	Investment needed during next 15 years	Investment needed to close the gap and ensure 100% treatment
40,000	1333.33	6667	33,333	100,000	200,000

Industrial pollution abatement is the responsibility of individual industrial units and tightening of regulatory regime and strict enforcement would take care of this except in the case of SMEs for which CETPs have already been installed at most of the locations with a cluster of polluting SMEs.

4.2. Forest and Tree Cover (FTC):

The India State of Forest Report (ISFR), 2017 brought out by Forest Survey Of India (FSI) reveals that forest and tree cover has gone up by 8021 sq.km. (6778 sq.km. of forest cover and 1243 sq.km. of tree cover) as compared to the 2015. Forest and tree cover consists of forest cover and trees outside forests (TOF). The break-up as per the 2017 report is as follows:

Table 2 Forest and Tree Cover as per ISFR, 2017

Total Forest cover ²		Tree cover (Trees outside forest) ³		Total forest and tree cover	
Area in sq.km	Percent of country's geographical area	Area in sq.km	Percent of country's geographical area	Area in sq.km	Percent of country's geographical area
7,08,273	21.54	93,815	2.85	8,02,088	24.39

² Includes all areas more than 1 ha in extent and having tree canopy density of 10% and above irrespective of land use and legal status.

³ Includes small patches of trees less than 1 ha in extent, such as trees in small scale plantations, compact blocks, woodlots or trees along linear features such as road, canals, bunds, etc and scattered trees not captured in forest cover mapping.

Break-up of total forest cover⁴ in terms of different density categories is as follows:

Table 3 Density-wise Break-up of forest cover

Very Dense Forest ⁵ (VDF)		Moderate Dense ⁶ Forest (MDF)		Open Forest ⁷ (OF)	
Area in sq.km.	Percent of geographical area	Area in sq.km.	Percent of geographical area	Area in sq.km.	Percent of geographical area
98,158	2.99	3,08,318	9.38	3,01,797	9.18

⁴ The total forest cover of 7,08,273 sq.km. amounting to 21.54% of the country's geographical area includes mangroves (4921 sq.km) but does not include area under scrubs⁸ of 45,979 sq.km. amounting to 1.4% of the geographical area.

⁵ Tree canopy density of 70% and above

⁶ Tree canopy density of at least 40% and below 70%

⁷ Tree canopy density of at least 10 and below 40%

⁸ Degraded forest land with canopy density less than 10%

Further, MoEF&CC has released a draft national forest policy 2018. In this, the goal of achieving a minimum one third of the total land area under forest and tree cover for country as a whole has been retained. This would involve afforestation/reforestation to cover the gap in terms of forest and tree cover in addition to reversing the degradation of forest by taking up rehabilitation. In fact, afforestation/reforestation to substantially increase the forest and tree cover as well as rehabilitation of degraded forests form part of the objectives of the policy. In addition, the draft policy also reiterates India's commitment relating to forestry by way of Intended Nationally determined Contribution (INDC) under UNFCCC.

<http://envfor.nic.in/content/inviting-comments-all-concerned-stakeholders-draft-national-forest-policy-2018>

India submitted its INDC under UNFCCC in 2015 and committed to creating an additional carbon sink of 2.5 to 3 billion tons of CO₂ equivalent through additional forest and tree cover by 2030. It may also be noted that, addressing the drivers of degradation and deforestation as well as afforestation of degraded areas forms part of the objectives of India's draft REDD + Policy and Strategy released in 2016.

Of course, to ensure maximum biodiversity benefits and also restoration of degraded ecosystems, care has to be taken to ensure planting endemic tree species rather than be guided by commercial considerations which could prove to be counter-productive.

Keeping in view the foregoing and considering the intrinsic link between biodiversity and forests, the following targets need to be considered to implement NBAP.

- (a) Creating additional forest and tree cover (FTC) to the extent of 2,94,000 sq.km. to bridge the gap (8.94%) between the present level of 24.39% and the national goal of 33.33% of the country's geographical area.
- (b) Improving quality of forest cover in 'open forest' area of 3,01,797 sq.km.

Assuming INR 120,000 per hectare as cost of creating additional FTC and INR 60,000 per hectare⁹ as cost of improving quality of 'open forest' land, the total investment needed works out to INR 533,878 Crs. Between the 2015 ISFR and 2017 ISFR of FSI, FTC has gone up by about 1%¹⁰. However, given the enormous gap between the goal of one third forest cover and the present FTC and also taking in to account India's commitment in the form of INDC under UNFCCC, it would be in order to assume that the gap in terms of FTC as well as improving quality of open category degraded forest land would be achieved over the next 30 years.

⁹ Based on cost norms adopted by MoEF&CC in providing assistance to states under the Green India Mission (GIM). However, as unskilled labour wage rates in the States are more than double the rate assumed by MoEF&CC (Rs.100 per day), the rates assumed are 100% more than corresponding GIM rates. In the case of restoration of degraded forest, INR 60,000 per hectare assumed is twice the Type B norm of INR 30,000 per hectare and for creating additional FTC, the cost assumed of INR 120,000 is twice the the average cost norm for agro and social forestry under GIM of INR 60,000 (approx.).

¹⁰<http://pibphoto.nic.in/documents/rlink/2018/feb/p201821201.pdf>

This would require adding FTC at an annual rate of 9800 sq.km and improving degraded open category forest land at an annual rate of 10060 sq.km. Accordingly, for the next five and 15 years, the fund requirement would be as follows:

Table 4 Cost of creating additional FTC and improving degraded open forest

Creating additional FTC				Improving quality of degraded open forest			
Per year FTC to be created (sq.km)	Cost per year @120,000 ,00 per sq.km.	Cost for 5 years	Cost for 15 years	Per year afforestation of open forest (sq.km)	Cost per year @60,00 0,00 per sq.km.	Cost for 5 years	Cost for 15 years
9800	11,760 Crs.	58,800 Crs.	176,40 0Crs.	10060	6,036 Crs.	30,180 Crs.	90,540 Crs.

The gap in funding over these timeframes would need to be worked out considering resources available under National Afforestation Programme, scheme of National Afforestation and Eco-development Board of MoEF&CC, Green India Mission, CAMPA, etc.

4.3. Relocation of people from core areas of tiger reserves

As of 2016, the number of families still residing in core areas of tiger reserves has been estimated as 44,506. The protected area-wise data is given below. The National Tiger Conservation Authority (NTCA) has declared a package of INR 1 million per family in lieu of physical rehabilitation. At this rate, the cost of relocating and rehabilitating all the families would be INR 4451 Crs. The cash compensation package of INR 1 million is all inclusive and subsumes all costs associated with physical rehabilitation including provision of cultivable land, homestead, etc.

However, it is well recognized that usually families relocate voluntarily only after at least one son becomes a major when he separately becomes entitled for INR 1 million rehabilitation package. Hence, the total cost of rehabilitating people from core and critical tiger habitats could be assumed to be 2 X INR 4451 Crs. = INR 8902 Crs.

The resources available for this purpose with NTCA could be considered to evaluate the resources gap.

⁹ Source: NTCA

4.4. Cleaning/Restoration of wetlands and lakes

(a) . The National Wetlands Atlas, 2011 of published by MoEF&CC covers all water bodies including rivers/streams (34.46%), reservoirs and barrages (16.26%), inter-tidal mud-flats (15.82%), lakes and ponds (4.78%), tanks and ponds (8.59%), etc. In all, wetlands (inclusive of all water bodies as above) occupy a total area of 15.26 Million hectares and account for 4.63% of the total geographical area of the country. Thus, lakes, ponds and tanks account for 13.37% of the total wetlands area and cover an area of 2.04 Million hectares.

The cost of restoration of lakes varies from INR 0.3 Cr. To 0.43 Cr¹⁰ under the MoEF&CC scheme of National Program for Conservation of Aquatic Ecosystems (NPCA) which covers lakes and wetlands. Distinction between lakes and wetlands has been made on the basis of water spread area with lakes being larger than wetlands. Under NPCA, while wastewater treatment is a significant component (about 30%) in restoration of lakes, this activity is normally not a component in restoration of wetlands.

Keeping the foregoing in view, it would be reasonable to presume that, on an average, under the MoEF&CC scheme of NPCA, for lakes and wetlands put together, the cost per hectare would be INR 0.3 Cr. and that 70% of the cost would be taken up by activities other than wastewater treatment such as catchment area treatment, de-silting and de-weeding, restoration of hydrological regime, etc.

Since 100% of the entire domestic waste treatment costs are accounted for under rejuvenation/conservation of rivers, to avoid double counting, it is proposed to consider 0.21 Cr. per hectare (70% of INR 0.3 Cr.) as the cost of restoration of degraded lakes, ponds and wetlands.

Of the total area of 2.04 million hectares under lakes, ponds and tanks as per the National Wetlands Atlas, 2011, if it is assumed that, at least 10% of the water body area would require restoration, the cost of restoration would amount to INR 42,840 Crs.

In terms of available resources, budgetary support available under the following programs of GOI and schemes of State Govts., if any, would need to be considered to arrive at the resources gap.

1. NPCA
2. Repair, Renovation and Restoration of Water Bodies of the Ministry of Water Resources, River Development and Ganga Rejuvenation

¹⁰ Source: MoEF&CC

4..5. Sanitation

The funding requirement as per SBM (Urban) is Rs. 62,009 Crs. Of this, Rs. 14,623 Crs. would come from GOI and Rs. 4,874 Crs. from the State Govts. The balance is to be raised from various sources – private sector, CSR, external assistance, user charges, market borrowing, etc.

Like-wise, as of 2015, SBM as a whole was estimated to cost Rs. 2 lakh Crs. over the next five years to construct 12 Cr. toilets and make India open defecation free by 2019¹¹.

