

INTRODUCTION

Gaya Forest Division was first constituted with effect from the 1st June 1952 vide Revenue Department's memo no.-CPF/52-3108R dated the 15th May 1952 with its headquarter at Gaya. It then covered the present five civil districts of Magadh Circle- Gaya, Jehanabad, Nawada, Aurangabad and Arwal. After the reorganization of forest divisions in the State vide Environment and Forest Department, Govt. of Bihar letter no. 3688 dated 22.10.2003, the erstwhile Gaya Forest Division was divided into three Forest Divisions as, Gaya Forest Division comprising of Gaya and Jehanabad Districts, Nawada Forest Division covering Nawada District and Aurangabad Forest Division covering Aurangabad and Arwal Districts.

The total forest area of Gaya Forest Division is now 85321.21 sq. km. spread over in two Districts as:

Sl. No.	Name of District	Geographical Area (ha)	Forest Area (ha)	% of Forest Area
1	Gaya	497600	84212.54	16.92
2	Jehanabad	93200	1108.67	1.19
	Total	590800	85321.21	14.44

The Division is further divided into six Ranges-five in Gaya District as Gaya, Atri, Barachatti, Gurupa and Imamganj and one in Jehanabad District as- Jehanabad. The present Plan will be the first separate Working Plan for Gaya Forest Division.

The past approved Working Plans, Schemes & Revised Working Plans for the management of erstwhile Gaya Forest Division are-

Sl.No.	Writers of the previous Working Plans	Working Plan Period
I	Sri B.N Prasad	1957-58 to 1966-67 extended up to 1974-75
II	Revised W.P. By Sri P. Mishra for Koderma & Rajauli Range	1959-60 to 1968-69 extended up to 1974-75
III	Sri Om Kumar (Khair Working Scheme) for Barachatty and Gurpa Range	In the year 1970-71
IV	Sri B.C Jha (Revised W.P)	1980-81 to 1999-2000

Since 2000 fresh Working Plan could not be prepared. The P. W. P. R. for Gaya Forest Division was prepared by Sri S. S. Chaudhary, I.F.S., the then Conservator of Forests,

Gaya Circle in, 2007 suggesting six Working Circles-as Protection-cum-Soil Conservation WC, Rehabilitation WC, Plantation WC, Extension WC, Agro Forestry WC and Wildlife (Overlapping) WC.

The survey work was started in the month of October 2007 and completed in March 2009. Stock mapping was done in the entire forest area of Gaya Forest Division. 630 Enumeration Plots of size 100m X 100m (=1 ha) were laid in representative forest areas and works of enumeration of trees, study of soil and rocks, different vegetations, etc were done. The data were compiled and distributed into different working circles on the basis of the present crop condition and according to the criteria fixed in preliminary Working Plan.

The data collected and compiled were then distributed amongst the front line staff of the Gaya Forest Division and were asked to verify from the ground realities again. Having several rounds of discussions with the Conservator of Forest, Divisional Forest Officer, Range Officer of Forest, Forester and the Forest guards of the Division, a final distribution of the forest area into different working circles have been proposed in the Plan. The working conditions in the field were also taken into account in distribution of the area into Protection and Plantation Working Circles.

In the draft Working Plan seven main working circles, namely Protection (Overlapping) Working Circle, Soil & Water Conservation (Overlapping) Working Circle, Improvement Working Circle, Rehabilitation Working Circle, Plantation Working Circle, Wildlife Management (Overlapping) Working Circle and Joint Forest Management (Overlapping) Working Circle were proposed. Where the earlier Working Plans emphasized mainly on revenue collection and commercial felling of trees under different Working Circles, no felling series was prescribed in this present Working Plan due to the depleted condition of forests.

To achieve 15% tree cover in the State by 2016-17 a separate chapter on the Management of Trees Outside Forests (TOF) has been prescribed. Khair, Bamboo and other NTFP Overlapping WC from the previous Working Plan was removed from this Plan as their existed no sizable number and quality of these species. However, enrichment plantation of these species were proposed in the Rehabilitation WC and Plantation WC which well help to rehabilitate the forests at the earliest and also provide some revenue to the VFMCs. A chapter on the Management of Bamboo & Other MFP has been described for early enrichment of these species. Miscellaneous Regulations have also been proposed.

