

BSAP-Central India Ecoregion

Chapter V: Action Plan

Strategy I: EXPANDING, IMPROVING KNOWLEDGE OF THE CHARACTERISTICS, USES, THREATS TO, AND VALUES OF BIOLOGICAL DIVERSITY.

Action Plan I: Proposed Actions

a. Natural / Wild Biodiversity inventorying and monitoring

All the concerned Departments, Institutions, NGOs and CBOs are necessarily to be involved in inventorying and monitoring programmes to understand the status of biodiversity, and scope of conservation. This should cover all kinds of biodiversity rich areas with special focus on flora & fauna, agricultural lands, livestock, PAs and CMAs.

Vidarbha:

1. Compilation of Scientific Inventory

a) Forest area specific old records of biodiversity need to be examined and compilation of relevant information to be taken with regard to different forest types and forest species.

Agencies: Forest Department / Forest Survey of India / Universities / Bombay Natural History Society and NGOs/CBOs.

Time: Two years.

Funds: Government of India, State planning budget / university / UGC / UNDP.

Priority: 1

b) Fauna:

Area specific old records, information and undocumented community knowledge is to be collected and examined which should cover vertebrate and non-vertebrate, including micro fauna. It should focus on present status, habitat, threats, protection mechanism, food habits / breeding habits, habitat improvement and other measures required to protect the specie in all areas including forests, grasslands, wetlands, protected areas, FDCM areas, community lands, conservation sites and other government lands.

It is necessary to monitor following flagship species by conducting extensive surveys & identifying their habitats, status, threats and formulating management plan.

1. Tiger
2. Crocodile
3. Indian Gaur (Bison)
4. Indian Wild dog
5. Wolf
6. Great India Bustard
7. Adjutant Stork

8. Sarus Crane
9. Wild Buffalo
10. Lesser florican
11. Slender Loris
12. Herons
13. Otters
14. Leopard
15. Bats
16. Vultures
17. Pisces
18. Turtles / Tortoises
19. Snakes
20. Butterflies
21. Mouse Deer
22. Black Buck
23. Migratory Water Fowls

Agencies: Forest Department / NGOs like Vidarbha Nature Conservation Society, Bombay Natural History Society, Vidarbha Natural History Society, Green Pigeon Nature Club, JFM Committees / Departments of universities/ Zoological Survey of India / Community Based Organization/ Wildlife Institute of India/ Bastar Society for Conservation of Nature/ Adivasi Harijan Kalyan Samittee- Village Asana, Jagdalpur

Time: Two year

Funds: Government of India, State planning budget / University / UGC / UNDP.

Priority 1

2. Identification & Inventory of Bio indicators related to pollution.
Lichens, Orchids, birds, Micro invertebrates, amphibians, reptiles, Fishes, Dragonflies etc.
3. Identification & Inventory of Bio-indicators related to Habitat quality.
Indicators of different habitats like forest, grassland, wetland, agriculture etc.
4. Identification, inventory, and impact assessment of exotic species causing harm to the biodiversity.

Parthenium, Water Hyacinth, Lantana, Grass-carp, Argimone Mexicana, Alternamthpra tenella.
5. Establishment of reference collection like Herbaria, Museums, Photographs, Electronic database.
 - Specimens, Photos, scanned images will be used.
 Agencies for programs at serial no. 2 to 5:
Forest Department / NGOS/ Departments of universities / Zoological Survey of India / NEERI / Community Based Organization.

- Time: Two year
 Funds: Government of India, state planning budget / university / UGC / UNDP.
 Priority: 1
 6 Flora:

The information on floral diversity in Nagpur, Bhandara, Gondia, Chandrapur and Gadchiroli districts of Vidarbha and Bastar region is fragmentary. Only higher plants like Angiosperms have been given attention, while the information regarding lower plant groups like Pteridophytes, Bryophytes and Thallophytes is very meager and far from satisfaction. The lower plant groups are the primary producers, which remained neglected. Attention of academicians is invited for undertaking inventory of these groups through available human resources and concerned stakeholders

- Agencies: Departments of Universities / Botanical Survey of India / NGOs/CBOs.
 Time: Two years
 Funds: Government of India, state planning budget / university / UGCS / UNDP.
 Priority: 1

- 7 Documentation of indigenous varieties of agricultural and horticultural crops, tubers, vegetables etc., their management and utilization. Considering the specific and traditional role of women, landless labour, rural artisans and people from deprived classes; it is necessary to know their present diets and thereafter, suggestions for making balanced diet from locally available food grains, vegetables and fruits.

- Agency: State department of Agriculture & Forest NBPGR, NGOs, Village Forest Protection Committee, Gram Sabha, Self – help groups.
 Time: Medium Term.
 Funds: UNDP / NBPGR/ Zilla Panchayat and state planning budget.
 Priority: 1

8. Documentation on wild relatives of agricultural crops in forest and protected areas, wetlands of Nagpur, Bhandara, Gondia. Chandrapur and Gadchiroli districts.

- Agency: State department of Agriculture & Forest NBPGR, NGOs, Village Forest Protection Committee, Gram Sabha, Self – help groups.
 Time: Medium Term.
 Funds: UNDP / NBPGR/ Zilla Panchayat and state planning budget.

a) Intensive exploration of Bastar crops.

- Documentation of all prevailing land races of upland and lowland paddy, maize, sorghum and minor millets (Kodo, Kutki, Ragi, Sawa, etc), pulses and horticultural crops, oil seeds (niger, toria - short duration less than 60 to 65 days, castor, groundnut), tubers, roselle, sugarcane, banana, cotton various vegetables and fruits.

- The survey and cataloging of different natural enemies associated with crop pests in all 32 blocks of this zone.

Agencies: IGAU, Department of Agriculture, universities, Self-help groups, tribals, women, GramSabha, Manzi/ Matipujari & pay them incentives through Panchayat programme. Information base can be created at village cluster level. Add this information in PBR

Time: 1 year

Funds: State or Central Planning Budget

9. Collection of traditional and cultural information, community knowledge and also eco-friendly scientific and technical information on agro-biodiversity. This information will be stored and protected by Gram Sabhas.

Agency: State department of Agriculture, NGOs, CBOs, Universities.

Time: Three years.

Fund: State department of Agriculture / UNDP / ICAR

10. Inventorying & documentation of traditional land races of cereals, pulses, millets, oil seeds, horticultural crops, tubers, roots, vegetables at village level.

Agency: Gram Sabhas / Gram Panchyats/ Forest Protection Committee.

Time: Two-three years.

Funds: Zilla Panchayat / State Planning budget.

Priority: 2

- 11 Mapping of forest resources of Bastar area to identify various stages and types of forests. Such maps should include information on the areas cultivated and used by tribals as well as the areas left fallow. Regulations guiding cycles of land use within the adivasi tradition should also be understood and encouraged.

Documentation of the status of faunal species in Bastar area such as Ghariyal, Monitor Lizard, Bastar Hill Myna, Great Indian Bustard, Jerdon's Courser, Painted Spur Fowl, Red Spur Fowl, Loris, Saras Crane, Wood Snipe, Four Horn Antelope, Wild Buffalo, Swamp Deer, Tiger, Gaur, Leopard, Otter and other species.

Agencies: Forest Department, Universities, community institutions like Manzi Panchyats, Wildlife Institute of India, NGOs

Time: 2 years.

Fund: State Planning Budget.

Priority: 2

- 12 Documentation and mapping of forest resources, seasonal harvesting calendar, threats etc should be prepared and maintained at village Cluster level.

- Agencies: Community Panchayat, JFM/ VED/ CFM committee, FDA, SHG, CBO may be entrusted responsibility of this work under guidance of NGOs, youths, women and experts, Forest and line govt. departments.
- Time: 2 years
- Funds: Zilla Panchyats / State Planning budget should make financial provisions
- Priority: 2
13. Compilation of information on the status of fish fauna with specific roles of local major fishes like *Wallago Attu*, *Notopterus chitala*, *Rita, spp.* *Bagarius yarelli*, *Mystus spp.* *Barbus spp.* *Mastacembalus spp.* *Labeo calbasu*, *Chela bacaila* and *Anguila bicolour* in Indravati River can be completed with the help of kuruks (fishermen community along Indravati river)
- Agencies: Department of Fisheries and Agriculture, Zonal Agriculture Research Station, Jagdalpur and fishermen of Kuruk and other Maria communities.
- Time: 1 years
- Funds: State Planning Budget
- Priority: 1
14. Documentation and mapping of Sacred groves (Deogudis) as community conservation sites.
- Agencies: Community institutions like mati pujaris, Manzi Panchyats, Forest Departments, Universities.
- Time: 1 years
- Funds: State or Central Planning Budget.
- Priority: 1
15. Continuous monitoring of wild buffaloes for applied research to assist in management; Wildlife Institute of India, Local universities, institutions and competent NGOs should be involved. (This should begin with the Kutru Reserve forest and the Tekametta cluster of wild buffaloes.)
- Time: 1 year
- Funds: State or Central Planning Budget
- Priority: 2
16. Compilation of inventories based at community level.
- a. Indigenous knowledge and traditional-cultural practices of tribals should be tapped, especially the age-old practices of the community in biodiversity conservation related to forest resource management, particularly in medicinal plants, other plants, tubers and fruit trees, sacred trees etc.
 - b. Compilation of inventories at community level like fish, sacred grooves, ponds, sacred trees, fruits, crop genetic diversity involving local people, youths and

children, Panchyats institution, community leaders and school / college students.

- c. Documentation of formal & informal indigenous knowledge related to agrobiodiversity and conservation oriented agricultural practices through well-organized approach.