SBM seeks to eliminate open defecation and manual scavenging. It includes IEC, capacity building, individual, community and public toilets, solid and liquid waste management, etc.

Domestic wastewater treatment costs for rejuvenation of rivers and wetlands do not account for non-point sources of pollution. However, as SBM seeks to eliminate open defecation by 2019 and thereby eliminate the principal source of non-point pollution impacting water quality of rivers and wetlands, in making 5 and 15 year projections of fund requirements for rejuvenation of rivers and wetlands, costs involved in eliminating non-point sources of pollution could be ignored.

¹¹<https://economictimes.indiatimes.com/news/economy/infrastructure/swachh-bharat-abhiyaan-government-builds-7-1-lakh-toilets-in-january/articleshow/46269612.cms>

4.6. Invasive Alien Species (IAS)

The India State of Forest Report (ISFR), 2017 of FSI states that, by way of a change in sampling design, the National Forest Inventory (NFI) which would be published in ISFR 2019 would cover many more parameters – Non-Timber Forest Produce, IAS, water availability near the sample plot, etc. IAS outside forested areas would also be covered as the sampling design would cover plots both inside and outside recorded forest areas. Clearing IAS inside protected areas has to take in to consideration aspects such as carrying capacity in respect of tiger population, etc.

The problem of IAS has been recognized as the second most important cause (after diversion of forest land for non-forest use and habitat fragmentation)¹² for biodiversity loss in India. Hence, mainstreaming concerns surrounding IAS in the planning process at Central

and State levels and getting adequate resources allocated especially under large multi-purpose programs such as MNREGA could be a priority item under BFP. However, in the absence of reliable, country-wide data on IAS, there is no option but to wait till 2019 to get the data and accordingly decide on targets for clearing IAS and figure out an appropriate finance solution.

¹² India's Fifth National Report under the Convention on Biodiversity

5. ESTIMATE OF TOTAL FUNDS NEEDED INCLUDING FOR QUANTITATIVE TARGETS (INR IN CRORES) PER ANNUM FOR THE IMPLEMENTATION OF NATIONAL BIODIVERSITY ACTION PLAN

The Plan estimations projections provided 'business as usual scenario' for biodiversity funding, as the Plan budgeting in India essentially followed the incremental budgeting process and hence considered to provide an approximate idea on of the funding needs for the given period. Hence, financial needs assessment based on quantitative targets (as gathered from relevant national policy documents/strategies/commitments), by incorporating baselines and unit costs wherever available, in areas such as Forest and Tree cover, River rejuvenation and conservation, Conservation of core tiger habitats, Cleaning/restoration of wetlands and lakes and sanitation have been undertaken to arrive at the overall funding needs for the implementation of the NBAP and the NBTs.

The projected financial requirements during the 12th FYP, under the 'business as usual scenario' spread across 178 schemes and programmes of 24 Ministries and 2 Departments yielded an annual estimate of Rs.71,347.80 crores. Additional assessments by incorporating on quantitative targets yielded an annual estimate of Rs. 26,785 crores. A combined financial needs assessment, after accounting for overlap between the two assessments, yielded an annual requirement to the tune of Rs. 91,437 crores were estimated.

Biodiversity Financial Needs Assessment for the period 2012-13 to 2016-17 (at Central Government level based on Working Group Documents)				
No. of Ministries	No. of Departments	No. of Schemes	12FYP (2012-17) Needs Projection	Average Annual Biodiversity Attributable Needs Projection (2012-17)
24	2	178	356738.98 Crs	71347.80 Crs.

Biodiversity Financial Needs Assessment for the period 2012-13 to 2016-17 (annual needs)		
Needs assessment from WG Reports of the 12FYP	Needs assessment from quantitative targets	Reassessed total financial needs after adding requirements on quantitative targets*
Rs. 71,348 Crs.	Rs. 26,785 Crs.	Rs. 91,437 Crs.

*After taking in to account overlap between the two assessments: Additional Details of projections available in: Rajagopalan, V., (2018). Biodiversity Finance Plan, Version 1. UNDP-BIOFIN India Project.

**FINANCIAL ATTRIBUTIONS AND THE ASSOCIATED SCHEMES AND PROGRAMMES
DURING THE 12 FYP (2012-17)**

No of Scheme	Ministry / Department	Name of the Working Group / Steering Committee of the 12 FYP (2012-2017)	Name of the Plan/ Scheme/Service/Project	12th Plan Requirement (Rs. in Crores)	BD Relevance (Rio Marker)	Attribution Coefficient	Five year needs projection (2012-2017)	Annual needs projection (Rs.in Crores)
1	Ministry of Agriculture	Animal Husbandry and Dairying	Cattle and buffalo Breeding (Development)	8500.00	Indirect medium	0.375	3187.50	637.50
2	Ministry of Agriculture	Animal Husbandry and Dairying	Mission on pigs	700.00	Indirect medium	0.375	262.50	52.50
3	Ministry of Agriculture	Animal Husbandry and Dairying	Small ruminants, rabbits and broiler buffalo calves	400.00	Indirect medium	0.375	150.00	30.00
4	Ministry of Agriculture	Animal Husbandry and Dairying	Poultry development including venture capital fund	600.00	Indirect medium	0.375	225.00	45.00
5	Ministry of Agriculture	Animal Husbandry and Dairying	Conservation of threatened livestock breeds	200.00	Indirect medium	0.375	75.00	15.00
6	Ministry of Agriculture	Animal Husbandry and Dairying	Fodder & feed development	2000.00	Indirect medium	0.375	750.00	150.00
7	Ministry of Agriculture	Animal Husbandry and Dairying	Livestock Insurance, census and sample survey	900.00	Indirect medium	0.375	337.50	67.50
8	Ministry of Agriculture	Animal Husbandry and Dairying	Livestock extension and delivery of services and women empowerment	200.00	Indirect medium	0.375	75.00	15.00
9	Ministry of Agriculture	Animal Husbandry and Dairying	Disease Control – Immunization for important diseases, disease surveillance, diagnostic laboratories, veterinary infrastructure, drug control authority, mobile veterinary clinics, traceability & food safety	7000.00	Indirect medium	0.375	2625.00	525.00
10	Ministry of Agriculture	Animal Husbandry and Dairying	Strengthening infrastructure - Veterinary Education	4000.00	Indirect medium	0.375	1500.00	300.00
11	Ministry of Agriculture	Animal Husbandry and Dairying	Dairy Development activities (including for Clean Milk Production)	2500.00	Indirect medium	0.375	937.50	187.50
12	Ministry of Agriculture	Animal Husbandry and Dairying	National Dairy Plan (NEW)	1760.00	Indirect medium	0.375	660.00	132.00
13	Ministry of Agriculture	Animal Husbandry and Dairying	Dairy Venture Capital Fund	2500.00	Indirect medium	0.375	937.50	187.50
14	Ministry of Agriculture	Natural Resource management and Rainfed Farming	National Rainfed Areas Program (New Scheme)	10500.00	Indirect medium	0.375	3937.50	787.50
15	Ministry of Agriculture	Natural Resource management and Rainfed Farming	Mainstream programs of respective departments “Rainfed Investment Windows” (in agriculture, animal husbandry, horticulture, fisheries, ground water, civil supplies) - MoWR, RD & GR	2000.00	Indirect medium	0.825	1650.00	330.00
16	Ministry of Agriculture	Natural Resource management and Rainfed Farming	National Food Security Mission (NFSM) : Create separate window with in the National Food Security Mission for “Local Food Security in rainfed areas”– focusing on intensive area based Agronomic Innovations (CA, SRI and LEISA/NPM) where local food security through increasing productivity of all subsistence food crops (rice, millets, pulses and edible oil seeds) of small holders be taken up.	2000.00	Major scheme	0.102	204.00	40.80
17	Ministry of Agriculture	Natural Resource management and Rainfed Farming	Evolving institutional architecture for rain fed areas	500.00	Indirect medium	0.375	187.50	37.50
18	Ministry of Agriculture	Natural Resource management and Rainfed Farming	Diversified crop patterns and comprehensive initiative on millets and minor pulses including integration of millets into PDS (Crop Husbandry)	550.00	Indirect medium	0.375	206.25	41.25
19	Ministry of Agriculture	Natural Resource management and Rainfed Farming	Commons pilot initiatives and facilitating policy at state levels (Mapping and characterizing common lands)	20.00	Indirect medium	0.375	7.50	1.50
20	Ministry of Agriculture	Natural Resource management and Rainfed Farming	Wider extension of support irrigation to secure kharif rainfed crops and Participatory Groundwater management	300.00	Indirect medium	0.825	247.50	49.50
21	Ministry of Agriculture	Outreach of Institutional Finance, Cooperatives and Risk Management	National Cooperative Development Corporation (NCDC)	3850.00	Indirect medium	0.375	1443.75	288.75
22	Ministry of Agriculture	Outreach of Institutional Finance, Cooperatives and Risk Management	Modified National Agricultural Insurance Scheme (MNAIS)	14300.00	Indirect marginal	0.025	357.50	71.50