On 06.06.2013 a meeting of the State Level Consultative Committee for Working Plan was held in Patna to discuss the draft Working Plan of Gaya Forest Division. The

meeting was chaired by the Principal Chief Conservator of Forests, Bihar. The Regional Chief Conservator of Forests, Eastern Region, GoI, Bhubaneswar was also kind enough to participate in this meeting. In the said meeting it was suggested that-

1. The Protection (O) WC and the Improvement WC should be merged together.
2. NTFP Management (O) WC should exist.
3. A Monitoring and Evaluation system should be proposed for mid term appraisal of the Plan prescriptions.
4. Socio-economic Survey in the vicinity of the forest villages should be done to access their dependency.
5. A study of medicinal plants available in these forests should be made.
6. The data to be updated.

The above suggestions were accordingly complied in the revised Working Plan. NTFP, Medicinal Plants and Fodder Management (Overlapping) WC was proposed. Socio-economic survey in the notified forest villages was done and the report formed part of the Plan. A Monitoring and Evaluation mechanism was also added in the Plan.

On 31.08.2014, second meeting of the State Level Consultative Committee for Working Plan was held in Patna in which it was again decided to have a separate Forest Protection (Overlapping) Working Circle as well as Improvement Working Circle. Accordingly these suggestions have been incorporated in the final Working Plan.

I thank Sri H.K. Roy, B.F.S, the then Forest Working Plan Officer, Forest Working Plan Division, Patna, Sri Alok Kumar, I.F.S. the then Divisional Forest Officer, Gaya Forest Division, Gaya and also the present Divisional Forest Officer of the Division, Sri Neshamani, I.F.S. and their frontline staff for providing different data of the Division and also accompanying in field visits.

I am thankful to Sri S. K. Thakur, I.F.S., the then Conservator of Forests, Working Plan Circle and Sri A. K. Prasad, I.F.S., the present Conservator of Forests, Working Plan Circle, Patna for their guidance. I am also thankful to Sri S. S. Choudhary, I.F.S., the Chief Conservator of Forests, Working Plan, Training & Extension, Patna for his support and technical guidance in preparation of this Working Plan in its present form.

I am very much thankful to Sri B. N. Jha, I.F.S., the then Principal Chief Conservator of Forests, Bihar and Sri B.A. Khan, I.F.S., Principal Chief Conservator of Forests, Bihar for support and guidance in preparing this Working Plan.

At the end I would also like to thank Sri Manish Kumar and Sri Bhavesh, GIS Experts, NIC, Patna centre for extending their help in preparing different maps of the Division. I also thank Sri Surendra Prasad, Assistant Conservator of Forests of the Division for his help in preparing different graphs in the Plan.

P.K. Jaiswal,
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Patna, 15th of September, 2014

WORKING PLAN OF GAYA FOREST DIVISION

(2013-14 to 2022-23)

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**GLOSSARY OF VERNACULAR AND BOTANICAL NAMES OF COMMON
PLANTS OF NAWADA FOREST DIVISION.**