Agencies: Community & Panchyat institutions, Department of Forest, Agriculture, Tribal Development, Fisheries and Irrigation, Anthropological Survey of India, Universities and Agricultural Universities, NGOs like BASCON, Dharohar, VNCS, Adivasi Harijan Kalyan Samittee, Vikas Mitra, BNHS / WII.

Time: 2 years.

Funds: State or Central Planning Budget.

Priority: 1

17. Identification, evaluation, cataloguing of breeds of cattle and poultry through inventories and document collected information, apart from supplementing with other technical information.

Collection of data / information on all existing descript & non-descript breeds of livestock, related to their status, uses, conservation values, threats & on going protection practices

Agencies: Department of Animal Husbandry and concerned line departments, colleges, research institutions, NGOs and Zilla Panchyats, DANIDA Bastar Project Agency.

Time: 2 years.

Funds: State or Central Planning Budget.

Priority: 2

18. Documentation of sacred trees such as Sulfi (Fish tail palm), Chind (Date palm), Mahua, Bargad, peepal, Aam, Munaga, Kela, Kullu, Gular, Tendu, Ber, Sal, Karanj, Amaltas, Saja, Arjun, Gaddha etc, and the beliefs/practices associated with these trees.

Agencies: Manzi Panchyats, NGOs, Department of Horticulture, and Agricultural Universities

Time: 1 year

Funds: State Budget.

Priority: 2

19. Documentation of indigenous knowledge of the use of biodiversity.

Agencies: NGOs, Universities and community organizations like Forest Protection Committees, Van Dhan Samittees and SHGs etc.

- Time: 1 year
 Funds: Central or State funds.
 Priority: 1
20. Study the biology and ecology of Hill Myna.
- Agencies: State Department of Forest, Gramsabha, local tribals, WII/ZSI.
 Time: Two years.
 Funds: State Budget/ WII/MoEF
 Priority: 1
21. The Survey and investigation of Otters and fresh water crocodile in river Indravati and Sabri.
- Agencies: State Department of Forest, Gramsabha, local tribals, WII/ZSI.
 Time: Two years.
 Funds: State Budget / WII / MoEF
 Priority: 2
22. Identify areas of pollution / biodiversity loss, e.g. impact of mining in Bailadila, poaching of wild animals through Paradh, aquatic macro invertebrates, fishes, birds and lichens.
- Agencies: Departments of Forest, Fisheries, Agriculture, Botanical and Zoological Survey of India, community institutions, universities, Agricultural universities and research institutes, NGOs.
 Time: Two-three years.
 Funds: State Pollution Control Board, Zonal Agricultural Research Station, State Budget.
 Priority: 2
23. Identification and mapping of all natural resources with the help of local people and researchers in **Abujmar hills**.
- Agencies: Ram Krishna Mission, Narayanpur and hill Maria youths.
 Time: Two years.
 Funds: State Planning Budget.
 Priority: 2
- b. Ecosystems Mapping and Status Studies.**
1. Mapping of forest, agricultural habitat to consider continuity, fragmentation, encroachments, mining etc through Satellite imaging and PRA-RRA techniques.
 2. Mapping of aquatic habitat & grasslands through satellite imagery
 3. Inter-habitat Connectivity Status like:
 1. Wild relatives of crops & Protected Areas.
 2. Wild relatives of crops and forest Areas.

3. Wetlands & wild crop relatives.
 4. Habitat of wild animals & agricultural habitat.
 5. Linkages of Protected Areas, Water bodies, grasslands.
4. Mapping of agricultural ecosystems in Vidarbha like dry land, irrigated, pasturelands, support systems like fisheries and habitats of wild relatives of crops.

Agencies for Action no. 1 to 5:

MRSAC / State Department of Agriculture, Forest, Fisheries and Irrigation Maharashtra Pollution Control Board/NBPGR/NBAGR/Zilla Parishad/GramSabha/Village Forest Protection Committee.

Time: Two-three years.

Fund: State Planning Budget / UNDP / ICAR/ Maharashtra Pollution Control Board from their cess account.

Priority: 2

5. At district level collection, screening and identification of traditional crop varieties should be done with the help of women, knowledgeable agriculturists & tribals, youths etc. The same kind of work can be done by the State Department of Agriculturists with the help of plant taxonomist and their supporting staff, who will be skilled in genetic conservation. They should maintain proper documentation of the available information. An utmost care needs to be taken not to displace or devalue the collection, screening, and identification methods of communities themselves, especially of women. Taxonomists should identify samples from taxonomic point of view.

Agencies: Zilla Panchyats / State Department of Agriculture/ Garm Sabha/ Selh Help Groups of women, youths, NGOs/CBOs .

Time: Five years.

Funds: State Planning Budget / ICAR.

Priority: 2

6. In Vidarbha, the university, agricultural department and the Zilla Parishads under the direction and control of NBPGR should undertake the activities like collection and maintenance of germ plasm for each indigenous crop grown in the area.

Time: Mid term.

Funds: NBPGR/State and Central Budget/ICAR

Priority: 2

Involving community members & social institutions like Manzi Panchayat, tribal youths & women, Zilla / block Panchayat, Self Help Groups, JFM/ VED/ Primary Forest Produce Cooperative Society (PFPCS), Gram Sabha & departments like forest, fisheries, irrigation, agriculture, animal husbandry, Forest Development Corporation, Indira Gandhi Agricultural

University and its Zonal research Centers, NBSS & LUP, RSAC, ICRA, colleges and departments of Pdt. Ravishankar University, linked to ongoing programmes.

7. Mapping of agricultural diversity, survey & collection of data needs to be done by the Gramsabhas and trained field workers for:

- Exploration & collection of germplasm.
- Methods for exploration.
- Local land races/ primitive cultivars of the crop.
- Areas rich in biodiversity.
- Specific Quality Characters.
- Areas representing different agro-systems & biomass.
- Wild relatives, endangered species and their habitat.
- Grassland and pasture having importance.
- Fruit trees, their areas & other species of trees grown near agriculture & linked with food security of the people.
- Sericulture, species grown and areas.

Time: Five years.

Funds: State/Central Government/ ICAR

Priority: 1

8. Identify agriculturally important mammals, fish, and microbes for taking up conservation programme for these friendly creatures involving communities and concerned institutions. Set up separate Zonal Conservation Centre for their conservation at Jagdalpur and Nagpur with the help of PKDV and IGAU and renowned NGOs.

Agencies: Department of Agriculture/Fisheries/Universities.

Time: Five years.

Funds: State/Central Government/ ICAR

Priority: ??

9. Priority documentation of genetic variability of native, under utilized species of the food crop, fruits, medicinal aromatic and other economic plants. It should be supplemented with need-based introduction of useful species.

Agencies: Department of Agriculture/Fisheries/Universities.

Time: Five years.

Funds: State/Central Government/ ICAR

Priority: 2

10. There is a lack of any systematic and serious efforts in collection, evaluation and categorizing of the germplasm of the major commercially grown crops.

A Catalogue of germplasm of major medicinal and aromatic plants available with different institutes and gardens in the country should be considered, so that sharing of these materials amongst workers in the fields, will be possible for further research and finding applications.

Agencies: Department of Agriculture/Fisheries/Universities.

- Time: Two years.
 Funds: State/Central Government/ ICAR.
 Priority: ??
11. Bastar region is well known for its thick forests and tribal heritage. Tribal communities living in and around forest areas are the primary source of traditional medicinal knowledge, associated with the use of plant medicines. But unfortunately, over the last few decades, factors such as increasing deforestation, urbanization and socio economic change is adversely affecting the cultural & traditional life (breakup in kin relationship) and with the passage of time, transfer of knowledge to one generation to another has been limited. It is imperative; therefore, that unique knowledge of herbal medicines available with the tribal people should be properly documented, conserved and integrated with modern scientific values before it is lost forever.
- Agencies: ZAR/ BSI/ NGOs / local Vaidus and tribals.
 Time: Mid term.
 Funds: State Planning Budget
 Priority: ??
12. Mapping of forest habitat, aquatic habitat through satellite imagery to consider:
- Habitat status, continuity and fragmentation.
 - Information will be useful to monitor and regulate encroachments.
- Agencies: Regional Remote Sensing Service Center, Nagpur (ISRO), ZARs/ Universities/SACON.
- Time: Mid term.
 Funds: State Planning Budget
 Priority: ??
13. Establish geographical information system for ecological habitats
 *Linkage with Regional Remote Sensing Service Centre (under Government of India, ISRO), Nagpur and MRSAC should be established for using satellite imaginaries for surveying agricultural lands, forestlands, grasslands and wetlands.
- Time: Two years.
 Funds: State Planning Budget.
 Priority: ??
14. Identification of inter- divisional corridors for the passage of wild animals.
- Agencies: District Information Bureau / Remote Sensing Agencies / Department of Forest.
 Time: Two years.
 Funds: From State Planning Budget.
 Priority: ??

c. **Socio – Economic Studies.**

1. Documentation of community conservation sites, traditional conservation practices & sustainable use, such as Nistar forests, Sacred Groves, Bodies (Water bodies) and Sacred Bird like sarus, monkey and trees like mango, ficus, mohua, protection of fishes migrating upstream for spawning, heronaries, parab celebration (worship) of new crop / fruits / flowers, worshipping various tree species as the refuge place by deities, worshipping animals like cobras, monkey, frog, tiger, cow, bull, and protecting bull in the name of god as bio-cultural practices.