23	Ministry of Agriculture	Horticulture and Plantation Crops (Horticulture Development Programmes of Horticulture Division of DAC and Commodity Boards of the Ministry of Commerce)	Area Expansion Programmes in Integrated Project Mode including protected cultivation	10000.00	Indirect medium	0.375	3750.00	750.00
24	Ministry of Agriculture	Horticulture and Plantation Crops	Productivity Enhancement of Existing Orchards / Production Clusters in Project Mode including pollination support	10000.00	Indirect medium	0.375	3750.00	750.00
25	Ministry of Agriculture	Horticulture and Plantation Crops	Additional Provision for NE region, Hilly areas and scheduled areas and small & marginal Farmers etc	3000.00	Indirect medium	0.375	1125.00	225.00
26	Ministry of Agriculture	Horticulture and Plantation Crops	Infrastructure development for Input production	250.00	Indirect medium	0.375	93.75	18.75
27	Ministry of Agriculture	Horticulture and Plantation Crops	Supply Chain Management, Post-Harvest Management	7300.00	Indirect medium	0.375	2737.50	547.50
28	Ministry of Agriculture	Horticulture and Plantation Crops	Marketing Infrastructure, HRD & Market information	2000.00	Indirect medium	0.375	750.00	150.00
29	Ministry of Agriculture	Horticulture and Plantation Crops	Enhancing Export Competitiveness	250.00		0.000	0.00	0.00
30	Ministry of Agriculture	Horticulture and Plantation Crops	Human Resource Development	250.00		0.000	0.00	0.00
31	Ministry of Agriculture	Horticulture and Plantation Crops	Horticulture Database	175.00	Indirect medium	0.375	65.63	13.13
32	Ministry of Agriculture	Horticulture and Plantation Crops	Crop Insurance and Setting up Weather Stations	250.00	Indirect marginal	0.025	6.25	1.25
33	Ministry of Agriculture	Horticulture and Plantation Crops	Schemes of Coconut Development Board	1000.00	Indirect medium	0.375	375.00	75.00
34	Ministry of Agriculture	Horticulture and Plantation Crops	Schemes Components of Bamboo Development	500.00	Indirect medium	0.375	187.50	37.50
35	Ministry of Agriculture	Horticulture and Plantation Crops	Horticulture Promotion Services- NCCD	25.00	Indirect medium	0.375	9.38	1.88
36	Ministry of Agriculture	Horticulture and Plantation Crops	Schemes of Tea Board (shifted to MoCI)	1600.00		0.000	0.00	0.00
37	Ministry of Agriculture	Horticulture and Plantation Crops	Schemes of Coffee Board (shifted to MoCI)	1200.00		0.000	0.00	0.00
38	Ministry of Agriculture	Horticulture and Plantation Crops	Schemes of Rubber Board (shifted to MoCI)	1180.00		0.000	0.00	0.00
39	Ministry of Agriculture	Horticulture and Plantation Crops	Schemes of Spice Board (shifted to MoCI)	900.00		0.000	0.00	0.00
40	Ministry of Agriculture	Agricultural Marketing Infrastructure, Secondary Agriculture and Policy Required for Internal and External Trade	Secondary Agriculture – Medicinal and Aromatic plants	300.00	Indirect veryhigh	0.825	247.50	49.50
41	Ministry of Agriculture	Agricultural Marketing Infrastructure, Secondary Agriculture and Policy Required for Internal and External Trade	Secondary Agriculture –Organic farming	200.00	Indirect veryhigh	0.825	165.00	33.00
42	Ministry of Agriculture	Agricultural Marketing Infrastructure, Secondary Agriculture and Policy Required for Internal and External Trade	Secondary Agriculture – Stevia	200.00	Indirect veryhigh	0.825	165.00	33.00
43	Ministry of Agriculture	Agricultural Marketing Infrastructure, Secondary Agriculture and Policy Required for Internal and External Trade	Biomass and Residue utilization	1000.00	Indirect medium	0.375	375.00	75.00
44	Ministry of Agriculture	Agricultural Research and Education	Crop Science, including Plant Protection and Seed	10000.00	Major scheme	0.235	2350.00	470.00
45	Ministry of Agriculture	Agricultural Research and Education	Horticulture (Central Institute of Horticulture)	4000.00	Indirect medium	0.375	1500.00	300.00
46	Ministry of Agriculture	Agricultural Research and Education	Natural Resource Management	3500.00	Indirect medium	0.375	1312.50	262.50
47	Ministry of Agriculture	Agricultural Research and Education	Agricultural Engineering	1500.00	Indirect marginal	0.025	37.50	7.50
48	Ministry of Agriculture	Agricultural Research and Education	Animal Sciences	3500.00	Indirect marginal	0.375	1312.50	262.50
49	Ministry of Agriculture	Agricultural Research and Education	Fisheries	1000.00	Indirect marginal	0.375	375.00	75.00
50	Ministry of Agriculture	Agricultural Research and Education	Agricultural Education	10000.00	Indirect marginal	0.025	250.00	50.00
51	Ministry of Agriculture	Agricultural Research and Education	Agricultural Extension	9000.00	Indirect marginal	0.025	225.00	45.00
52	Ministry of Agriculture	Agricultural Research and Education	Agricultural Economics, Marketing and Statistics	100.00	Indirect marginal	0.025	2.50	0.50
53	Ministry of Agriculture	Agricultural Research and Education	ICAR/DARE Headquarters, CAU	1000.00	Indirect medium	0.375	375.00	75.00
54	Ministry of Agriculture	Agricultural Research and Education	Structure, Modification of ICAR, IPR etc.	300.00	Indirect medium	0.375	112.50	22.50
55	Ministry of Agriculture	Agricultural Research and Education	Externally Aided (NAIP, Indo-US, National Fund, NAEP)	1500.00	Indirect medium	0.375	562.50	112.50

56	Ministry of Agriculture	Agricultural Research and Education	Extra-mural funding	1000.00		0.000	0.00	0.00
57	Ministry of Agriculture	Agricultural Research and Education	Farmer Innovation, Agril. Entrepreneurship, National innovation, public-private partnership, Agril.India funds	1100.00	Indirect medium	0.375	412.50	82.50
58	Ministry of Agriculture	Development and Management of Fisheries and Aquaculture	Development of Marine Fisheries, Infrastructure and Post-Harvest Operations - NFDB	1000.00	Indirect medium	0.375	375.00	75.00
59	Ministry of Agriculture	Development and Management of Fisheries and Aquaculture	Development of Inland Fisheries and Aquaculture - National Fishery Development Board	1200.00	Indirect medium	0.375	450.00	90.00
60	Ministry of Agriculture	Development and Management of Fisheries and Aquaculture	Human Resource Development in Fisheries Sector - NFDB	300.00	Indirect medium	0.375	112.50	22.50
61	Ministry of Agriculture	Development and Management of Fisheries and Aquaculture	National Scheme on Welfare of Fishermen and Women - DAHD&F	800.00	Indirect medium	0.375	300.00	60.00
62	Ministry of Agriculture	Development and Management of Fisheries and Aquaculture	Strengthening of Data base in Fisheries Sector - DAHD&F	300.00	Indirect medium	0.375	112.50	22.50
63	Ministry of Agriculture	Development and Management of Fisheries and Aquaculture	Monitoring, Control & Surveillance; Strengthening of Policy and Legal Frameworks and other Need-based Interventions - DAHD&F	800.00	Indirect medium	0.375	300.00	60.00
64	Ministry of Agriculture	Development and Management of Fisheries and Aquaculture	Assistance to Fisheries Institutions – NFDB & DAHD&F	600.00	Indirect medium	0.375	225.00	45.00
65	Ministry of Agriculture	Development and Management of Fisheries and Aquaculture	National Fisheries Development Board - NFDB	1000.00	Indirect medium	0.375	375.00	75.00
66	Ministry of Agriculture	Agricultural Extension for Agriculture and Allied Sectors	Technology solutions and innovations (AICRP on Technology, mapping, adoption and innovations, National Technology Solutions Project, ICAR-SAU extension initiatives, National Farm Innovation Foundation).	375.00	Indirect medium	0.375	140.63	28.13
67	Ministry of Agriculture	Agricultural Extension for Agriculture and Allied Sectors	Women Empowerment, Household Food & Nutritional Security (Promoting Kitchen Gardening Group/ Association	510.00	Indirect medium	0.375	191.25	38.25
68	Ministry of Agriculture	Agricultural Extension for Agriculture and Allied Sectors	Extension Strategy for Difficult Areas (Coastal Area Sustainable Agriculture Development Programme)	100.00	Indirect marginal	0.025	2.50	0.50
69	Ministry of Agriculture	DAC	Protection of Plan varieties and Farmer's Rights	220.00	Major scheme	0.235	51.70	10.34
70	Ministry of AYUSH	Working group on AYUSH	System Strengthening - AYUSH	1409.00	Indirect veryhigh	0.825	1162.43	232.49
71	Ministry of AYUSH	Working group on AYUSH	Educational Institution - AYUSH	5246.55		0	0.00	0.00
72	Ministry of AYUSH	Working group on AYUSH	Research and Development including Medicinal Plants (including National Medicinal Plants Board) (Sub head - Medicinal Plants)	4446.50	Indirect veryhigh	0.825	3668.36	733.67
73	Ministry of AYUSH	Working group on AYUSH	Development of AYUSH Industry	1010.50	Indirect veryhigh	0.825	833.66	166.73
74	Ministry of AYUSH	Working group on AYUSH	Funding of NGOs engaged in local health traditions, midwifery practices etc, under NRHM	100.00	Indirect veryhigh	0.825	82.50	16.50
75	Ministry of AYUSH	Working group on AYUSH	Promotion of AYUSH (National Mission on AYUSH)	7425.00	Indirect veryhigh	0.825	6125.63	1225.13
76	Ministry of AYUSH	Working group on AYUSH	National Mission on Medicinal Plants	1710.00	Indirect veryhigh	0.825	1410.75	282.15
77	Ministry of AYUSH	Working group on AYUSH	Setting up of National Institute of Medicinal Plants	100.00	Indirect veryhigh	0.825	82.50	16.50
78	Ministry of AYUSH	Working group on AYUSH	Mainstreaming of AYUSH under NRHM	10000.00	Indirect veryhigh	0.825	8250.00	1650.00
79	Ministry of Chemicals and Fertilizers	Indian Chemical Industry	Technology up-gradation fund (To promote investments in R&D and green technologies)	500.00		0	0.00	0.00
80	Ministry of Chemicals and Fertilizers	Working group on Fertilizer Industry	Bio/organic fertilizers	100.00	Indirect veryhigh	0.825	82.50	16.50
81	Ministry of Coal	Working group on Coal and Lignite	Conservation and Safety in Coal Mines	820.00	Indirect marginal	0.025	20.50	4.10