<u>Local Name</u>	<u>Botanical Name</u>	<u>Habit</u>
Arar	<i>Acacia pennata</i>	Climber
Akwan	<i>Calotropis gigantean</i>	Shrub
Amaltas	<i>Cassia fistula</i>	Tree
Amarbel	<i>Cucurbita reflexa</i>	Tree
Amla	<i>Emblica officinalis</i>	Tree
Anjan	<i>Hardwickia binata</i>	Tree
Am	<i>Mangifera indica</i>	Tree
Arjun	<i>Terminalia arjuna</i>	Tree
Asan	<i>Terminalia tomentosa</i>	Tree
Alkusi	<i>Mucuna pruriata</i>	Climber
Amra	<i>Spondias pinnata</i> <i>Syn. Spondias mangifera</i>	Tree
Babul	<i>Acacia Arabica</i>	Tree
Bel	<i>Aegle marmelos</i>	Tree
Beri	<i>Casuarina tomentosa</i>	Shrub
Bans	<i>Dendrocalamus strictus</i>	Bamboo
Bar	<i>Ficus bengalensis</i>	Shrub (parasite)
Banda	<i>Loranthus longifolius</i>	Shrub (parasite)
Bantulsi	<i>Perilla ocimoides</i>	Shrub
Bijasal	<i>Pterocarpus marsupium</i>	Tree
Bariar	<i>Sida cordifolia</i>	Shrub
Bahara	<i>Terminalia belerica</i>	Tree
Ber	<i>Zyzyphus jujube</i>	Shrub
Bharhul	<i>Chloroxylon swietenia</i>	Tree

Bhurkund	<i>Hymenodictyon excelsum</i>	Tree
Bhelwa	<i>Semecarpus anacardium</i>	Tree
Chamror	<i>Ehretia leavis</i>	Tree
Choranth	<i>Heteropogon contortus</i>	Tree
Dhela	<i>Alangium salvifoliam</i>	Large shrub
Dudhlar	<i>Cryptolepis buchanani</i>	Climber
Dhawai	<i>Woodfordia fruticosa</i>	Shrub
Dhautha	<i>Anogeissus latifolia</i>	Tree
Dumar	<i>Ficus qlomerata</i>	Tree
Dithor	<i>Zizyphus oenopila</i>	Climber
Gherrneem	<i>Ailanthus excels</i>	Tree
Gamhar	<i>Gmelina arborea</i>	Tree
Galgal	<i>Cochlospermus religiosum</i>	Tree
Galfuli	<i>Flemingia chappar</i>	Shrub
Gurika	<i>Mitragyna parvifolia</i>	Tree
Jhingam	<i>Lannea coromandelica</i>	Tree
Gaj	<i>Millettia auriculata</i>	Climber
Harre	<i>Terminalia chebula</i>	Tree
Harsingar	<i>Nyctanthes arbortristis</i>	Shrub
Imali	<i>Tamarindus indica</i>	Tree
Jirhul	<i>Indigofera pulchella</i>	Shrub
Jamun	<i>Syzygium cumini</i>	Tree
Khonta	<i>Ixera arborea</i>	Shrub
Khair	<i>Acacia catechu</i>	Tree
Konar	<i>Bauhinia purpura</i>	Tree
Kala siris	<i>Albizia lebbek</i>	Tree
Kachnar	<i>Bauhinia variegata</i>	Tree

Kathmahuli	<i>Bauhinia retusa</i>	Tree
Kajh	<i>Bridelia retusa</i>	Tree
Kanod	<i>Carissa opaca</i>	Shrub
Kend	<i>Diospyros melanoxylon</i>	Tree
Katahi	<i>Flacourtia indica</i>	Large shrub
Karhar	<i>Gardenia turgid</i>	Large shrub
Koraiya	<i>Holorrhena antidysenterica</i>	Large shrub
Khajur	<i>Phoenix acaulis</i>	Shrub
Kusum	<i>Schleichera oleosa</i>	Tree
Kenjhi	<i>Sterculia urens</i>	Tree
Kokur-botur	<i>Vallarisso lanacaa</i>	Shrub
Khus-khus	<i>Vetiveria zizanioides</i>	Grass
Karam	<i>Adina cordifolia</i>	Tree
Kathar	<i>Zizyphus xylopurus</i>	Large shrub
Kumbhi	<i>Careya arborea</i>	Tree
Karla	<i>Cleistanthes collinus</i>	Tree
Kekar	<i>Garuga pinnata</i>	Tree
Larpalas	<i>Butea superb</i>	Climber
Murabba	<i>Agave Americana</i>	Shrub
Mahulan	<i>Bauhinia vahlii</i>	Shrub
Mansondha	<i>Croton oblongifolius</i>	Large shrub
Manfal	<i>Randia dumetorum</i>	Large shrub
Munj	<i>Erianthus munja</i>	Grass
Mahua	<i>Madhuca indica</i>	Tree
Neem	<i>Azadirachta indica</i>	Tree
Piar	<i>Buchanania lanzan</i>	Tree
Palas	<i>Butea monosperam</i>	Tree