Agencies: NGOs / CBOs / Forest Protection Committees / reputed colleges
 Department of Agriculture, Fisheries, Animal Husbandary, Irrigation and Forest / Divisional Biodiversity Conservation & Management Authority.
 Time: Mid term.
 Funds: Central & State Planning Budget / UNDP/ FORD Foundation / UNESCO/Wildlife Institute of India / UGC through colleges.
 Priority: 2

2. Studies on negative forces affecting traditional conservation practices and sustainable use, e.g. Market forces, dilution of conservations oriented traditions, community systems

Agencies: CBOs, NGOs, Department of Welfare, Universities and Anthropological Survey of India.
 Time: One year.
 Funds: State Budget.
 Priority: 2

3. Documentation of traditional practices, use of Biodiversity.

For Example: In **Vidarbha**, use of herbal medicines & food supplements, use of agricultural crops, paddy varieties like Kapursar, Chinnor, Lunchai, bashabhog, Kalikamod, Jirashankar, Bhilajeera, Jawafuli and sorghum varieties like Wani, maldandi, ringani, use of insects & fishes as medicine & food and in **Bastar**, Deogudi (sacred groves), gharbadi, Marhan, Khetmed, pond, sipahi gudi, gotul, kherkakar (Cattle yard), crematory, sacred trees (like mahua, sulfi, sal, tad, chind, saja, bans, gular, kusum, jamun, aam, sagwan)

Agencies: State Department of agriculture, Tribal, Forest / Universities/ Gramsabha/NGOs
 Time: Five years.
 Funds: Central / State Planning Budget/ ICAR/ NBGPR
 Priority: ??

4. Study of traditional practices causing harm to the Biological Diversity like Parad and shifting cultivation in Bastar and East Vidarbha.

Agencies: State Department of agriculture, Tribal, Forest / Universities/
Gramsabha/NGOs
Time: Five years.
Funds: Central / State Planning budget/ ICAR/ NBGPR.
Priority: 2

5. Awareness about IPR & GMO

Involving community members, CBOs, Gram Sabhas, SHGs, youth mandal Panchayat institutes research/scientific institution NGOs, concerned departments.

Time: Continuous process
Funds: State Budget.
Priority: 2

6. Research and studies:

- Crop raiding - site specific studies of problems and remedial measures.
- Wildlife offences - reasons for commission of offences i.e. social, political, economic and administrative etc.
- Effects of forest fires on soil, ground vegetation, tree growth, fauna breeding on biology.
- Effects of grazing on flora, fauna, etc., regeneration with special reference to Ungulates.
- Butterflies and fish.
- Ecological evaluation of PAs.
- Effect of pollution on wildlife, birds.
- Biological diversity of PAs.
- Dependence of local population on PAs for subsistence in the absence of alternative arrangements.
- Evaluation of individual beneficiary schemes and VED schemes with special reference to PA management.
- Illegal trade in wildlife, products and derivatives. Modus operandi adopted.

- Effects of mining.
- Ecological status of wetlands & extraction of aquatic flora from wetlands.
- Effects of the trends in fishing and loss of biodiversity.
- Otters in Itiadoh and Nawegaon Lake in Bhandara district.
- Indian Gaur in Nagzira WLS & Nawegaon NP.
- Tigers in Chandrapur, Nagpur, Gondia, Bhandara, Brahmapuri, Wadasa, Gadchiroli Forest Division and areas under FDCM.
- Threats to the flora & fauna of Protected Areas like Nawegaon National Park, Nagzira & Chaprala Wildlife Sanctuary.
- Local Fish fauna of Vidarbha.

Agencies: State Department of Forest, Industries, Agriculture/ Tribal / Universities/ Gramsabha/NGOs
 Time: Five years.
 Funds: Central / State Planning budget/ ICAR/ NBGPR
 Priority: ??

7. Studies on 1) Social Institutions and Religious leaders of the communities responsible for Biodiversity Conservation and 2) the forces driving out Biodiversity and sustainable practices; e.g. Community Institutions and individuals like Manzi Panchyat / Patel, Matipujari, Perma, Gaita, change in religious beliefs, marketing forces etc.

Agencies: Department of Tribal Development, Forest and Culture, Anthropological Survey of India, Panchayat Institutions, NGOs and CBOs.
 Time; Two-three years.
 Funds: State Dept. of Culture and Tribal Development/ Zilla Panchayat.
 Priority: 2

d. Studies on trends and process driving biodiversity changes

Vidarbha:

1. Assess (sample study) impacts of chemical fertilizers and insecticides on mammals, fishes and microbes in areas like Katol/Kalmeshwar (orange & cotton grown area), Ramtek, Gondia/ Bhandara/ Chandrapur & Gadchiroli (paddy grown area).

Agencies: NEERI, Department of Agriculture, Nagpur University and PDKV.
 Time: One year.
 Funds: State Budget/ ICAR/ Zilla Panchayat.
 Priority: 2

2. Assess impacts of chemical fertilizers and insecticides on human beings, particularly women and children and cattle, flora and fauna. (Sample survey/study).

Agencies: NEERI, Department of Agriculture, Nagpur University and PDKV, NGOs.

Time: One year..

Funds: State Budget/ ICAR/ Zilla Panchayat.

Key Actors: competent NGOs with sound technical knowledge & infrastructure and Agricultural Universities to coordinate this program.

Priority: 2
3. Assess impact of coal mining on Tadoba Andhari Tiger Reserve, ecology of Wardha and Wainganaga rivers in Chandrapur district.

Agencies: Jointly by NEERI, Department of Forest, Nagpur University, NGOs like VNCS/VNHS.

Time: One year.

Funds: State Budget/ WCL.

Priority: 2
4. Assess impact of coal & manganese mining on the agriculture, forests and wild animals in Chandrapur and Nagpur district.

Agencies: Jointly by NEERI, Department of Agriculture, Nagpur University and PDKV, NGOs like VNCS/ Environment Global/ Surajya Pratishthan.

Time: One year.

Funds: State Budget/ MOIL/WCL/ NGOs.

Priority: 2
5. Study the impact of mining on Bailadila hills on flora, fauna, water, land and aquatic ecosystem of the area, socio-economic problems of the tribals affected by this project.

Agencies: Jointly by NEERI, Department of Agriculture, IGAU/NGOs like BASCON and AHKS.

Time: One year.

Funds: State Budget/ State Pollution Control Board/ NMDC.

Priority: 1
6. Assess impact of illicit tree felling & poaching in all Forest Divisions, PAs and FDCM areas.

Agencies: Department of Forest, WII/ VNCS / VNHS/BASCON, AHKS and other NGOs, Nagpur University and PDKV.

Time: One year.

- Funds: State Budget/ ICAR/ Zilla Panchayat.
Priority: ??
7. Assess impact of pollution on water, land (including agriculture) and air in the areas adjoining to industrial sites (e.g.MIDC in Maharashtra and IGC in Chattisgarh).
- Agencies: NEERI, Department of Agriculture, Nagpur University and PDKV, IGAU.
Time: One year.
Funds: State Budget/ ICAR/ Zilla Panchayat/MIDC.
Priority: ??
8. Assess impact of illicit bamboo felling in Nawegaon National Park and Nagzira Wildlife Sanctuary, Gondia/ Bhandara Forest Divisions.
- Agencies: Department of Forest, Nagpur University, VNCS, VFPCs and PDKV.
Time: One year.
Funds: State Budget.
Priority: 1
9. Assess impacts of mining on the biodiversity on hillocks adjoining Nawegaon Lake, aquatic flora and fauna of Nawegaon Lake in Arjuni Morgaon Taluka of Gondia district.
- Agencies: Jointly by NEERI, Department of Forest, Nagpur University, NGO like VNCS.
Time: One year.
Funds: State Budget/ MPCB.
Priority: 2
10. Assess impacts of biotic pressures for requirement of fuel wood, fodder & timber in all Forest Divisions and Protected Areas in Nagpur, Bhandara, Gondia, Chandrapur and Gadchiroli districts.
- Agencies: Department of Forest, Nagpur University, NGOs.
Time: One year.
Funds: State Budget/ ICAR/ Zilla Panchayat.
Priority: 2
11. Assess impacts of degradation of forest cover, excavations of soil and sand from rivers and lakes, water pollution on fishes / prawns & other aquatic fauna and flora in prominent river basins of the area (e.g. valleys of river Wardha, Wainganaga, Pench, Kanhan, Indravati, Pamulgautam, Paralkota, Bawanthadi, Bag, Uma or Human/ Indravati).
- Agencies: NGOs / CBOs/ Universities/ Colleges/ NEERI /MRSAC/ Forest Deptt.

- Time: Two years.
Fund: Central & State Planning Budget.
Priority: 2.
12. Review of the policies and schemes creating adverse impact on biodiversity, related to agriculture, animal husbandry, forest, irrigation, environment, revenue and mining departments.
- Agencies: A joint review committee having representatives from all line departments / NGOs / YASHDA, Pune/ NEERI/ Universities etc.
Time: One year.
Funds: Central & State Planning Budget
Priority: 2
13. Assess impacts of ground fire (in summer for collection of tendu leaves and mahua flowers) on the biodiversity of forests.
- Agencies: Department of Forest / Universities / NGOs / VFPCs.
Time: One year.
Funds: State Budget
Priority: 1
14. Assess impacts of biotic pressures, mining & deforestation in catchment areas of major wetlands in Nagpur, Bhandara and Gondia districts. Ambazari/Gorewada/Futala/Sonegaon in Nagpur city, Water tanks in Ramtek town, Ambala and Ramsagar Tank near Ramtek, Wuna/ Dongartal/Umari/Koradi lakes in Nagpur district, Kham Talav in Bhandara district, Ekodi/Gangajhari/Koka/Zari/Pimpalgaon / Chandpur / Chorkhamara/ Kahaibandh/Bodalkasa/Chandori/Rawanwadi and Rajoli tank in Bhandara & Gondia districts, Ramala in Chandrapur city, Irai, Pangadi, Ghodazari, Asolamendha in Chandrapur district.
- Agencies: NEERI/ MPCB/NGOs like VNCS, VNHS, Green Brigade – Bhandara / Universities/PDKV.
Time: Two years.
Funds: State Budget.
Priority: ???
15. Assess impacts of loss of local crop varieties of Sorghum, Wheat, Millets and Minor millets on the economy of people & nutritional values of their diet.
- Agencies: Department of Agriculture / NGOs / Universities.
Time: One year.
Funds: Central & State Planning Budget
Priority: 2
16. Assess impacts of exotic species of livestock and poultry, fish (introduced through government programmes) and hybrid crop varieties on biodiversity and the economy of rural people.
- Agencies: Department of Agriculture and Livestock / NGOs / Universities.
Time: One year.