82	Ministry of Coal	Working group on Coal and Lignite	Environmental Measures & Subsidence Control (EMSC) Schemes	9657.61	Indirect marginal	0.025	241.44	48.29
83	Ministry of Coal	Working group on Coal and Lignite	Clean Coal Technologies (R & D program)	1326.00	Indirect marginal	0.025	33.15	6.63
84	Ministry of Commerce and Industry	Outcome budget document – Dept. of Commerce	Agricultural Products Export Development Authority (APEDA)	1100.00	Major scheme	0.078	85.80	17.16
85	Ministry of Commerce and Industry	Outcome budget document – Dept. of Commerce	Marine Products Export Development Authority (MPEDA)	750.00	Major scheme	0.15	112.50	22.50
86	Ministry of Commerce and Industry	Outcome budget document – Dept. of Commerce	Tea Board	1425.00	Indirect low	0.15	213.75	42.75
87	Ministry of Commerce and Industry	Outcome budget document – Dept. of Commerce	Coffee Board	950.00	Indirect low	0.15	142.50	28.50
88	Ministry of Commerce and Industry	Outcome budget document – Dept. of Commerce	Rubber Board	910.00	Indirect low	0.15	136.50	27.30
89	Ministry of Commerce and Industry	Outcome budget document – Dept. of Commerce	Spices Board	670.00	Indirect low	0.15	100.50	20.10
90	Ministry of Commerce and Industry	Outcome budget document – Dept. of Commerce	Cashew EPC	30.00	Indirect low	0.15	4.50	0.90
91	Ministry of Commerce and Industry	Working group on Cement Industry	National Council for Cement and Building Materials (sequestration of carbon-dioxide in algae culture)	150.00		0	0.00	0.00
92	Ministry of Communication and Technology	In March 2010, the Cabinet Committee on Infrastructure (CCI) approved the establishment of the National Knowledge Network (NKN) at an outlay of Rs 5990 Crore, to be implemented by NIC over a period of 10 years.	National Knowledge Network	2995.00	Indirect marginal	0.025	74.88	14.98
93	Ministry of Culture	Working Group on Art and Culture	Conservation & Development of movements & Archeological sites by State/UT, colleges & State 9 (28 World Heritage Sites located at present in India are managed by ASI, MoEFCC Ministry of Railways, Government of Rajasthan, etc.	695.00	Multi purpose	0.056	38.92	7.78
94	Ministry of Development of North Eastern Region	http://www.mdoner.gov.in/content/12th-plan-projected-outlay	North Eastern Climate Change Adaption Project [assisted by German Govt. and a German Bank-Kfw]	457.90	Indirect marginal	0.025	11.45	2.29
95	Ministry of Development of North Eastern Region	http://www.mdoner.gov.in/content/12th-plan-projected-outlay	NER Livelihoods Project (World Bank Assisted)	670.00	Indirect marginal	0.025	16.75	3.35
96	Ministry of Drinking Water and Sanitation	Report of the Working Group on Rural Domestic Water and Sanitation	National Rural Drinking Water Programmes – Sustainability component	20463.00	Major scheme	0.175	3581.03	716.21
97	Ministry of Drinking Water and Sanitation	Report of the Working Group on Rural Domestic Water and Sanitation	National Rural Drinking Water Programmes – Natural calamity component	2728.00	Major scheme	0.175	477.40	95.48
98	Ministry of Drinking Water and Sanitation	Nirmal Bharat Abhiyan (NBA) in the XIth Five Year Plan { Ministry of Drinking Water & Sanitation }	Nirmal Bharat Abhiyan /Swachh Bharat Abhiyan	322147.00	Multi purpose	0.206	66362.28	13272.46
99	Ministry of Earth Sciences	Working Group on Earth System organization	Atmospheric processes and Modeling and Services - Agrometeorology	265.00	Indirect marginal	0.025	6.63	1.33
100	Ministry of Earth Sciences	Working Group on Earth System organization	Ocean observations- Moored buoys, drifting buoys, current meters etc.	386.00	Indirect marginal	0.025	9.65	1.93
101	Ministry of Earth Sciences	Working Group on Earth System organization	Ocean observations - Sustained Indian Ocean Biogeochemical and Ecological Research (SIBER) and Geotraces	100.00	Multi purpose	0.146	14.60	2.92

102	Ministry of Earth Sciences	Working Group on Earth System organization	Ocean Science and Services - Ocean information and services	73.00	Multi purpose	0.412	30.08	6.02
103	Ministry of Earth Sciences	Working Group on Earth System organization	Ocean Science and Services - Ocean Research and Modelling	75.00	Multi purpose	0.146	10.95	2.19
104	Ministry of Earth Sciences	Working Group on Earth System organization	Ocean Science and Services - INCOIS -Operations and Maintenance	195.00	Multi purpose	0.412	80.34	16.07
105	Ministry of Earth Sciences	Working Group on Earth System organization	Ocean Science and Services - Marine Living Resources + building + Operation & Maintenance	200.00	Multi purpose	0.5	100.00	20.00
106	Ministry of Earth Sciences	Working Group on Earth System organization	Ocean Science and Services - Coastal Research (ICMAM O&M other related projects, COMAPS)	185.00	Multi purpose	0.146	27.01	5.40
107	Ministry of Earth Sciences	Working Group on Earth System organization	Ocean Science and Services - Drugs from the Sea	200.00	Multi purpose	0.142	28.40	5.68
108	Ministry of Earth Sciences	Working Group on Earth System organization	Ocean Science and Services - Microbial Oceanography	100.00	Multi purpose	0.142	14.20	2.84
109	Ministry of Earth Sciences	Working Group on Earth System organization	Ocean Survey & Mineral Resources - Ocean Survey and Resources(EIA, Metallurgy, Hydrothermal sulfides, Cobal Crust)	373.00	Multi purpose	0.093	34.69	6.94
110	Ministry of Earth Sciences	Working Group on Earth System organization	Ocean Survey & Mineral Resources - Hydrothermal sulfides, Cobal Crust in the Indian Ocean Ridge	1100.00	Multi purpose	0.093	102.30	20.46
111	Ministry of Earth Sciences	Working Group on Earth System organization	Ocean Technology (incl. Marine biotechnology, NIOY, Development of Island community)	1547.00	Multi purpose	0.142	219.67	43.93
112	Ministry of Earth Sciences	Working Group on Earth System organization	Polar Science & Cryosphere	2428.00	Indirect low	0.025	60.70	12.14
113	Ministry of Earth Sciences	Working Group on Earth System organization	Geosciences	174.00	Indirect low	0.025	4.35	0.87
114	Ministry of Earth Sciences	Working Group on Earth System organization	Earth Science s - Research, Education, Training and Outreach (incl. Centres of excellence)	1849.00	Multi purpose	0.14	258.86	51.77
115	Ministry of Environment & Forests	Sub-group on Forestry and Sustainable NRM	National Afforestation Programme	13500.00	Direct	0.95	12825.00	2565.00
116	Ministry of Environment & Forests	Sub- group on Forestry and Sustainable NRM	Capacity Development of the JFMCs, Gram Sabha and other Stakeholders	2500.00	Indirect high	0.625	1562.50	312.50
117	Ministry of Environment & Forests	Sub-group on Forestry and Sustainable NRM	Green India Mission	23000.00	Indirect veryhigh	0.825	18975.00	3795.00
118	Ministry of Environment & Forests	Sub-group on Forestry and Sustainable NRM	Intensification of the Forest Management	2000.00	Direct	0.95	1900.00	380.00
119	Ministry of Environment & Forests	Sub-group on Forestry and Sustainable NRM	Satellite based Forest Resource Assessment and Technological based M&E.	1000.00	Direct	0.95	950.00	190.00
120	Ministry of Environment & Forests	Sub-group on non-timber forest produce	NTFP - Resource management, Marketing, MSP, CB, IEC, R&D.	6590.00	Indirect high	0.625	4118.75	823.75
121	Ministry of Environment & Forests	Sub-group on Fodder and Pasture Management	Mapping of ecologically sensitive grasslands, development of seed/germplasm banks & nurseries of fodder species etc.	910.00	Direct	0.95	864.50	172.90
122	Ministry of Environment & Forests	Sub-group on Forestry Institutional & Technology Management	FSI, WII, ICFRE, IIFM, IPIRTI, IGNFA, DFE, capacity building, technological upgradation. (Grants in-aid to F&WL Institutions)	6499.00	Direct	0.95	6174.05	1234.81
123	Ministry of Environment & Forests	Sub-group on International Cooperation and Law	Strengthening of International Cooperation and Law	175.00	Indirect low	0.025	4.38	0.88
124	Ministry of Environment & Forests	Working group on Wildlife Ecotourism and Animal Welfare	Wildlife Management – Integrated Development of Wildlife Habitats (IDWH)	3000.00	Direct	0.95	2850.00	570.00
125	Ministry of Environment & Forests	Working group on Wildlife Ecotourism and Animal Welfare	Strengthening of Wildlife Division	775.00	Direct	0.95	736.25	147.25