Pipal	<i>Ficus religiosa</i>	Tree
Putus	<i>Lantana camara</i>	Shrub
Pandan	<i>Ougenia oggentensis</i>	Tree
Patdhaman	<i>Grewia elastic</i>	Tree
Ratti	<i>Abrus precatorius</i>	Creeper
Ratangarur	<i>Elaeodendron glaucum</i>	Tree
Rori	<i>Mallotus philippinsis</i>	Tree
Ramdatwan	<i>Smilax zeylanica</i>	Climber
Rohan	<i>Soyamida fobrifunqa</i>	Tree
Ratend	<i>Combretum decandrum</i>	Climber
Safedsiris	<i>Albizzia procera</i>	Tree
Satwar	<i>Asparagus recemosus</i>	Shrub
Semal	<i>Salmalia malbarica</i>	Tree
Salai	<i>Boswellia serrata</i>	Tree
Sidha	<i>Lagerstroemia parviflora</i>	Tree
Sisham	<i>Dalbergia sissoo</i>	Tree
Sonapatta	<i>Oroxylum indicum</i>	Tree
Sal	<i>Shorea robusta</i>	Tree
Sagwan	<i>Tectona grandis</i>	Tree
Sinduar	<i>Vitex nogundo</i>	Shrub
Sabai	<i>Euleliopsis binata</i>	Grass
Titbhant	<i>Clorodendrum viscosum</i>	Shrub
Tilai	<i>Wondlandia tinctoria</i>	Shrub
Tar	<i>Borassus flabellifer</i>	Tree
Udal	<i>Sterculia villosa</i>	tree

STATE OF FORESTS IN BIHAR

- Figures at a Glance

Based on interpretation of satellite data (October 2008-March 2009) and Forest/ Trees outside Forest (TOF) Inventory carried out by Forest Survey of India and the key results published in India State of Forest Report 2011, the State of Forest in Bihar is as follows:

I. Geography of the State-

1	Situation	In the eastern part of India bordering Nepal, lying between 24° 14' N – 27° 45' N latitude and 83° 16' E – 88° 30' E longitude, part of Gangetic Plains.
2	Geographical area	94,163 sq. km. (2.86% of the Country)
3	Annual Rainfall	Varies between 1000 – 2000 mm.
4	Mean Annual Temperature	Ranges between 20° C to 28° C
5	Major Rivers	Ganga and Gandak.

II. Bihar in comparison to India and World

Sl. No.	Particulars	World	India	Bihar
1	Geographical Area	14,84,29,000 sq. km.	32,87,263 sq. km. (2.70% of World)	94,163 sq. km. (2.86% of India)
2	Forest & Tree Cover	4,03,30,000 sq. km.	78,287 sq. km.	9,214 sq. km.
3	Percentage	31	23.81	9.79
4	Population	7 Billion	1.21 Billion	103.80 Million
5	Average Forest Area per Person	0.60 Ha.	0.064 Ha.	0.0088 Ha.

III. State of Forests in Bihar in comparison to India

(as per ISFR 2011, area in sq. km.)

Sl. No.	Forest & Tree Cover	India		Bihar	
		Area	%	Area	%
1	Total Geographical Area	3287263	100	94163	100
2	Forest Cover				
2A	Very Dense Forest (VDF) (Density >70%)	83471	2.54	231	0.25
2B	Medium Dense Forest (MDF) (Density 40-70%)	320736	9.76	3280	3.48
2C	Open Forest (Density 10-40%)	287820	8.75	3334	3.54
	Total	90844	21.05	6845	7.27
3	Tree Cover (TOF)	90844	2.76	2369	2.52
4	Total of Forest & Tree Cover	782871	23.81	9214	9.79
5	Scrub Forest (Density <10%)	42177	1.28	134	0.14
6	Non Forest Area	2553059	77.67	84815	90.07