- Funds: Central & State Planning Budget
Priority: 2
17. Assess impacts of loss of forest, degradation of surface & ground water, loss of grazing grounds on rural economy (sample survey in one or two districts).
- Agencies: Department of Forest, Water Conservation/NEERI / NGOs / Universities.
Time: Two years.
Funds: Central & State Planning Budget.
Priority: 2
18. Study impact of mono - culture practices & use of exotic species like cashew, teak, eucalyptus, pine acacia auriculiform in high-tech plantation in Bastar (e.g. Maikal hill) and economics of local people (How ecology and their livelihoods are affected).
- Agencies: Department of Forest, Water Conservation/NEERI / NGOs / Universities.
Time: Two years.
Funds: Central & State Planning Budget.
Priority: 2
19. Assessment of the impact of major industrial projects like ESSAR, Bodhghat Hydal Project, and Paper Mill at Tumnar (alleged that an area of Kutru reserve forest is redemarcated and changed suitably to provide land for this project), Nagarnar Iron ore project etc on ecology through involvement of community members, NGOs CBOs, research institutions like Forest Survey of India, Wildlife Institute of India, NEERI, BASCON/ AHKS.
- EIA Reports to be heard by the people in public hearings to frame their recommendations, and/or objections.
- Agencies: CSPCB/ Department of Revenue and Industries/ NEERI / NGOs / Universities.
Time: One year.
Funds: State Planning Budget
Priority: ??
20. Study and review from biodiversity and livelihoods perspective, the state policy on industrial development of Bastar region.
- Agencies: Jointly by Department of Revenue, Industries, Agriculture and Forest, Water Conservation/NEERI / NGOs / Universities.
Time: One year.
Funds: State Planning Budget
Priority: 2
21. Study impact of hybrid crop varieties on local agro-diversity in Bastar.
- Agencies: Department of Agriculture/ IGAU/ /NEERI / NGOs / Universities.
Time: One year.

- Funds: State Planning Budget
Priority: 2
22. Study impact of encroachments on forestland and its status, active forces and interests.
- Agencies: Department of Forest / NGOs / Universities.
Time: One year.
Funds: State Planning Budget
Priority: ??
23. Study impact of exotic cattle and poultry breeds in Bastar and it's cross breeding with local animals.
- Agencies: Department of Animal Husbandary / NGOs / Universities.
Time: One year.
Funds: State Planning Budget
Priority: ??
24. Study impact of smuggling and illicit trade of medicinal plants on ecology and the economics of local people.
- Agencies: Department of Forest/Zilla Panchayat/ NGOs / Universities.
Time: One year.
Funds: Central & State Planning Budget
Priority: 2
25. Study impact of grazing by migratory cattle herds from the State of Gujrat, Rajasthan etc. (e. g. grazing at village Kanera near Kondagaon).
- Agencies: Department of Forest / NGOs / Universities.
Time: One year.
Funds: State Planning Budget
Priority: ??

Strategy II -Enhancing & integrating existing & planned in – situ and ex-situ Biodiversity conservation efforts

- **Extent of area under protected Area Networking is small.**
Finalize legal procedures of existing PA. Implement WII suggestions
- **Bring private & revenue lands, other smaller sites and areas of irrigation, fisheries department under biodiversity management**
- **Necessity to focus on aquatic habitats, non-PA forest areas, grasslands, area under FDCM, Nistar forests, JFM areas**
- **To focus on agricultural, livestock diversity & biocultural diversity**

Action Plan II: Proposed Actions

a. Insitu Conservation

1. Conservation of aquatic bird habitats like

- Bodalkasa, Chorkhamara, Chulban, Chandpur, Itiadoh, Nawegaon Bandh, Rajoli and Siwani Bandh water tank in Gondia & Bhandara district.
- Dongartal, Kandri, Kuhi, Mansar, Mogarkasa, Nawegaon Khairi, Pench, Ramtek, Umrinala, Wen and Wadgaon, lakes in Nagpur district including also Ambazari, Futala,, Gorewada and Sonegaon lakes in Nagpur city.
- Asolamendha, Chargaon, Chandai, Ghodazari, Irai, Pangadi, Naleshwar, Tadoba (TATR) tanks in Chandrapur district.
- Deena (New Allapalli) and Tippgad tanks in Gadchiroli district.

Agencies: Department of Forest, Irrigation & Fisheries through their Joint Coordination Committee, NGOs, local fishermen & villagers.

Time: Continuous process.

Funds: State Budget

Priority: 1

2. Integrated & Participatory Protected Area / Conservation Sites Management (Conservation of Wild life)

Following areas are identified as the biodiversity rich areas, but with various threats. Community participation needs to be promoted in the management of Protected Areas by bringing other non-protected areas under the joint management of state departments /

community members and NGOs. Specific areas are also be identified for conservation of particular specie and habitat.

- **Nawegaon National Park**, Dist: Gondia for all animals of Central India and in particular **Tiger**, Bison, Mouse Deer, Sloth Bear, Slender Loris, Otter, Birds, Wild dogs, Wolf, amphibians, reptiles, Fishes etc.

Agencies: Dy. Conservator of Forests – wildlife, Gondia, Forest Protection Committees of adjoining villages, Gram Sabhas, NGOs.

Time: Continuous process.

Funds: State Budget

Priority: 1

- **Nawegaon Lake, Itiadh Dam** and its catchment area for **aquatic water flora & fauna**.

Agencies: Dy. Conservator of Forests – Wildlife, Gondia; Department of Fisheries and Irrigation / fishermen communities from the adjoining villages / fishermen cooperative societies of the locals / Gram Sabhas

Time: Continuous process.

Funds: State Budget

Priority: 1

- Nawegaon Bandh area for **Heronaries**.

Agencies: Dy. Conservator of Forests – wildlife, Gondia, Young Volunteers of VNCS from adjoining villages & Gram Sabha/ VFPCs and NGOs.

Time: Mid term.

Funds: State Budget

Priority: 1

- **Gidhad Pahadi** near Itiadh Dam, Gondia district for **vultures**.

Agencies: Range Forest Officer – Rajoli / Gondia Forest Division & Dr. Salim Ali Cooperative Society For Protection of Birds, village Paoni Dhabe (Ta. Arjuni Morgaon Dist. Gondia).

Time: Continuous process.

Funds: State Budget

Priority: 1

- **Pratapgad Fort** area in Rajoli range of Gondia district for **bats**.

Agencies: Range Forest Officer – Rajoli / Gondia Forest Division & Dr. Salim Ali Cooperative Society for Protection of Birds, village Paoni Dhabe (Ta. Arjuni morgaon Distt. Gondia), Department of Zoology of Newajabai Hitakarini College, Brahmapuri.

Time: Continuous process.
 Funds: State Budget
 Priority: 1

- **Nagzira Wildlife Sanctuary**, Gondia district for all wild animals, particularly Tiger, Bear, Bison, Wild dogs, eagles, aquatic flora & fauna etc.

Agencies: Dy. Conservator of Forests – wildlife, Gondia, JFM Committees and Gram Sabhas of adjoining villages, NGOs.

Time: Continuous process.
 Funds: State Budget.
 Priority: 1

- Area under Forest Development Corporation of Maharashtra adjoining to Nagzira Wildlife Sanctuary is sensitive as the habitat and corridor for wild animals, particularly Tiger.

Agencies: Dy. Conservator of Forests – wildlife, Gondia & Divisional Manager – FDCM, Bhandara, JFM Committees and Gram Sabhas of adjoining villages.

Time: Continuous process.
 Funds: State Budget
 Priority: 1

- **Sarus crane** habitat around Nawegaon Lake, in Bondgaon, Palandar, Gandhari areas in Arjunimorgaon taluka of Gondia district, Dongartal area in Ramtek Taluka of Nagpur district, Junona area in Chandrapur district

Agencies: Dy. Conservator of Forests – Wildlife (Nagpur, Gondia, Chandrapur), Dy. Conservator of Forests (Gondia, Nagpur, Chandrapur Forest Divisions), JFM committees and Gram Sabhas of adjoining villages, Young Environmentalists of VNCS in Gondia and Nagpur district, Green Pigeon Nature Club (In Chandrapur district)

Time: Continuous process.
 Funds: State Budget.
 Priority: 1

- **Pench Tiger Reserve** in Nagpur district for all wild animals, with special emphasis on Tiger, Bison, Fish fauna, Otters, microfauna & flora of Totladoh dam.

Agencies: Dy. Conservator of Forests-Wildlife (Pench National Park), JFM committees and Gram Sabhas of adjoining villages, NGOs.

Time: Continuous process.
 Funds: Central & State Budget

Priority: 1

- Adjoining areas of Pench Tiger Reserve, like **Salaighat, Mansinghdeo, Kirangi Sarra, Usaripar, and Khapa** as the habitat and corridor for all species of wild animals. These vital areas need to be brought under wildlife management for protecting & monitoring wild animals. The area is under control of Nagpur Forest division & FDCM, Nagpur.

Agencies: Dy. Conservator of Forests – wildlife (Nagpur), Dy. Conservator of Forests (Nagpur Forest division), Divisional Manager – FDCM (Nagpur), JFM Committees and Gram Sabhas of adjoining villages and NGOs.