126	Ministry of Environment & Forests	Working group on Wildlife Ecotourism and Animal Welfare	Wildlife Institute of India (WII)	224.18	Direct	0.95	212.97	42.59
127	Ministry of Environment & Forests	Working group on Wildlife Ecotourism and Animal Welfare	Project Tiger	5889.00	Direct	0.95	5594.55	1118.91
128	Ministry of Environment & Forests	Working group on Wildlife Ecotourism and Animal Welfare	Project Elephant	600.00	Direct	0.95	570.00	114.00
129	Ministry of Environment & Forests	Working group on Wildlife Ecotourism and Animal Welfare	Ecotourism for Livelihoods	635.00	Indirect high	0.625	396.88	79.38
130	Ministry of Environment & Forests	Working group on Wildlife Ecotourism and Animal Welfare	Animal welfare	300.00	Indirect high	0.625	187.50	37.50
131	Ministry of Environment & Forests	Sub-group on Environment	1. Environment Monitoring & Governance; 2. Pollution abatement, 3. R&D for Conservation & Development., 4. Conservation of Natural Resources & Ecosystems, 5. Environment Information, Education & Awareness; 6. Taj protection, 7. International Cooperation, 8. National Coastal Management Programme (NCMP) & 9. National River Conservation Plan (NRCP).	4543.00	Indirect veryhigh	0.825	3747.98	749.60
132	Ministry of Environment & Forests	Sub-group on Climate Change	Solar Mission	4337.00	Indirect marginal	0.025	108.43	21.69
133	Ministry of Environment & Forests	Sub-group on Climate Change	Energy Efficiency Mission (Ministry of Power)	3400.00	Indirect marginal	0.025	85.00	17.00
134	Ministry of Environment & Forests	Sub-group on Climate Change	Sustainable Habitat Mission	950.00	Indirect marginal	0.025	23.75	4.75
135	Ministry of Environment & Forests	Sub-group on Climate Change	Sustainable Agriculture Mission (MoA – National Mission for Sustainable Agriculture)	15000.00	Indirect medium	0.375	5625.00	1125.00
136	Ministry of Environment & Forests	Sub-group on Climate Change	Water Mission	0.00		0	0.00	0.00
137	Ministry of Environment & Forests	Sub-group on Climate Change	Sustainable Himalayan Eco-Systems	900.00	Indirect marginal	0.025	22.50	4.50
138	Ministry of Environment & Forests	Sub-group on Climate Change	Strategic Knowledge Mission	4337.00	Indirect marginal	0.025	108.43	21.69
139	Ministry of Human Resources Development	Social Sectors – Vol.III (12 th Five Year Plan) - Planning Commission	UGC (multiple schemes including flexi funds)	9000.00	Indirect marginal	0.025	225.00	45.00
140	Ministry of Information and Broadcasting	Working group on Information & Broadcasting sector	Media Outreach Programme and Publicity for Special Events (PIB)	100.00	Indirect marginal	0.025	2.50	0.50
141	Ministry of New and Renewable Energy	Working group on power	Bio-mass based Renewable Energy	10500.00	Indirect marginal	0.025	262.50	52.50
142	Ministry of Panchayati Raj	Working Group on "Panchayati Raj Institutions and Rural Governance"	Rajiv Gandhi Panchayat Sashaktikaran Abhiyan (RGPSA) – Gram Sabha - PESA	3700.00	Indirect high	0.625	2312.50	462.50
143	Ministry of Petroleum and Natural Gas	WG on Petroleum and Natural Gas	ONGC- Mangrove Restoration and Conservation Education Project' at Ankleshwar, ONGC has gone for the continuation of the mangrove plantation at Ankleshwar and Hazira.	31.00	Indirect veryhigh	0.825	25.58	5.12
144	Ministry of Power	Working group on Power	RGVY - For Electrification of remaining villages & habitations (ii) Providing LED lamps for BPL households (iii) DDG.	65990.00		0	0.00	0.00
145	Ministry of Power	Working group on Power	Scheme for Replacement of Inefficient Pump Sets by Energy Efficient Pump Sets in Agriculture Sector	30000.00		0	0.00	0.00

146	Ministry of Rural Development	Working Group on Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)	Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)	322147.00	Multi purpose (56.14%= 180853.00)	0.375	67820.00	13564.00
147	Ministry of Rural Development	Working Group on National Rural Livelihood Mission (NRLM)	Aajeevika - National Rural Livelihoods Mission (NRLM)	52722.00		0	0.00	0.00
148	Ministry of Rural Development	Working Group on Panchayati Raj and Rural Governance	Panchayati Raj and Rural Governance	77684.94		0	0.00	0.00
149	Ministry of Rural Development	Area programmes	Integrated Action Plan (IAP) For 60 Selected Tribal And Backward Districts	1800.00	Indirect high	0.625	1125.00	225.00
150	Ministry of Rural Development	Area programmes	Hill Areas Development Programme/ Western Ghats Development Programme (HADP/WGDP)	600.00	Indirect medium	0.375	225.00	45.00
151	Ministry of Science & Technology	WG on Enrichment of knowledge base	Enrichment of knowledge base (Human Resources Component, Inter-University Consortia, Centres/ Facilities, Mega Projects and Emerging Areas)	15800.00		0	0.00	0.00
152	Ministry of Science & Technology	WG on cross flow of technology	Funding for R&D in Cross-Disciplinary Areas & Training of Engineers/ Scientists/Stakeholders on Cross Flow of Technology	220.00		0	0.00	0.00
153	Ministry of Science & Technology	WG on S & T - HRD	S&T, Human Resource and Development (eg. CSIR Laboratories Biological Sciences, ICMR Institutions, DST, DBT etc)	4400.00	Indirect marginal	0.025	110.00	22.00
154	Ministry of Science & Technology	WG on PAN India S & T missions	National Mission on Energy and Environment	1700.00	Indirect marginal	0.025	42.50	8.50
155	Ministry of Science & Technology	WG on PAN India S & T missions	Cheap biofuel from biomass	50.00	Indirect marginal	0.025	1.25	0.25
156	Ministry of Science & Technology	WG on PAN India S & T missions	Remunerative agriculture from low land holdings	325.00	Indirect medium	0.375	121.88	24.38
157	Ministry of Science & Technology	WG on PAN India S & T missions	More Crop for Drop scheme for water productivity (PMKSY now under MoRD)	450.00	Indirect low	0.375	168.75	33.75
158	Ministry of Science & Technology	WG on PAN India S & T missions	Restoring Soil health (MoA Scheme)	375.00	Major scheme	0.275	103.13	20.63
159	Ministry of Science & Technology	WG on PAN India S & T missions	Climate Change Resilient Agriculture (MoA- DARE Scheme)	400.00	Indirect marginal	0.025	10.00	2.00
160	Ministry of Science & Technology	WG on Mega Science and Global Alliances	Observatory for Species Protection	500.00	Direct	0.95	475.00	95.00
161	Ministry of Science & Technology	WG on DSIR	National Knowledge Depository	13.82	Indirect marginal	0.025	0.35	0.07
162	Ministry of Science & Technology	WG on DSIR	National Research Development Corporation (NRDC)	180.00	Indirect marginal	0.025	4.50	0.90
163	Ministry of Science & Technology	WG on DBT	S & T Sector, R & D Institutions, New Institutions and Innovations	17887.81		0	0.00	0.00
164	Ministry of Science & Technology	WG on DST	National Mission on Bamboo Applications & Mission for Geospatial Application	200.00	Direct	0.95	190.00	38.00
165	Ministry of Science & Technology	WG on DST	Open Source innovation system (National Innovation Foundation Model)	175.00	Indirect marginal	0.025	4.38	0.88
166	Ministry of Science & Technology	WG on DST	Modernization of Mapping Organizations (SOI & NATMO)	400.00	Indirect low	0.15	60.00	12.00