IV. Change in Forest Cover in 2011 Assessment in comparison to that made in 2009

Assessment year	VDF	MDF	OF	Scrub	Non-Forest	Total
2009	231	3248	3325	134	87225	94163
2011	231	3280	3334	134	87184	94163
Change	0	32	9	0	-41	-

V. Legal Status of Forests (Area in sq. km.)

Sl. No.	Reserved Forest	Protected Forest	Unclassified Forest	Total
Area	693	5779	1	6473
%	10.706	89.279	0.015	100

LIST OF COMMON ANIMALS AND BIRDS

The common wild animals found in Gaya Forests Division and adjacent forests are as follows:-

The area comprising the Gautam Budha Wildlife Sanctuary and adjacent forests of Gaya Forest Division were once the best faunal areas in the state during private ownership. The Bhalua area was a favorite Game Reserve of the ex-landlord. Once Tiger and Leopards were also present in old Gaya Forests Division, forming a good hunting resort. But the same have now become extinct from these forests.

Hyena, Sloth bear, Wolf, Wild dog, Wild boar, Sambar, Spotted deer, Nilgai, Hare, etc. have been reported from the forests of the area.

The common birds found in this region are as follows:-

Pea fowl, Jungle fowl, Partridge, Black & Gray quail, Hornbill, Parrot, Dove, etc.

In addition to above, a lot of reptiles- snakes as python and small creatures are also found in the area.

The rivers flowing through this division are not perennial and hence availability of fishes is of not much significance.

SUMMARY OF PRESCRIPTIONS

1. THE TRACT DEALT WITH:

Consequent upon the taking over of all the private forests in 1948, Gaya Forest Sub-division was created in the same year under jurisdiction of the Hazaribagh Division with its headquarters at Gaya. Subsequently in the year 1949, Kawakol Beat of Monghyr Division was transferred to this sub-division. It became a separate range in 1951. A full fledged Gaya Division was created with effect from the 1st June 1952 vide Revenue Department's memo no.-CPF/52-3108R dated the 15th May 1952. In 2003 during reorganization of Forest Divisions in the State, two new forest divisions were carved out of the erstwhile Gaya Forest Division as Aurangabad Forest Division (covering Aurangabad and Arwal Districts) and Nawada Forest Division (covering Nawada District) vide Environment and Forest Department, Govt. of Bihar letter no. 3688 dated 22.10.2003, limiting the area of Gaya Forest Division to Gaya and Jehanabad Districts only. Thus, the forests dealt with in this plan lie within the civil districts of Gaya and Jehanabad only, both under Magadh Division. The total area of the forest of Gaya Forest Division is now 85321.21 ha.

Agriculture is the main source of livelihood. The tract has a continental monsoon type of climate owing to its great distance from the sea. There are three well-marked seasons in the year, namely summer, rains and winter. The heat is dry and piercing and Gaya becomes the hottest place in the State with temperature reaching above 45°C. The average annual rainfall in Gaya district is 1120 mm.

2. THE AREA:

The total geographical area of Gaya and Jehanabad districts and the total forest area of the Gaya Forest Division is as follows:

Forest Area of Gaya Forest Division

Sl. No.	Name of District	Geographical Area (ha)	Forest Area (ha)	% of Forest Area
1	Gaya	497600	84212.54	16.92
2	Jehanabad	93200	1108.67	1.19
	Total	590800	85321.21	14.44

There are six Ranges in the Division- five in Gaya District as Gaya, Atri, Barachatti, Gurupa and Imamganj and one in Jehanabad District as- Jehanabad.

3. THE FORESTS:

The forests in Gaya Forest Division correspond to the 'Tropical Dry Deciduous Forests' as per Champion and Seth's classification of forests. Within this type, local variations are met with, due to variations in nature of soil and topography. Better stocked patches occur in cooler and protected areas on the south-east corner of the Gaya district adjoining the forests of Nawada Forest Division of Bihar and Chatra Forest Division of Jharkhand State.