Time: Continuous process.
Fund: Central & State Budget
Priority: 1

- **Tadoba Andhari Tiger Reserve (TATR)**, with special emphasis on protection and monitoring of Tiger, Bison, Fish fauna in Tadoba, Kolasa and Pangadi Lake, other fauna.

Agencies: Dy. Conservator of Forests – Wildlife (TATR), Dy. Conservator of Forests (Chandrapur & Brahmapuri Forest divisions), JFM committees and Gram Sabhas of adjoining villages.

Time: Continuous process.
Funds: Central & State Planning Budget
Priority: 1

- **Forest area adjoining TATR** particularly for Birds, Tiger, Slender Loris, Mouse Deer, Ratel, Gaur, Wild Dogs, Wolf, Amphibians, Reptiles, Fish etc.

Agencies: Dy. Conservator of Forests – Wildlife (TATR), Dy. Conservator of Forests (Chandrapur & Brahmapuri Forest divisions), JFM committees and Gram Sabhas of adjoining villages.

Time: Continuous process.
Funds: Central & State Planning Budget
Priority: 1

- **Kopella – Asarali areas as Biosphere reserve for wild Buffalo, tiger & other species.**

Agencies: Dy. Conservator of Forests – Wildlife (Allapalli), Dy. Conservator of Forests (Sironcha Forest divisions), local tribals, JFM committees and Gram Sabhas of adjoining villages, NGOs like Lok Biradari Prakalp of Hemalkassa Dist. Gadchiroli.

Time: Continuous process.

Funds: Central & State Budget.
Priority: 1

3. **Establishments of Community Managed Conservation Sites (CMCS):**

The following areas can be identified as the **Community Managed Conservation Sites**, which can be brought under Joint Management of State Department, NGOs and Community Members under the provisions of Wildlife (Protection) Act, 1972 and section 28 & 80 of Indian Forest Act. The Constitution of Protected Areas/ CMCS is not only for the proper management of area specific faunal species and habitat but also for the vital floral species

- Identify forest in Karwa, Shivani Ranges of Chandrapur Forest Division as the habitat for **Tiger**.

Agencies:Dy. Conservator of Forests (Chandrapur), local tribals, JFM committees and Gram Sabhas of adjoining villages.

Time: Continuous process.

Funds: Central & State Budget

Priority: 1

- Areas adjoining Irai dam, near Agarzari & Mohurli in Warora range in Chandrapur district **for Tiger**.

Agencies:Dy. Conservator of Forests (Chandrapur), local tribals, JFM committees and Gram Sabhas of adjoining villages.

Funds: Central & State Planning Budget

Priority: 1

- Darekassa – Salekassa in Gondia district for **Medicinal Plants**.

Agencies: Dy. Conservator of Forests (Gondia), Divisional Manager – FDCM (Gondia), local tribals, JFM committees and Gram Sabhas of adjoining villages, Dept. of Botany of Bhavbhuti Science College, Amgaon, Dist.Gondia.

Time: Continuous process.

Funds: Central & State Budget

Priority: 1

- Ramtek-Nagarjun hills, Deolapar, Pench, Umrer hill in Nagpur district **for Medicinal Plants** in Nagpur district.

Agencies:Dy. Conservator of Forests (Nagpur), JFM committees and Gram Sabhas of adjoining villages, NGOs, Universities.

- Time: Continuous process.
Funds: Central & State Budget.
Priority: 1
- **Satnawari area for plant fossils.**

Agencies: Dy. Conservator of Forests (Nagpur), JFM committees and Gram Sabhas of adjoining villages, NGOs, Universities.

Time: Continuous process.
Funds: Central & State Budget.
Priority: 1
 - **Grasslands near Champa – Umrer & Bazargaon in Nagpur district for Great Indian Bustard.**

Agencies: Dy. Conservator of Forests (Nagpur), JFM committees and Gram Sabhas of adjoining villages, NGOs like VNHS/ VNCS.

Time: Continuous process.
Funds: Central & State Budget
Priority: 1
 - **Dongartal tank in Nagpur district for local species of fish & Sarus Crane.**

Agencies: Dy. Conservator of Forests (Nagpur), State Department of Fisheries, JFM committees and Gram Sabhas of adjoining villages, NGO like VNCS.

Time: Five years.
Funds: Central & State Budget.
Priority: 1
 - **Salaighat – Mansinghdeo, Khubala in Nagpur district for Medicinal Plants & Wild life.**

Agencies: Dy. Conservator of Forests (Nagpur), Divisional Manager – FDCM (Nagpur), JFM committees and Gram Sabhas of adjoining villages.

Time: Continuous process.
Funds: Central & State Budget
Priority: 1
 - **Nagalwadi, Khekaranala in Nagpur district for wild life.**

Agencies: Dy. Conservator of Forests (Nagpur), JFM committees and Gram Sabhas of adjoining villages.
Time: Continuous process.

- Funds: Central & State Planning Budget
Priority: 1
- Gatta and Bhamragarh range of Bhamragarh Forest Division, Kolamarka hills, Kopella, Asarali, Dechlipeta in kamalapur range of Sironcha Forest Division (Dist.Gadchiroli) for **wild Buffalo**. Declare these areas as **Conservation sites for wild buffaloes** and stop all commercial operations.

Agencies:Dy. Conservator of Forests (Sironcha), JFM committees and Gram Sabhas of adjoining villages, tribal groups and NGO like Lok Biradari Prakalp, Hemalkassa (Bhamragad).
Time: Continuous process.
Funds: Central & State Budget
Priority: 1
 - Caves near Darekassa & Salekassa in Gondia district for **Bats and species of swamp habitat**.

Agencies:Dy. Conservator of Forests (Gondia), JFM committees and Gram Sabhas of adjoining villages and NGO like Bhavbhuti Science College, Amgaon (Department of Botany of this college).
Time: Continuous process.
Funds: Central & State Budget.
Priority: 1
 - Koradi – Lake in Nagpur district for aquatic birds.

Agencies: MSEB (Koradi TPS), Dy. Conservator of Forests (Nagpur), NGOs, JFM committees and Gram Sabhas of adjoining villages.
Time: Continuous process.
Funds: Central & State Budget/ MSEB.
Priority: 1
 - Ramdegi in Chandrapur district (Chimur range) for **medicinal plants & floral Biodiversity**.

Agencies: Dy. Conservator of Forests (Brahmapuri), JFM committees and Gram Sabhas of adjoining villages.
Time: Continuous process.
Funds: Central & State Budget
Priority: 1
 - **Conservation of Tiger & Management of Habitat** in Dhanora, Murumgaon & Chatgaon ranges of Gadchiroli Forest Division, Saoli in Brahmapuri Forest Division, Junona Mamala area in Chandrapur, Mogarkassa, Salaighat, Khapa & Mansinghdeo area in Nagpur district, Bedgaon / Korchi in Wadsa Forest Division, Rajoli – Rampayali area

in Gondia Forest Division

All the areas mentioned above are well known habitats of Tiger, which is on the verge of extinction due to various biotic pressures, poaching, inadequate vigilance and protection mechanism. We can protect this animal by counteracting threats through proper protection, management and involvement of local people.

Agencies: Dy. Conservator of Forests (Gadchiroli, Brahmapuri, Chandrapur, Nagpur, Wadsa, Gondia), FDCM (Chandrapur, Nagpur, Gondia and Gadchiroli divisions), JFM committees and Gram Sabhas of adjoining villages, wherever necessary involve NGOs.

Time: Continuous process.
Funds: Central & State Budget
Priority: 1

- **JFM area in Mul range of Chandrapur Forest Division and Khairi hills near Gondia** for biodiversity of flora, fauna and agriculture.

Agencies: Dy. Conservator of Forests (Chandrapur, Gondia), JFM committees and Gram Sabhas of adjoining villages, VNCS, JFWNV and other NGOs.

Time: Continuous process
Funds: Central & State Budget
Priority: 1

4. Establishment & Management of Corridors.

- **Joint Management of corridors for better management of crop diversity in the areas with the involvement of community members, emphasizing the role of women, youths and tribals in the following specified areas:**

- a) Gondia district to Rajnandgaon area of Chhattisgarh State and Seoni / Balaghat areas of Madhyapradesh State for diversity of paddy, millets, oilseeds etc.
- b) Khapa / Saoner area of Nagpur district with Chindrawara district of Madhyapradesh for managing interstate biodiversity corridors for local varieties of millets, oilseeds, Sorghum, vegetables and fruits like oranges.
- c) Area of Chandrapur & Gadchiroli district adjoining to Bastar for paddy, tuber, Millet and oilseed crops.

Agencies: State Department of Agriculture and Forest, IGAU, PDKV, Gram Sabha, women SHGs and Village Forest Protection Committees

Time: Medium term
Funds: Central & State Budget
Priority: 1

- **Joint Management of the corridors for interstate problems:**

Sironcha/Dhanora/ Morumgaon/ Pendhari/ Kamapaur/ Bhamragarh area in. Gadchiroli Distt., Deori/Darekasa/Salekasa area of Gondia Distt. in Maharashtra State and adjoining area of Chhattisgarh and Andhra Pradesh for smuggling of timber, wildlife and body parts and medicinal plants.

Gondia/Tumsar in Bhandara Distt., Saoner/Khapa/Narkhed/ Deolapar (Ramtek) area in Nagpur Distt. in Maharashtra and adjoining areas Madhyapradesh for smuggling of timber, wildlife and body parts and medicinal plants.

Agencies: Department of Agriculture, Forest, Police and Revenue of concerned states, Gram Sabha, women SHGs and Village Forest Protection Committees
 Time: Continuous process
 Funds: Central & State Budget
 Priority: ??