167	Ministry of Science & Technology	WG on DST	Drugs & Pharmaceuticals Research	300.00	Indirect marginal	0.025	7.50	1.50
168	Ministry of Science & Technology	Synthetic and Systems Biology Resource Network (SSBRN)	Setting up of the CSIR Institute of Synthetic & Systems Biology (CSIR-ISSB); Establishing Network Centre for Synthetic and Systems Biology; Synthetic and Systems Biology Focal Centres in National Laboratories; ICT Connectivity, Computational Infrastructure, Knowledge ware Development	990.00	Indirect marginal	0.025	24.75	4.95
169	Ministry of Shipping	WG for the Port Sector	Environmental measure for infrastructure development of Port base industries.JNPT	18.00	Indirect veryhigh	0.825	14.85	2.97
170	Ministry of Shipping	WG for the Port Sector	Development of waste disposal system in JN Port area-JNPT	7.00	Indirect veryhigh	0.825	5.78	1.16
171	Ministry of Shipping	WG for the Port sector	Environmental upgradation Schemes - VPT	38.00	Indirect veryhigh	0.825	31.35	6.27
172	Ministry of Shipping	WG for the Port Sector	Upgradation of Environmental schemes Phase-III - VPT	50.00	Indirect veryhigh	0.825	41.25	8.25
173	Ministry of Shipping	WG for the Port Sector	Green Port Initiatives	220.00	Indirect veryhigh	0.825	181.50	36.30
174	Ministry of Statistics and Programme implementation	WG on Strategic Plan -MoSPI	Compilation of Environment and Forest statistics - Compilation of Environment and Forest statistics	684.67	Indirect low	0.15	102.70	20.54
175	Ministry of Tourism	Working Group On Art and Culture	Safeguarding And Other Protective Measures In The Area Of Intangible Heritage And Cultural Diversity (Arising Out Of Unesco Convention	25.00	Indirect marginal	0.025	0.63	0.13
176	Ministry of Tourism	Working Group On Art and Culture	Scheme for Sustaining the Living and Diverse Cultural Traditions of India	10.00	Indirect marginal	0.025	0.25	0.05
177	Ministry of Tourism	Working Group On Art and Culture	Scheme of Financial Assistance for Publication of Magazines and Journals dedicated to Indian Culture and Heritage	13.50	Indirect marginal	0.025	0.34	0.07
178	Ministry of Tourism	WG on Art and Culture Anthropological Survey of India (AnSI)	"Bio-Cultural Diversity, Environment and Sustainable Development"	21.00	Indirect marginal	0.025	0.53	0.11
179	Ministry of Tourism	WG on Tourism	Sustainable Tourism, Rural Tourism, Ecotourism And Heritage Tourism	0.00		0	0.00	0.00
180	Ministry of Tribal Affairs	Tribal Affairs ((P&M) Division	Market Development for Tribal Produce/ Products	175.00	Indirect high	0.625	109.38	21.88
181	Ministry of Tribal Affairs	Tribal Affairs ((P&M) Division	Grant-in-aid to State Tribal Development Cooperative corporations for MFP operations	150.00	Indirect high	0.625	93.75	18.75
182	Ministry of Urban Development	Steering Committee on Urbanisation	JNNURM (sewage component)	63865.26	Indirect veryhigh	0.825	52688.84	10537.77
183	Ministry of Water Resources	Steering Committee on Water Resources and Sanitation	Command area development and water management	30000.00	Indirect marginal	0.025	750.00	150.00
184	Ministry of Water Resources	Steering Committee on Water Resources and Sanitation	River Basin Management	2000.00	Indirect veryhigh	0.825	1650.00	330.00
185	Ministry of Water Resources	Steering Committee on Water Resources and Sanitation	Ground Water Management and Regulation	4655.00	Indirect veryhigh	0.825	3840.38	768.08
186	Ministry of Water Resources	Steering Committee on Water Resources and Sanitation	Watershed Development:	36460.00	Indirect medium	0.375	13672.50	2734.50
187	Ministry of Water Resources	Steering Committee on Water Resources and Sanitation	National Rain-fed Area Authority (NRAA)	423.40	Indirect medium	0.375	158.78	31.76
188	Ministry of Water Resources	Steering Committee on Water Resources and Sanitation	Improvement Of Surface Water Data (CWC) - Coastal Management Information System	180.00	Indirect low	0.15	27.00	5.40
189	Ministry of Water Resources	Steering Committee on Water Resources and Sanitation	Improvement Of Agro-Met Data (IMD)	2241.10	Indirect marginal	0.025	56.03	11.21
190	Ministry of Water Resources	Steering Committee on Water Resources and Sanitation	Flood Management Programme	16000.00	Indirect low	0.15	2400.00	480.00

191	Ministry of Water Resources	Steering Committee on Water Resources and Sanitation	River Management activities and Works Related to Border Areas and UTs	1250.00	Indirect low	0.15	187.50	37.50
192	Ministry of Water Resources	Steering Committee on Water Resources and Sanitation	Flood Forecasting	425.00	Indirect low	0.15	63.75	12.75
193	Ministry of Youth Affairs and Sports	Working Group on Adolescent and Youth Development	Nehru Yuva Kendra Sangathan	2182.35		0	0.00	0.00
194	Ministry of Youth Affairs and Sports	Working Group on Adolescent and Youth Development	National Service Scheme	600.00		0	0.00	0.00
195	Ministry of Youth Affairs and Sports	Working Group on Adolescent and Youth Development	Rajiv Gandhi National Institute For Youth Development	549.22		0	0.00	0.00
196	Department of Atomic Energy	WG on DAE	Radiation Technologies and their applications – Nuclear Agriculture for sustainability and societal benefits	25.00	Indirect medium	0.375	9.38	1.88
197	Department of Atomic Energy	WG on DAE	Developing Novel applications of radiation technology for value addition to food & agro commodities	14.00	Indirect medium	0.375	5.25	1.05
198	Department of Space	WG on Dept. of Space	Earth Observation Systems and Atmospheric Science Program – Missions - GISAT(Agri) , Resourcesat (Water) , Cartosat (Biodiversity Res, Geology, Carto rural, Urban, Enviroment)), R & D Satellite , Oceansta (Ocean Biology), RISAT (Agri. Water) SCATSat(Ocean & Atmosphere)	3238.00	Indirect marginal	0.025	80.95	16.19
199	Department of Space	WG on Dept. of Space	Earth Observation Systems and Atmospheric Science - Application initiatives - National Natural Resources Manamement System (NNRMS) & Remote Sensing Applications	560.00	Indirect marginal	0.025	14.00	2.80
200	Department of Space	WG on Dept. of Space	Integrated Space Technology Services- Village Resource Centres	90.00	Indiect marginal	0.025	2.25	0.45
12 FYP Total (in crores)				1456683.3			356738.98	
Annual Attribution (in crores)								71347.80

PRIMARY SOURCE OF DATA

Ministry/Department wise Working Groups/ Steering Committees of the Twelfth Five Year Plan (2012-2107) along with the schemes and programmes proposed them on biodiversity¹⁰

1. Ministry of Agriculture (MoA)

Report of the Working Group on Animal Husbandry & Dairying 12th Five Year Plan (2012-17)

http://planningcommission.gov.in/aboutus/committee/wrkgrp12/agri/AHD_REPORT_Final_rev.pdf

1. Cattle and buffalo Breeding
2. Mission on pigs
3. Small ruminants, rabbits and broiler buffalo calves
4. Poultry development including venture capital fund
5. Conservation of threatened livestock breeds
6. Fodder & feed development
7. Livestock Insurance, census and sample survey
8. Livestock extension and delivery of services and women empowerment
9. Disease Control – Immunization for important diseases, disease surveillance, diagnostic laboratories, veterinary infrastructure, drug control authority, mobile veterinary clinics, traceability & food safety
10. Strengthening infrastructure - Veterinary Education
11. Dairy Development activities (including for Clean Milk Production)
12. National Dairy Plan (NEW)
13. Dairy Venture Capital Fund

Report of the XII Plan Working Group on Natural Resource Management and Rainfed Farming

http://planningcommission.gov.in/aboutus/committee/wrkgrp12/agri/wg_NRM_Farming.pdf

14. National Rainfed Areas Program (New Scheme)
15. Mainstream programs of respective departments “Rainfed Investment Windows” (in agriculture, animal husbandry, horticulture, fisheries, ground water, civil supplies)
16. National Food Security Mission (NFSM) : Create separate window with in the National Food Security Mission for “Local Food Security in rainfed areas”.
17. Evolving institutional architecture for rain fed areas
18. Diversified crop patterns and comprehensive initiative on millets and minor pulses including integration of millets into PDS (Crop Husbandry)
19. Commons pilot initiatives and facilitating policy at state levels (Mapping and characterizing common lands)
20. Wider extension of support irrigation to secure kharif rainfed crops and Participatory Groundwater management

Report of the Working Group on Outreach of Institutional Finance, Cooperatives and Risk Management for the 12th Five Year Plan (2012-17)

http://planningcommission.gov.in/aboutus/committee/wrkgrp12/agri/wg_repcons.pdf

21. National Cooperative Development Corporation (NCDC)
22. Modified National Agricultural Insurance Scheme (MNAIS)

Report of the Working Group on Horticulture and Plantation Crops: XII Five Year Plan

http://planningcommission.gov.in/aboutus/committee/wrkgrp12/agri/wg_horti1512.pdf

23. Area Expansion Programmes in Integrated Project Mode including protected cultivation
24. Productivity Enhancement of Existing Orchards / Production Clusters in Project Mode including pollination support
25. Additional Provision for North Eastern region, Hilly areas and scheduled areas and small & marginal Farmers etc
26. Infrastructure development for Input production

¹⁰<http://planningcommission.gov.in/aboutus/committee/index.php?about=12strindx.htm>

27. Supply Chain Management, Post-Harvest Management
28. Marketing Infrastructure, HRD & Market information
29. Horticulture Database
30. Crop Insurance and Setting up Weather Stations
31. Schemes of Coconut Development Board
32. Schemes Components of Bamboo Development
33. Horticulture Promotion Services- NCCD

Report of the Working Group on Agricultural Marketing Infrastructure, Secondary Agriculture and Policy Required for Internal and External Trade for the XII Five Year Plan (2012-17)

http://planningcommission.gov.in/aboutus/committee/wrkgrp12/agri/weg_rep_market.pdf

34. Secondary Agriculture – Medicinal and Aromatic plants
35. Secondary Agriculture –Organic farming
36. Secondary Agriculture – Stevia
37. Biomass and Residue utilization

Report of the Working Agricultural Research and Education for the XII Five Year Plan: 2012-17

http://planningcommission.gov.in/aboutus/committee/wrkgrp12/agri/wgrep_research.pdf

38. Crop Science, including Plant Protection and Seed (PPV & FR Scheme)
39. Horticulture (Central Institute of Horticulture)
40. Natural Resource Management
41. Agricultural Engineering
42. Animal Sciences
43. Fisheries
44. Agricultural Education
45. Agricultural Extension
46. Agricultural Economics, Marketing and Statistics
47. ICAR/DARE Headquarters, CAU
48. Structure, Modification of ICAR, IPR etc.
49. Externally Aided (NAIP, Indo-US, National Fund, NAEP)
50. Farmer Innovation, Agricultural Entrepreneurship, National innovation, public-private partnership, Agricultural India funds

Report of the Working Group on Development and Management of Fisheries and Aquaculture for the XII Five Year Plan: 2012-17

http://planningcommission.gov.in/aboutus/committee/wrkgrp12/agri/wg_deve_management_con.pdf