4. LEGAL STATUS:

The legal status of the forests in the Division is as follows:

Legal Status of Forests

Type of Forest	No. of forest village / Lands	Area in Ha.	Remarks
P.F.	510 + 3P	65090.52	Most of the village forests
	34 + 3P	13308.41	Notified as WLS
	Total – 547	78398.93	
R.F.	5	6396.77	At serial no 1.8.2 and 1.8.3
	1	497.76	Notified as WLS
	Total – 6	6894.53	
U.F.	4	27.75	At serial no 1.8.4
Total	557	85321.21	

5. STATE OF BOUNDARIES:

The total demarcated length is 5511.55 kms and the total number of boundary pillars erected between 2004-05 and 2011-12 is 4334. At plantation sites adjacent to agricultural lands, trench fencing has also been done. The old boundary pillars required to be maintained regularly and at the same time new pillars need to be constructed.

6. RIGHTS AND CONCESSIONS:

The forests of Gaya Forest Division are not burdened with any right except right of way and watercourse. The privileges granted include grazing of cattle and free grant of small timber and firewood.

7. WILDLIFE:

The area comprising the Gautam Budha Wildlife Sanctuary and adjacent forests of Gaya Forest Division were once the best faunal areas in the state during private ownership. The Bhalua area was a favorite Game Reserve of the ex-landlord. Among the wild life once found in these forests were tiger, leopard, hyena, sloth bear, wolf, wild dog, wild boar, sambar, spotted deer, barking deer, nilgai, etc. All animals except tiger are still found in the sanctuary and other adjoining forest areas, though in limited numbers.

8. PAST MANAGEMENT:

Before taken over under the Bihar Private Forest Act, 1947 by the Forest Department, the forests of Gaya Forest Division belonged to various Zamindars. The main estates and the forests belonging to them were as follows:-

<u>Name of Estate</u>	<u>Forests owned by Estates</u>
Amawa	Forests of Gurpa Range
Tekari	Forests of Brachatti Range
Maksudpur	Forests of Ektara, Pathra Parsauni

The past approved Working Plans, Schemes & Revised Working Plans for the management of erstwhile Gaya Forest Division are-

Sl.No.	Writers of the previous Working Plans	Working Plan Period
I	Sri B.N Prasad	1957-58 to 1966-67 extended up to 1974-75
II	Revised W.P. By Sri P. Mishra for Koderma & Rajauli Range	1959-60 to 1968-69 extended up to 1974-75
III	Sri Om Kumar (Khair Working Scheme) for Barachatty and Gurpa Range	In the year 1970-71
IV	Sri B.C Jha (Revised W.P)	1980-81 to 1999-2000

Since 2000-2001 the Working Plan for these forests could not be prepared and the present Working Plan will be the first plan after the reorganization of Gaya forest Division in 2003.

9. AREA OF THE PLAN:

The forest area of this Division is **85321.21 ha** limited to the southern aspect of Gaya District. However, the area of the Plan shall be the entire geographical area of Gaya and Jehanabad districts, covering the forest area as well as the area outside the forests, which forms the bulk of the area and is most suited for increasing tree cover.

10. OBJECTIVES OF MANAGEMENT:

The following main objectives have been fixed for this Working Plan-

A. Long Term Objectives:

- (i) To maintain environmental stability through preservation of the remaining natural forests and restoration of ecological balance
- (ii) To improve the productivity of Forests to meet the essential local needs, especially fuel wood, fodder and small timber for the rural people.
- (iii) Increasing substantially the forest/tree cover through afforestation and social forestry programmes, especially on all degraded and unproductive lands, river and canal sides, and other fallow lands.
- (iv) To ensure scientific management of the Forests.
- (v) To protect the Forests through the co-operation of local communities on the principles of Joint Forest Management.