- **Pench Tiger reserve (Nagpur) to Pench tiger reserve (Seoni-MP)**

Areas of Pench Tiger Reserve located in Nagpur district (MS) & Pench Tiger Reserve located Seoni district in Madhya Pradesh State needs proper management of interstate corridors and inter state coordination of Forest Dept. as well as other line departments like Fisheries, Animal Husbandry & Tribal Development, Irrigation, Revenue etc.

Agencies: Director Pench Tiger Reserve, Nagpur & Director, Pench Tiger Project, Seoni (MP), JFM committees and Gram Sabhas of adjoining villages, line Deptts, Collector, NGOs.
 Time: Continuous process
 Funds: Central & State Budget.
 Priority: ??

- **The following thrust areas in Vidarbha need appropriate management, inter state & inter-departmental coordination:**

a) Gondia (MS) to Durg (CS).
 Salekassa, Darekasa (Gondia Dist. MS) & adjoining part of Rajnandgaon dist. (CS), Gondia Forest Division (MS) & adjoining area of Balaghat Forest Division of Madhya Pradesh.

Agencies: Dy. Conservator of Forests, Gondia FD – MS, Rajnandgaon FD– CS and Balaghat FD– (MP), JFM committees and Gram Sabhas of adjoining villages.

Time: Continuous process
 Funds: Central & State Budget.
 Priority: ??

- b) Pench Tiger Reserve, Nagpur Distt. with Chindwarra Forest Division of Madhya Pradesh.

Agencies: Dy. Conservator of Forests Nagpur FD, Director Pench Tiger Reserve (MS) & Conservator of Forests, Chindwarra (MP), JFM committees and Gram Sabhas of adjoining villages, NGOs.

Time: Continuous process
 Funds: Central & State Budget.
 Priority: ??

- c) Tadoba Andhari Tiger Reserve and Chandrapur/ Brahmapuri FD.
 Area of Tadoba Andhari Tiger Reserve with Seoni & Mul Ranges of Chandrapur Forest Division & adjacent areas of Bramhapuri Forest Division, and Gadchiroli Forest division for joint management of wildlife.

Agencies: Dy. Conservator of Forests, Chandrapur FD & Brahmapuri FD, Director, TATR, JFM Committees and Gram Sabhas of adjoining villages, NGOs.

Time: Continuous process
 Funds: Central & State Budget
 Priority: ??

- d) Nawegaon to Bastar (Gondia FD, Gondia FDCM, Wadasa FD, Gadchiroli of Vidarbha to Bastar)

The area comprising of Nawegaon National Park, catchment of Itiadh Dam, Rajoli range, Kurkheda of Gondia Distt. and areas of Wadsa FD of Gadchiroli district is linked to north, west & south part of Bastar (Chattisgarh State).

Agencies: Dy. Conservator of Forests (Gondia FD, Wadsa FD, Nawegaon National Park), Director- Indravati Tiger Reserve, JFM committees and Gram Sabhas of adjoining villages, NGOs on both sides.

Time: Continuous process
 Funds: Central & State Budget
 Priority: ??

- e) Bhamragad & Sironcha of Vidarbha to Bastar.

Gatta & Kamalapur Range of Bhamragarh Forest Division, Asarali & Sironcha Forest Division with Indravati Tiger Reserve of Bastar region can act as an important corridor for Wild buffalo. This animal is on the verge of extinct. This could be the last effort to protect and therefore, it is essential to involve proper

inter - state institutional mechanism of the forest & other line departments with local communities.

Agencies: Dy. Conservator of Forests (Bhamragarh FD - MS), Director, Indravati Tiger Reserve, Bijapur (Bastar - CS) JFM committees and Gram Sabhas of adjoining villages, NGOs on both sides.

Time: Continuous process
Funds: Central & State Budget
Priority: ??

- f) Confluence of Wainganga and Wardha rivers from Chaprala to Sironcha & confluence of Indravati, Pamulgautam and Paral-Kotta river at Bhamragarh to Sironcha needs to be identified for Makaseer & Eel Fish.

Agencies: Dy. Conservator of Forests (Bhamragarh, Sironcha, Allapalli FDs), Wildlife Wing, MS Government, Deptt. of fisheries, JFM committees and Gram Sabhas of adjoining villages.

Time: Continuous process.
Funds: Central & State Budget.
Priority: ??

5. Establishment of irrigation tanks as biodiversity conservation sites

Priority: 1

- Itiadh Dam, Nawegaon Bandh and other lakes in Gondia district.
Agencies: Dy. Conservator of Forests (Gondia FD), Wildlife Department of Irrigation, Joint Director/District Fisheries Officer, JFM Committees and Gram Sabhas of adjoining villages, NGOs.
Time: Continuous process.
Funds: State Budget.
- Lakes located in Deolapar, Bhivapur, Mandhal, Umrer, Ramtek Taluka of Nagpur district.

Agencies: Dy. Conservator of Forests (Nagpur FD), Nagpur Irrigation Circle,
Joint Director of Fisheries, Nagpur, JFM committees and Gram Sabhas of adjoining villages, NGOs.

Time: Continuous process
Funds: State Budget

- Tadoba reservoir in Tadoba-Andhari Tiger Reserve, Nagzira tank in Nagzira Sanctuary, Bodalkasa tank and Nawegaon reservoir in Gondia Dist.

Agencies: Dy. Conservator of Forests (TATR, NWLS, NNP), JFM Committees and Gram Sabhas of adjoining villages.

Time: Continuous process
 Funds: Central & State Budget

- The water bodies in Ramtek and Umrer Talukas, Umri Tank in Saoner Taluka of Nagpur district., Futala, Ambazari & Gorewada tank in Nagpur City.

Agencies: Collector Nagpur, NMC Nagpur, Dy. Conservator of Forests (Nagpur), Nagpur Irrigation Circle, Department of Fisheries, JFM Committees and Gram Sabhas of adjoining villages, NGOs.
 Time: Continuous process
 Funds: Central & State Budget

- Members of fishermen community and Forest Protection Committees are to be involved by giving them rights of management over small water tanks of the area to protect indigenous fish species like Belona (*Channa lecopunctatus*), Botri (*Channa gachua*) Mangur (*Clarius batracus*), Dhadak (*Channa straitus*), Kanas (*Labeo calbasu*), Bam (*Mastocembelus armatus*), Bodh (*Bagarius bagarius*), Bhadar (*Notopterus nototerus*), Kothri (*Barbus stigma*), posthi (*Puntius sarana*), tambu (*Anguilla bengalensis*) etc.

Most of the indigenous species of fish fauna are known as pest controllers. Belona and Kanas feed on Gadh / Midge fly - a paddy pest. Tambu is known for medicinal values.

Agencies: Collector Nagpur, NMC Nagpur, Dy. Conservator of Forests (Nagpur), Nagpur Irrigation Circle, Department of Fisheries, JFM Committees and Gram Sabhas of adjoining villages, NGOs.
 Time: Continuous process
 Funds: Central & State Budget

- Bhandara and Gondia district has nearly about 14,000 water tanks and Nagpur dist. has 218 tanks with water spread areas ranging from 50 to 1300 hectares per tank. These water bodies are vital habitat for aquatic flora and fauna and therefore, there is need of their upkeep and propagation to be conserved.

5% of total water bodies can be safely earmarked for conservation of fauna & flora.

Agencies: Collector Nagpur, NMC Nagpur, Dy. Conservator of Forests (Nagpur), Nagpur Irrigation Circle, Department of Fisheries, JFM Committees and Gram Sabhas of adjoining villages, NGOs.
 Time: Continuous process
 Funds: Central & State Budget

- Water bodies are to be identified in and around Protected Areas and other forest areas for conservation purposes along with introduce institutions and instruments to

motivate people to cooperate and participate.

6. Establishment of area and specie specific tree genetic Conservation sites at following areas (which have rich biodiversity of particular types of the floral species), under the joint management of the state and community members by applying section 28 & 80 of Indian Forest Act or the Provisions of Wildlife (Protection) Act, 1972.

Priority: 1

- a. Mohabali & Sataratum village in Mul range of Chandrapur Forest Division for diversity of plant species, Madanpur in Shivani range of Chandrapur Division for Char, JFM villages in Nagpur, Bhandara & Gondia Forest Divisions.

Agencies: Dy. Conservator of Forests (Chandrapur), JFM committees, Gram Sabhas of adjoining villages and NGOs.

Time: Continuous process

Funds: Central & State Budget

- b. Conservation of trees like mango, tamarind, neem, banyan, ficus as avenue plantations.

Agencies: Deptt. of Social Forestry, Public Works Department, JFM committees and Gram Sabhas of adjoining villages, NGOs and local self Govt.institutions.

Time: Continuous process

Funds: State Budget

- c. Conservation of trees like mango and tamarind at community sites.

Agencies: JFM committees, Gram Sabhas, Gram Panchyats of adjoining villages, NGOs, CBOs.

Time: Continuous process

Funds: Zilla Panchayat / Parishad budget for rewards.

- d. Conservation of trees like Awala, Ber, Char, Jamun, Mango, Sitafal, tembharu.

Agencies: Department of Forest, Horticulture, Deptt. of Botany - Bhavbhuti College, Amgaon (Dist.Gondia) & Agriculture, JFM Committees, Gram Sabhas, Gram Panchyats of adjoining villages, NGOs and CBOs.

Time: Continuous process

Funds: State Budget

- e. Conservation of Tree species in JFM areas.

Agencies: JFM committees and Gram Sabhas and Gram Panchyats of adjoining villages, NGOs, CBOs.

Time: Continuous process

Funds: Pay incentives and rewards / expenses on implementation to the executing agencies through Zilla Panchayat / Parishad programs.

- f. Traditional system of protection of tree genetic resources at Darekassa hill in Gondia district.