51. Development of Marine Fisheries, Infrastructure and post-harvest operations-NFDB
52. Development of Inland Fisheries and Aquaculture - National Fishery Development Board
53. Human Resource Development in Fisheries Sector - NFDB
54. National Scheme on Welfare of Fishermen and Women - DAHD&F
55. Strengthening of Data base in Fisheries Sector - DAHD&F
56. Monitoring, Control & Surveillance; Strengthening of Policy and Legal Frameworks and other Need-based Interventions - DAHD&F
57. Assistance to Fisheries Institutions – NFDB & DAHD&F
58. National Fisheries Development Board - NFDB

Report of the Working Group on Agricultural Extension For Agriculture And Allied Sectors for the Twelfth Five Year Plan (2012-17)

http://planningcommission.gov.in/aboutus/committee/wrkgrp12/agri/wg_agriextn.pdf

59. Technology solutions and innovations (AICRP on Technology, mapping, adoption and innovations, National Technology Solutions Project, ICAR-SAU extension initiatives, National Farm Innovation Foundation).
60. Women Empowerment, Household Food & Nutritional Security (Promoting Kitchen Gardening Group/ Association)
61. Extension Strategy for Difficult Areas (Coastal Area Sustainable Agriculture Development Programme)

62. Protection of Plant varieties and Farmer's Rights

2. Ministry of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy (MoAYUSH)

Report of the Working Group on AYUSH for the 12th Five-Year Plan (2012-17)

http://planningcommission.gov.in/aboutus/committee/wrkgrp12/health/WG_7_ayush.pdf

63. System Strengthening - AYUSH
64. Research and Development including Medicinal Plants (including National Medicinal Plants Board)
65. Development of AYUSH Industry
66. Funding of NGOs engaged in local health traditions, midwifery practices etc, under NRHM
67. Promotion of AYUSH (National Mission on AYUSH)
68. National Mission on Medicinal Plants
69. Setting up of National Institute of Medicinal Plants
70. Mainstreaming of AYUSH under NRHM

3. Ministry of Chemicals and Fertilizers (MoCF)

Report of the Working Group on Fertilizer Industry for the Twelfth Plan (2012-13 To 2016-17)

http://planningcommission.gov.in/aboutus/committee/wrkgrp12/wg_fert0203.pdf

71. Bio/organic fertilizers

4. Ministry of Coal (MoC)

Report of the Working Group on Coal & Lignite for Formulation of Twelfth Five Year Plan (2012-2017). Outcome Budget 2013-2014. Department Of Commerce Government Of India

http://planningcommission.gov.in/aboutus/committee/wrkgrp12/wg_Coal1406.pdf

72. Conservation and Safety in Coal Mines
73. Environmental Measures & Subsidence Control (EMSC) Schemes
74. Clean Coal Technologies (R & D program)

5. Ministry of Commerce and Industry (MoCI)

Report of the Working Group on Cement Industry For XII Five Year Plan (2012-17)

http://planningcommission.gov.in/aboutus/committee/wrkgrp12/wgprep_cement.pdf

75. Agricultural Products Export Development Authority (APEDA)
76. Marine Products Export Development Authority (MPEDA)
77. Tea Board
78. Coffee Board
79. Rubber Board
80. Spices Board
81. Cashew Export Promotion Council

6. Ministry of Communications and Information Technology (MoCIT)

Cabinet Committee on Infrastructure (CCI) Approved the Establishment of the National Knowledge Network (NKN) At An Outlay Of Rs 5990 Crore, To Be Implemented by NIC over a Period of 10 Years. <http://nkn.gov.in/>

82. National Knowledge Network

7. Ministry of Culture (MoCL)

Report of the Working Group on Art and Culture for XII Five-Year Plan (2012-17)
http://planningcommission.gov.in/aboutus/committee/wrkgrp12/wg_tourist0202.pdf

83. Conservation & Development of movements & Archeological sites by State/UT, colleges & State (28 World Heritage Sites located at present in India are managed by ASI, MoEFCC Ministry of Railways, Government of Rajasthan, etc.

8. Ministry of Development of North Eastern Region (MoDNER)

North Eastern Climate Change Adaption Project [Assisted By German Government and German Bank (Kfw).
<http://www.mdoner.gov.in/Content/12th-Plan-Projected-Outlay>

84. North Eastern Climate Change Adaption Project [assisted by German Government & German Bank-[Kfw]
85. NER Livelihoods Project (World Bank Assisted)

9. Ministry of Drinking Water and Sanitation (MoDWS)

Report of the Working Group on Rural Domestic Water and Sanitation. Twelfth Five Year Plan – 2012-2017
http://planningcommission.gov.in/aboutus/committee/wrkgrp12/wr/wg_indus_rural.pdf

86. National Rural Drinking Water Programmes – Sustainability component
87. National Rural Drinking Water Programmes – Natural calamity component

Report of the Working Group on Urban and Industrial Water Supply and Sanitation for the Twelfth Five-Year- Plan (2012-2017)
http://planningcommission.gov.in/aboutus/committee/wrkgrp12/wr/wg_indu_sani.pdf

88. Nirmal Bharat Abhiyan {Information Education Communication (IEC)}

10. Ministry of Earth Sciences (MoES)

Working Group Document. Earth System Science Organization (ESSO). Twelfth Five Year Plan (2012-17).
http://planningcommission.gov.in/aboutus/committee/wrkgrp12/sandt/wg_mes2905.pdf

89. Atmospheric processes and Modeling and Services - Agrometeorology
90. Ocean observations- Moored buoys, drifting buoys, current meters etc.
91. Ocean observations - Sustained Indian Ocean Biogeochemical and Ecological Research (SIBER) and Geotraces
92. Ocean Science and Services - Ocean information and services
93. Ocean Science and Services - Ocean Research and Modelling
94. Ocean Science and Services - INCOIS -Operations and Maintenance
95. Ocean Science and Services - Marine Living Resources + building + Operation & Maintenance
96. Ocean Science and Services - Coastal Research (ICMAM O&M other related projects, COMAPS)
97. Ocean Science and Services - Drugs from the Sea
98. Ocean Science and Services - Microbial Oceanography
99. Ocean Survey & Mineral Resources - Ocean Survey and Resources(EIA, Metallurgy, Hydrothermal sulfides, Cobal Crust)
100. Ocean Survey & Mineral Resources - Hydrothermal sulfides, Cobal Crust in the Indian Ocean Ridge
101. Ocean Technology (incl. Marine biotechnology, NIOY, Development of Island community
102. Polar Science & Cryosphere
103. Geosciences

104. Earth Sciences - Research, Education, Training and Outreach (incl. Centres of excellence)

11. Ministry of Environment and Forests (MoEF)

Report of Sub- Group - I on Forestry

http://planningcommission.gov.in/aboutus/committee/wrkgrp12/enf/wg_subforestry.pdf

- 105. National Afforestation Programme
- 106. Capacity Development of the JFMCs, Gram Sabha and other Stakeholders
- 107. Green India Mission
- 108. Intensification of the Forest Management
- 109. Satellite based Forest Resource Assessment and Technological based M&E.

Report of the Sub-Group-II on NTFP and their Sustainable Management in the 12th 5- Year Plan

http://planningcommission.gov.in/aboutus/committee/wrkgrp12/enf/wg_subntfp.pdf

110. NTFP - Resource management, Marketing, MSP, CB, IEC, R&D.

Report of the Sub Group III on Fodder and Pasture Management Constituted under the Working Group on Forestry and Sustainable Natural Resource Management

http://planningcommission.gov.in/aboutus/committee/wrkgrp12/enf/wg_subfodder.pdf

111. Mapping of ecologically sensitive grasslands, development of seed/germplasm banks & nurseries of fodder species etc.

Summary of Report of the Sub Group IV on Forestry Institutional & Technology Management Under the Working Group on Forestry and Sustainable Natural Resource Management for The Twelfth Five Year Plan (2012-2017)

http://planningcommission.gov.in/aboutus/committee/wrkgrp12/enf/wg_inst.pdf

112. FSI, WII, ICFRE, IIFM, IIPRTI, IGNFA, DFE, capacity building, technological upgradation. (Grants in-aid to F&WL Institutions)

Report of Sub Group-V on "International Cooperation and Law" Under Working Group on Forestry & Natural Resources Management

http://planningcommission.gov.in/aboutus/committee/wrkgrp12/enf/wg_sublaw.pdf

113. Strengthening of International Cooperation and Law

Report of the Working Group on Wildlife, Ecotourism and Animal Welfare for the 12th Five Year Plan (2012-2017)

http://planningcommission.gov.in/aboutus/committee/wrkgrp12/enf/wg_wild.pdf

- 114. Wildlife Management – Integrated Development of Wildlife Habitats (IDWH)
- 115. Strengthening of Wildlife Division
- 116. Wildlife Institute of India (WII)
- 117. Project Tiger
- 118. Project Elephant
- 119. Ecotourism for Livelihoods
- 120. Animal welfare

Report of the Sub-Group on "Environment" for 12th Five Year Plan

http://planningcommission.gov.in/aboutus/committee/wrkgrp12/enf/wg_envr.pdf

- 121. Environment Monitoring & Governance;
 - a) Pollution abatement,
 - b) R&D for Conservation & Development.,
 - c) Conservation of Natural Resources & Ecosystems,
 - d) Environment Information, Education & Awareness;
 - e) Taj protection,

- f) International Cooperation,
- g) National Coastal Management Programme (NCMP) & 9. National River Conservation Plan (NRCP).