B. Short term Objectives:

- (i) Improvement of the existing growing stock and its density by reclamation of degraded forests through plantations aided by artificial regeneration.
- (ii) Improvement of soil quality through soil conservation measures.
- (iii) To give special attention to water conservation measures inside the forest area so as to improved moisture regime and water availability.
- (iv) Plantation of suitable species which can meet the local requirements. Bamboo will be given importance for sustainable yield.
- (v) To increase diffusion areas for wild life.
- (vi) Involvement of the local people in the management process through Joint Forest Management.
- (vii) Strengthening of infrastructure of the Division for protection and achieving the above goals.

11. PROPOSED WORKING CIRCLES:

The following Working Circles have been proposed in this Plan-

- i. Protection-cum-Improvement Working Circle.
- ii. Soil & Water Conservation (Overlapping) Working Circle.
- iii. Rehabilitation Working Circle.
- iv. Plantation Working Circle.
- v. Wildlife Management (Overlapping) Working Circle.
- vi. Joint Forest Management (Overlapping) Working Circle.
- vii. NTFP, Medicinal Plants & Fodder Management (Overlapping) Working Circle.
- viii. Forest Protection (Overlapping) Working Circle.

Management prescriptions for following operations have also been given in the Plan

- a. Management of Tree Cover Outside Forests (TOF).
- b. Miscellaneous Regulations.
- c. Monitoring & Evaluation

11.1. Improvement Working Circle

The Improvement Working Circle includes those forest areas which have some rooted stocks and can establish if protected and some silvicultural operations done. This is limited to the hill tops and nala banks in the remote areas. The total area allocated to this WC is 7944.07 ha which accounts for 10% of the total forest area. The main objective of this circle is to protect the existing natural resources. The hills and hillocks which have suffered the most in loss of soil and vegetation are also included in this working circle.

This working circle also covers the areas under inferior miscellaneous growth of poor density. These areas do have potential to convert itself into good forest in comparatively lesser time and with lesser efforts.

11.2. Soil & Water Conservation (Overlapping) Working Circle

Gaya Forest Division falls under the rain shadow zone, there being 1120 mm of normal rains only through out the year. Due to illicit felling and indiscriminate removal of vegetation, the hills and hillocks have suffered heavy erosion. Thus, apart from silvicultural operations, it is necessary to make an appropriate plan of action for improvement of soil and water (moisture) content in the forest area. Hence the entire forest area of **85321.21 ha** of Gaya Forest Division has been kept under this working circle with a target of 10000 ha to be covered in the first five

years of the Plan period. Earthen check dams, boulder check dams, contour trenches and water harvesting dams are also proposed to be constructed.

11.3. Rehabilitation Working Circle

An area of 39617.46 HA (46% of the total forest area) included under Rehabilitation Working Circle is under stocked forests having root stock, but in the bushy stage i.e. rooted wastes or in perpetual sapling stage since long and are not able to grow up and establish into pole crop by itself due to adverse biotic factors and interferences like grazing, fire and unregulated felling. An area of 22500 HA have been proposed to be planted in the first five years of the Plan period. Depending on the success of the schemes and the mid term appraisal, provisions for the next five years will be made.

11.4. Plantation Working Circle

This working circle comprises of **23953.51 ha** (28 % of the total forest area) of barren and eroded plain areas near the foothills where there is no chance of natural regeneration in near future. Being adjacent to the villages, there is immense biotic pressure.

The area can be easily assessed, planted and in the following years sivicultural operations can be done. It also includes those areas where plantations have been done in the past. An area of 10000 ha have been proposed to be planted in the first five years of the Plan period. Depending on the success of the schemes and the mid term appraisal, provisions for the next five years will be made.

11.5. Wildlife Overlapping Working Circle

This will be an overlapping working circle extending over the entire geographical area of the Gaya Forest Division excluding the area of 13806.17 ha which has been notified as Gautam Budh Wildlife Sanctuary vide notification no. S. O. 1485 dated 14 September, 1976 under section 18 of the Wildlife (Protection) Act, 1972 and which will be dealt with the provisions made in its specific Management Plan. This working circle will deal with the conservation and protection measures of the faunal wildlife in the area outside the Sanctuary within the perspectives of Wildlife (Protection) Act, 1972 (Amendment Act 2006). The Divisional Forest Officer, Gaya Forest Division is the ex-officio Wildlife Warden and he will be responsible for the protection, conservation and development of wildlife present in and outside the forest area. The wildlife seen

during enumeration work are neelgai, jackal, wolf, and hare, while others commonly seen are hyena, sloth bear, few bird species and reptiles.