Agencies: Dy. Conservator of Forests (Gondia), JFM committees and Gram Sabhas of adjoining villages, NGOs.

Time: Continuous process

Funds: State Budget

7. **Setting conservation sites for Sarus Crane.**

- Identification of suitable habitats and providing legal protection to such areas for conservation of Sarus Crane, particularly at Bodalkasa near Nagzira Wildlife Sanctuary, surrounding area of Nawegaon lake, water bodies at villages Bondgaon-surban, Gandhari in Gondia district and Junona in Chandrapur district and Usaripar in Nagpur district.
- Breeding area to be protected and Sarus population to be monitored. Nest sources to be listed.
- There is a need to involve local people in protection of breeding sites and waterbodies & management of such areas with forest department & NGO's by paying incentives. Biological conditions in wetlands to be preserved.
- If possible, additional sites are to be located in wetland areas of Bhandara, Gondia & Nagpur districts.
- The State Department of Forests should be requested to provide necessary funds submitting proposals to the State Government. The cooperation of public can be obtained by suitably locating village groups / NGOs

Proper awareness, education and orientation is absolutely required for the community members and staff of Government Departments.

Agencies: State Departments of Forest/ Irrigation, should locate appropriate teachers by contacting the Zoological Survey of India / MoEF, Government of India.

Time: Continuous process

Funds: Central/ State budget.

Priority: 1

8. **Establishment of conservation sites for Aquatic Birds.**

- Nawegaon Lake, by bringing under network of P.A. which is presently out of PA. Stop all commercial exploitation of this water body.
- Backwaters of Itiadh Dam near Tidaka should be identified & protected for water birds. Involve local fishermen & other community members in protection & management.

Agencies: Dy. Conservator of Forests (Gondia), JFM committees, Gram Sabhas of adjoining villages, NGOs.
 Time: Continuous process
 Funds: State Budget
 Priority: 1

9. Development of Conservation Areas for Medicinal Plants.

Priority: 1

- In –Situ conservation of medicinal plants at sites based on vegetation type:

Gondia district:

1. Itiadh
2. Khojra Hills (Near Gondia)
3. Nagzira
4. Nawegaon
5. Salekassa/Darekassa.

Nagpur district:

6. Ghatpendhri & Salai Ghat region..
7. PENCH National Park
8. Pilkapar hills.
9. Ramtek-Nagzira hills
10. Satnawari.
11. Umrer region for aquatic biodiversity

Bhandara district:

12. Bhiwkhidki
13. Korambi

Agency: Department of Forest, Universities, local Vaidus, Forest Protection Committees, Gram Sabhas, NGOs.
 Time: Continuous process
 Funds: Central & State Budget, Universities, UGC / UNDP.

10. Establishment of conservation sites for fragmented diversity.

- Identify and protect agro diversity rich sites like Pastures lands adjoining nallahs, agro – diversity rich areas, on community lands or in areas under the control of Department of

Irrigation and Revenue.

Agencies: State Department of Animal Husbandry/ Fisheries/ Forests/ Irrigation/ Revenue and Zilla Panchayat/ local self-government institutions.
 Time: Continuous process
 Funds: Central & State Budget.
 Priority: ??

11. **Protection & management of Deorai / Community Worship places for flora & particularly medicinal plants**

Areas in Deolapar taluka of Nagpur district, Darekassa, Goregaon, Itiadoh, Nagzira, Nawegaon, Rojoli, Salekassain Bhandara & Gondia districts of Vidarbha and Dantewada, Kanker, Bastar districts of Bastar.

Agencies: Department of Forest, Zilla Panchyats/ Parishad and Gram Sabhas / Gram Panchyats.
 Time: Continuous process
 Funds: Pay incentives and rewards to communities through state planning budget and Panchayat.
 Priority: 1

12. **Conservation of Heronaries**

- Water bird breeding sites need protection with involvement of local community members at village Kanholi / Paoni – Dhabetekdi in Arjuni Morgaon Taluka of Gondia district. This area is located near Nawegaon Lake and people of the area are interested in conservation of birds and their habitats.
- Additional sites should be identified in Bhandara/ Nagpur/ Gondia districts and Bastar region and their protection through proper instrument and institution has to be arranged by involving local people.
- Excreta of birds find use as farm manure of good quality. Excretion of heronaries is collected by spreading paddy straw under tamarinds. This activity needs promotion by paying incentives to bird excreta collectors.
- Tamarind trees are mainly used as roosting places; hence their protection with the help of local community members, JFM Committees, SHGs and Youth Groups appears necessary for which Gram Sabhas and Gram Panchyats need special incentives.
- Proper education of village youths and women in nature conservation programs appear necessary.

Agencies: All Line Departments, NGOs, Gram Sabhas, JFM / Forest Protection Committees

Time: Continuous process
 Funds: State Budget.
 Priority: 1

13. **On Farm conservation of indigenous crop varieties:**

Identify cultivators practicing natural farming and growing traditional crop varieties. Engage them in the conservation of indigenous crop varieties.

Executing Agency: NGOs, knowledgeable agriculturists NBPGR and Universities in this program by paying incentives to the cultivators.

Coordinating Agency: State Department of Agriculture, / Universities / NBPGR/
 Botanical Survey of India

Time: Continuous process
 Funds: Central & State Budget, NBPGR, ICAR and UNDP
 Priority: 1

14. **Conservation of wild relatives of crops.**

Identify habitats of wild relatives of all crops in Protected Areas and wetlands and promote conservation of agro – biodiversity

Agency: State Department of Agriculture and Forest / Universities/ NBPGR/
 Botanical Survey of India

Time: Continuous process
 Funds: Central & State Budget, NBPGR, ICAR and UNDP.
 Priority: ??

15. Identify areas and farmers cultivating indigenous crop varieties that are pest resistant and suitable to particular agro climate. Their proper listing is necessary so that interested parties can contact. Pay incentives to those cultivators who have preserved and multiplied such seeds.

Agency: State Department of Agriculture / NGOs/Zilla Panchayat.
 Time: Continuous Process
 Funds: Central & State Budget
 Priority: 1

16. Logically steps to conserve, improve and monitor the livestock diversity will be essential because the breeding programs are capital intensive and the resources do not permit to conserve all the indigenous breeds in the other regions and the study area. In the absence of such information on the Genomic analysis related to the special traits in these breeds, the existing breeding system and improvement will have to be continued with the modification for their conservation.

There are a number of cattle breeding farms including one for Gaolao at Hetikundi in the

country, but the results have been discouraging in some of these indigenous breed farms due to the pressure of improvement in productivity by crossing with superior indigenous breeds. In most of these farms, more or less a closed nucleus breeding system (CNBS) has been adopted which has resulted in stopping the entry of superior germ plasm of the same breed in to that nucleus herd, except for out crossing and situation of extreme in-breeding. Closed Nucleus Breeding Systems, the population in the nucleus herd is bred entirely within the animals of the nucleus herd and only male-germplasm flows in one direction from nucleus to base without any opportunity to introduce outside germplasm (Fig.7).

In Open Nucleus Breeding System (ONBS), replacement stock of male & female animals of nucleus herd may be selected both from the nucleus herd and base population based on the genetic potential & performance (fig. 8 and 9). Introduce Open Nucleus Breeding Systems (ONBS) in all the species including cattle, buffalo, poultry, goat breeds of this region for selection and to avoid limitations of the closed breeding systems. This will require identification of the spread of the breeding tract, so that a suitable farm can be designated as a nucleus herd with government, NGOs and cooperative effort and base population from the region can be specified.

Establish a nucleus herd at village Sawara in Ramtek Taluka of Nagpur district with the help of the experts of Vidarbha Nature Conservation Society. This center will rear nucleus herds of Gaolao cattles, Nagpuri buffalos & Berari goats and indigenous poultry breeds of the area. Village Sawara is situated in a tribal dominated area of Ramtek taluka of Nagpur district. The place is nearly at the center of breeding tract of Gaolao cattle, Berari goat and indigenous poultry breeds, which is spread in Wardha, Nagpur, Bhandara, Gondia districts of Vidarbha region and Chindwara, Baitul and Balaghat districts of Madhyapradesh. Moreover, VNCS is holding land needed for raring nucleus herds of all the three species. It will be easier to monitor all the operations in the field i.e. breeding tract of the species.

Agency: Vidarbha Nature Conservation Society, Nagpur
 Time: Medium term.
 Funds: Approximately Rs. Three Crores are required (refer annexure- for details). This can be arranged through Central / state budget, UNDP/ NBAGR.
 Priority: 1

The operating area of this programme will be that region, those talukas and villages surrounding this nucleus herd that maintains such indigenous breed. Such management is necessary for properly monitoring conservation and maintaining these breeds. Initially, the young sires from good pedigree would be used for improving the nucleus herd and the surplus semen either liquid or frozen could be utilized to breed the heifers and cows of the operational area. At least 30 progenies from each sire should be evaluated for the polygenetic traits selected for conservation and improvement. The sires could be used for breeding of the next generation in the farm and in the operational area. The next batches of sire for progeny testing would come from both nucleus herd and

from the herds of private breeders in the operational area and provide their ranking is superior.

The regular culling of the females of the nucleus herd will be carried out annually and replacement could come from the nucleus herd itself or provided by the private breeders in the operational area. These cycles will be repeated years after years in the nucleus herd and private herds for selection of males and females used for breeding.

Above suggested action plan for open nucleus breeding scheme differs from the existing policy used in both the replacement of sire and hereafter to come from nucleus herd and in operational area. Thus there is a two-way exchange of genetic material from and to the nucleus herd and the private herds.

This system has been found to be supervising and bringing higher rate of genetic progress and also to avoid inbreeding due to a very broad genetic base and large population for this program. Such ONBS should be planned and carried out for Gaolao cattle, Nagpuri buffaloes, and Berari goats.