Report of the sub-Group on Climate Change

http://planningcommission.gov.in/aboutus/committee/wrkgrp12/enf/wg_climate3001.pdf

- 122. Solar Mission
- 123. Energy Efficiency Mission
- 124. Sustainable Habitat Mission
- 125. Sustainable Agriculture Mission (MoA – National Mission for Sustainable Agriculture)
- 126. Sustainable Himalayan Eco-Systems
- 127. Strategic Knowledge Mission

12. Ministry of Human Resource Development (MoHRD)

Report of the Working Group on Higher Education for the XII Five Year Plan

http://planningcommission.gov.in/aboutus/committee/wrkgrp12/hrd/wg_hiedu.pdf

- 128. University Grants Commission (multiple schemes including flexi funds)

13. Ministry of Information & Broadcasting (MoIB)

Report of the Working Group on Information & Broadcasting Sector Government. XII Five Year Plan (2012-17)

http://planningcommission.gov.in/aboutus/committee/wrkgrp12/cit/vol1_IB.pdf

- 129. Media Outreach Programme and Publicity for Special Events (PIB)

14. Ministry of Power (MoP)

Report of the Working Group on Power for Twelfth Plan (2012-17)

http://planningcommission.gov.in/aboutus/committee/wrkgrp12/wg_power1904.pdf

- 130. Bio-mass based Renewable Energy

15. Ministry of Panchayati Raj (MoPR)

Report of the Working Group on “Panchayati Raj Institutions and Rural Governance”.

http://planningcommission.gov.in/aboutus/committee/wrkgrp12/wg_pri_rg.pdf

- 131. Rajiv Gandhi Panchayat Sashaktikaran Abhiyan (RGPSA) – Gram Sabha - PESA

16. Ministry of Petroleum and Natural Gas (MoPNG)

Report of the Working Group on Petroleum & Natural Gas Sector for the 12th Five Year Plan (2012-17).

<http://www.indiaenvironmentportal.org.in/files/file/wgreport.pdf>

- 132. ONGC- Mangrove Restoration and Conservation Education Project' at Ankleshwar, ONGC has gone for the continuation of the mangrove plantation at Ankleshwar and Hazira.

17. Ministry of Rural Development (MoRD)

Report of the Working Group on MGNREGA Towards Formulation of the 12th Five Year Plan

http://planningcommission.gov.in/aboutus/committee/wrkgrp12/rd/wgprep_mgnrega.pdf

- 133. Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)

Working Group on Area Programmes for the Formulation of the Twelfth Five Year Plan (2012-2017)
http://planningcommission.gov.in/aboutus/committee/wrkgrp12/wg_areaprog.pdf

- 134. Integrated Action Plan (IAP) for 60 Selected Tribal And Backward Districts
- 135. Hill Areas Development Programme/ Western Ghats Development Programme (HADP/WGDP)

18. Ministry of Science and Technology (MoST)

Report of the Working Group on Science & Technology Human Resource Development for 12th Five Year Plan (2012-17)
http://planningcommission.gov.in/aboutus/committee/wrkgrp12/sandt/wg_hrd.pdf

- 136. S&T, Human Resource and Development (eg. CSIR Laboratories Biological Sciences, ICMR Institutions, DST, DBT etc)

Planning Commission Working Group - Report on Pan India S & T Missions
http://planningcommission.gov.in/aboutus/committee/wrkgrp12/sandt/wg_pan.pdf

- 137. National Mission on Energy and Environment
- 138. Cheap biofuel from biomass
- 139. Remunerative agriculture from low land holdings
- 140. More Crop for Drop scheme for water productivity
- 141. Restoring Soil health (MoA Scheme)
- 142. Climate Change Resilient Agriculture (MoA- DARE Scheme)

Report of Planning Commission-Working Group on Mega Science and Global alliances
http://planningcommission.gov.in/aboutus/committee/wrkgrp12/sandt/wg_mega.pdf

- 143. Observatory for Species Protection

DSIR Twelfth Five Year Plan- Plan Document Summary Including Eleventh Plan Achievements
Department of Scientific & Industrial Research. 2012-2017. Volume - I
http://planningcommission.gov.in/aboutus/committee/wrkgrp12/sandt/wg_csir2905.pdf

- 144. National Knowledge Depository
- 145. National Research Development Corporation (NRDC)

Department of Science & Technology- Working Group Report for the Twelfth Five Year Plan (2012-17)
http://planningcommission.gov.in/aboutus/committee/wrkgrp12/sandt/wg_dst2905.pdf

- 146. National Mission on Bamboo Applications & Mission for Geospatial Application
- 147. Open Source innovation system (National Innovation Foundation Model)
- 148. Modernization of Mapping Organizations (SOI & NATMO)
- 149. Drugs & Pharmaceuticals Research

Report of the Planning Commission constituted Task Force on Synthetic and Systems Biology
Resource Network (SSBRN)
http://planningcommission.gov.in/aboutus/committee/wrkgrp12/sandt/tsk_ssbrn.pdf

- 150. Setting up of the CSIR Institute of Synthetic & Systems Biology (CSIR-ISSB); Establishing Network Centre for Synthetic and Systems Biology; Synthetic and Systems Biology Focal Centres in National Laboratories; ICT Connectivity, Computational Infrastructure, Knowledge ware Development

19. Ministry of Shipping (MoS)

Report of Working Group for Port Sector for the Twelfth Five Year Plan (2012-2017)

http://planningcommission.gov.in/aboutus/committee/wrkgrp12/transport/report/wg_port.pdf

- 151. Environmental measure for infrastructure development of Port base industries(JNPT)
- 152. Development of waste disposal system in JN Port area-JNPT
- 153. Environmental upgradation Schemes - VPT
- 154. Upgradation of Environmental schemes Phase-III - VPT
- 155. Green Port Initiatives

20. Ministry of Statistics and Programme Implementation (MoSPI)

Strategic Plan 2011-16 of Ministry of Statistics and Programme Implementation

http://mospi.nic.in/sites/default/files/main_menu/strategic_plans/Strategic%20Plan_MOSPI_10022011_Final.pdf

- 156. Compilation of Environment and Forest statistics - Compilation of Environment and Forest statistics

21. Ministry of Tourism (MoT)

Report of the Working Group on Art and Culture for XII Five-Year Plan (2012-17)

http://planningcommission.gov.in/aboutus/committee/wrkgrp12/wg_tourist0202.pdf

- 157. Safeguarding and other Protective Measures In the Area of Intangible Heritage and Cultural Diversity (arising out of UNESCO Convention)
- 158. Scheme for Sustaining the Living and Diverse Cultural Traditions of India
- 159. Scheme of Financial Assistance for Publication of Magazines and Journals dedicated to Indian Culture and Heritage
- 160. "Bio-Cultural Diversity, Environment and Sustainable Development"

22. Ministry of Tribal Affairs (MoTA)

Ministry of Tribal Affairs – Programmes/Schemes proposed during the Twelfth Plan (2012-17)

<https://tribal.nic.in/writereaddata/AnnualReport/TwelfthFiveYearPlan2012-17.pdf>

- 161. Market Development for Tribal Produce/ Products
- 162. Grant-in-aid to State Tribal Development Cooperative corporations for MFP operations

23. Ministry of Urban Development (MoUD)

Report of the Steering Committee on Urbanization- Twelfth Five Year Plan (2012-2017)

http://planningcommission.gov.in/aboutus/committee/strgrp12/strrep_urban0401.pdf

- 163. JNNURM (National Capacity Building Scheme (Including Capacity Building For Urban Transport) Estimated By The Working Group On Capacity Building & Rajiv Awas Yojana (Slum Rehabilitation)

24. Ministry of Water Resources (MoWR)

Report of the Steering Committee on Water Resources and Sanitation for Twelfth Five Year Plan (2012-2017)

http://planningcommission.gov.in/aboutus/committee/wrkgrp12/wr/wg_indus_rural.pdf

- 164. Command area development and water management
- 165. River Basin Management
- 166. Ground Water Management and Regulation
- 167. Watershed Development:
- 168. National Rain-fed Area Authority (NRAA)
- 169. Improvement Of Surface Water Data (CWC) - Coastal Management Information System

- 170. Improvement Of Agro-Met Data (IMD)
- 171. Flood Management Programme
- 172. River Management activities and Works Related to Border Areas and UTs
- 173. Flood Forecasting

25. Department of Atomic Energy (DoA)

Department of Atomic Energy – XII Plan Proposals: Report of the Working Group

http://planningcommission.gov.in/aboutus/committee/wrkgrp12/sandt/wg_rnd2905.pdf

- 174. Radiation Technologies and their applications – Nuclear Agriculture for sustainability and societal benefits
- 175. Developing Novel applications of radiation technology for value addition to food & agro commodities

26. Department of Space (DoS)

12th Five Year Plan of Department of Space – Report of the Working Group (WG-14)

http://planningcommission.gov.in/aboutus/committee/wrkgrp12/sandt/wg_dos2905.pdf

- 176. Earth Observation Systems and Atmospheric Science Program – Missions - GISAT(Agri) , Resourcesat (Water) , Cartosat (Biodiversity Res, Geology, Carto rural, Urban, Environment), R& D Satellite , Oceansat (Ocean Biology), RISAT (Agri. Water) SCAT sat (Ocean & Atmosphere)
- 177. Earth Observation Systems and Atmospheric Science - Application initiatives - National Natural Resources Management System (NNRMS) & Remote Sensing Applications
- 178. Integrated Space Technology Services- Village Resource Centres

A scenic view of a mountain range with a winding road and people on a grassy slope in the foreground. The image shows a vast landscape with rolling hills and mountains under a clear sky. In the foreground, a grassy slope is visible with a few people standing and looking at the view. A winding road is visible on the side of a hill in the middle ground.

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