11.6. Joint Forest Management (Overlapping) Working Circle

This Working Circle is constituted with a view to achieve the objectives of the sustainable management based on the principles of participatory approach. As all prescriptions of the earlier working circles are subject to the constitution of the Forest Protection Committees and preparation of Micro-plans, this working circle becomes important for the constitution of different committees, their regulations and functioning, and overall sharing of responsibilities as well as benefits.

The total forest area of Gaya Forest Division is 85321.21 ha spread over 557 notified forest areas as 547 Protected Forests, 6 Reserved Forests and 4 Unclassified Forests having villages in the vicinity of forests. However, only 54 VFMPs have been constituted in the Gaya Forest Division - 19 in Imamganj Range, 18 in Barachatti Range, 10 in Gurpa Range, 3 in Atri Range, 2 each in Gaya and Jahanabad Ranges.

11.7. NTFP, Medicinal Plants & Fodder Management (Overlapping) W Circle

The forests of the Division were once rich in NTFP and medicinal plants, but now has depleted due to heavy biotic pressure. However, there still occurs khair (*Acacia catechu*), bamboo (*Dendrocalamus strictus*), kendu leaves and other NTFP very much scattered here and there in the entire forest area of the Division, but not in workable quantity and quality. The bamboo, to a large extent, occurs in dry mixed forest often associated with Salai on hill tops and occasionally with Sal. Thus, the entire forest area needs special treatment for these species, as protection and enrichment plantations, to establish again so as to meet the bonafide needs of the local people.

10.8 Forest Protection (Overlapping) Working Circle

The forests of the Division are divided into small areas of 1000 acre and less which are further surrounded by a number of villages. There is immense biotic pressure on these forests leading to their degradation and loss of tree cover. Thus, to achieve the objectives of management, the forests need to be protected against grazing, illicit felling, fire, encroachment and also the wildlife offences against the few surviving wild animals.

11.9. Management of Tree Cover Outside Forests (TOF)

In Gaya Forest Division, the geographical area of the two districts Gaya and Jehanabad is 4976 and 932 sq. km. respectively and the forest area being 842.12 and 11.09 sq. km. respectively. Thus, out of the total area of 5908 sq. km. in the two districts, where an area of 853.21 sq. km. is covered with forest, an area of 5054.79 sq. km. lies outside the forested area. This area has to be used for increasing the tree cover, which will not only be helpful to meet the daily requirements of the local people, but also release pressure from the forests and help to improve the environment of the area and conserve biodiversity.

Thus, afforestation works will be done in the entire area of the district, extending plantation of trees on farm lands, road, canal, river and rail sides and on other fallow lands with the objective to increase the tree cover up to 15% in the next five years.

12. PLAN EXPENDITURE & REVENUE:

The present condition of the forests of the Division is highly depleted and not in position to give any revenue in true sense. However, some sale price may be collected from the illegally felled trees/poles, those along the roads and also as compensation receipts. The total expenditure other than establishment, etc. will be Rs. 14707 lakhs only during the Plan period on different proposed plan activities including protection works and infrastructure development.. This is roughly Rs. 2489/- per ha for all the works in area for entire Gaya Forest Division (590800 ha of geographical area of Gaya and Jehanabad) during the next ten years, or say 249/- per ha per year.

13. SOURCE OF FUNDING:

The source of fund for the activities prescribed in the Working Plan will be from-

- i. Forest Development Agency Funds from GOI.
- ii. Plan Funds from GOI & GOB.
- iii. Non-Plan Funds from GOB.
- iv. CAMPA FUND
- v. Employment Guarantee Schemes, as MGANREGA.
- vi. Van Ewam Vanyaprani Sanrakshan Kosh.
- vii. Bamboo Mission.
- ix. 13/14th Finance Commission, etc.