It is possible that, if the traits selected are not found to be polygenetic and only due to one or two genes in genom analysis, simple individual selection methods would suffice for conservation multiplication and propagation of the genes.

17. Establish Laboratory:

In order to carry out and implement program of ONBS, it is necessary to establish a unit of subject matter specialist including geneticist, reproductive physiologists, nutritionists, and also fully equipped laboratories for the above motioned experts. Such work will be carried out by the VNCS under the guidance of their veterinary experts, Universities and State Animal Husbandry department who can provide resources for these efforts. Combining ONBS with multiple ovulation and Embryo transfer can also help in effective utilization of females of both nucleus herd and herds in the operational area. This system can also help in early selection program, information in full sibs and half sibs cutting the generation interval.

Agency	VNCS, Nagpur.
Time:	Medium term.
Funds:	Rs. Two Crores through state/central planning budget/ UNDP.
Priority:	??

Such insitu conservation program would involve not only the efforts of the institution but also the cooperation of animal / herd owners in the operational area. Therefore it is necessary that they are given orientation and awareness for this program and they should also be involved in the planning stage and the other stages of this program. Registration of identified germplasm goes a long way in sustaining the various genomes in the natural habitat.

18. In-situ conservation of wild buffalo:

- To save the wild buffalo, last effort can be made in the area of Indravati Tiger Reserve, Pamed Wildlife Sanctuary, Bhairamgarh Wildlife Sanctuary and Bhamaragarh Wildlife. Currently the 19 KM stretch of Indravati river extending from below Bendrai gutta hill to Mattimarkka village has a very poor percentage of human population. Protect Wild Buffalo in this area through involvement of local tribals & NGOs.
- In view of the grave danger of extinction as well as genetic degeneration through inter – breeding with domestic buffaloes, the peninsular buffalo perhaps represents the only hope for the survival of the pure strain of wild buffalo, whose genetic significance has been cited earlier. There is, thus, an urgent need to start a special project jointly by the Central Government and State Governments of Chattisgarh and Maharashtra, where under immediate and long term actions need to be provided by the Central Government. But the infra structural, logistical and other support and inputs would have to come from the two states. Subsequently, as the number of buffaloes increase and some movement of wild buffaloes to Orrisa and Andhra Pradesh occur, these states should also be involved.

Involve Forest Department, NGOs like BASCON, Lok Biradari Prakalp - Hemalkassa, Ram Krishna Mission and Wildlife Institute of India, Community Panchyats and Gram Panchyats of all adjoining villages, departments like Fisheries, Agriculture, Irrigation, Revenue and Cultural affairs, eminent community leaders like Mr. Dhruopal singh Shah of Kutru.

Emphasis: Involve community members as the partner in protection and management by paying them incentives.

Time Continuous process.

Funds: State Department of Forest, Central Government, UNDP, Ministry of Environment & Forests, Funding agencies like Ford Foundation, WWF.

Priority: 1

19. Conservation of Bastar Hill myna (*Gracula religosa penninsolaris*) in Kanger Valley National Park through involvement of local tribals, ornithologists, Department of Forest, NGOs like BASCON, HAKS.

(Kanger Valley National Park staff located a small herd of swamp deers. Identification of site for the conservation of Swamp Deer appears necessary for protection of this reported extinct specie.

Agencies: State Department of Forest, NGOs. Involve community members as the partner in protection and management by paying them incentives.

Time Continuous process.

Funds: State and Central Government, UNDP.

- Priority: 1
20. Development of Conservation Sites for Ghariyal in Indravati river and Otters in river Nei.
- Agencies: State Department of Forest, NGOs. Involve community members as the partner in protection and management by paying them incentives.
- Time Continuous process.
- Funds: State Department of Forest, Central Government, UNDP, Ministry of Environment & Forests, Funding agencies like Ford Foundation, WWF.
- Priority: ??
21. Identify Makdi range of Kanker Circle for Biodiversity Conservation of flora, as conservation site of sal forest.
- Agencies: State Department of Forest, NGOs. Involve VFPC, community members as the partner by paying them incentives.
- Time Continuous process.
- Funds: State and Central Government, UNDP.
- Priority: ??
22. **Kurschel Valley (2839.426 ha) , Raoghat, Keshkal valley, Kutru Reserve Forest areas should** be included in the Protected area network for conservation of biodiversity.
- Agencies: Local tribes, Ram Krishna Mission, Narayanpur as the nodal agency, interested Abujmaria youths as the change agents and VFPCs.
- Time: Continuous process
- Funds: State Budget.
- Priority: ??
23. Conservation of medicinal and aromatic plants at Bhaishaon, Pattargaon in Narayanpur range, Marohnar in Chotte Donger range, Cheriberra in Dhaudai range, Changer in Mardapal range, and Basingbar in Sonepur range and Abujmar Hills.
- Agencies: State Department of Forest and NGOs. VFPC, GramSabhas, community members as the partner in protection and management by paying them incentives. In Abujmar area, involve local tribes, Ramakrishna Mission, Narayanpur as the nodal agency and interested Abujmaria youths as the catalysts.
- Time Continuous process.
- Funds: State and Central Government, UNDP.
- Priority: ??
24. Conservation of aquatic biodiversity in tanks and ponds by earmarking at least 25 % of the total tanks under this programme with the involvement of local tribals and other community members, GramSabha/ VFPCs etc.

Agencies: State Department of Irrigation, Fisheries, Revenue and Forests
 Time: Continuous process
 Funds: State Budget. Priority: 1

25. Conservation and management of Dalpath Sagar, Jagdalpur, Dist. Bastar.

Agency: District Collector, City Administration, NGOs, Schools/ Colleges.
 Time: Continuous process
 Funds: State Budget.
 Priority: 1

26. **Management of Sacred Groves (Deogudis)** with the involvement of community members.

Deogudies are the biologically significant areas protected and conserved by the local tribal communities through their age-old traditions, in spite of various biotic pressures. Deogudies are saved because of the religious feeling of tribals.

All such areas needs to be protected from any encroachment in any form and conserved as the “ **Community Conservation Sites for flora and fauna** “. **Locate** and add more areas under this category by conferring legal status under the provisions of Tribal Self-Rule and Indian Forest Act or notify as Community Conserved Areas under WLPA after proposed amendments and recognizing & empowering community management system (like Gramsabha and Matipujari). Make rules of management.

Time: Continuous process
 Funds: State Budget.
 Priority: 1

27. Conservation of fish fauna at Chitracot falls in Kanger National Park through involvement of fishermen of Kuruk tribe.

Agency: Department of Forest/Fisheries/ Kuruk tribals and their Gram Sabha.
 Time: Continuous process
 Funds: State Budget.
 Priority: 1

28. The conservation action plan of Raily **wild silkmoth** has to be drawn at grass-root level (potential forest range) for each season and based on scientific measurement of variables quantum of seed to be released for natural regeneration.

Agency: Department of Forest/ Sericulture, GramSabhas/VFPC / NGOs.
 Time: Continuous process
 Funds: State Budget.
 Priority: ??

29. Wildlife conservation sites at Chotte Donger, Hitameta and Maltar reserves in Narayanpur Forest Division

Agency: Narayanpur FD, VFPCs, tribals, Garm Sabhas, youths etc.
 Time: Continuous process
 Funds: State Budget.
 Priority: ??

30. Identify conservation sites and protect local major fishes like *Wallago attu*, *Notopterus chitala*, *Rita spp.*, *Bagarius yarrelli*, *Mystus spp.*, *Barbus spp.*, *Mastacembalus spp.*, *Labeo calbasu*, *Chela bacaila* and *Anguila bicolor*, *Tor tor/ Tor khudri* in Indravati river with the help of *kuruks* (fishermen community along Indravati river) and department of fisheries.

Agency: Department of Fisheries/ IGAU/ Local people/ GramSabha/VFPCs etc.
 Time: Continuous process
 Funds: State Budget.
 Priority: 1

31. Declare identified 37 perennial pools in the river Indravati as Conservation Sites for shelter of brood stock of fishes in the lean season of river before monsoon as per ZARS, Jagdalpur report.

Agency: Department of Fisheries/ Forest, NGOs, tribals/ local communities.
 Time: Continuous process
 Funds: State Budget.
 Priority: 1

The “ Kuruk”, fishermen of this area, who have knowledge about protection of local fishes, should be involved in the management of these sites by paying incentives. The ZARS, Jagdalpur and the Deputy Director of Fisheries, Jagdalpur can act as the co-partner by providing necessary guidance and financial help.

32. *Pangasius pangasius* fishes may be transplanted for efficient utilization of molluscan fauna.

Agency: Department of Fisheries.
 Time: Continuous process
 Funds: State Budget
 Priority: ??

33. Initiate conservation programme for agriculturally important microorganism and microbes involving communities and by collaborating concerned institutions by setting up separate bureau for their conservation at Jagdalpur.

Agency: Department of Agriculture (CS)

- Time: Continuous process
 Funds: State Budget.
 Priority: 1
34. On farm in – situ conservation of primitive land races of local crops should be promoted through self-help groups involving women, tribals and youths and by paying them incentives and by involving Agricultural Universities, line Government departments, NGOs and farmers.
- Agency: Department of Agriculture, NGOs, tribals/ local communities.
 Time: Long term.
 Funds: State Budget.
 Priority: 1
35. Maintain breeds in their original and natural habitat without any interference so far as their food habits and other conditions are concerned by involving the State Department of Animal Husbandry/ DANIDA – Bastar Integrated Animal Husbandry development Programme, Jagdalpur (by using their expertise and budget) and local Panchayat and community institutes by extending financial support.
- Agency: Department of Animal Husbandary (CS).
 Time: Continuous process
 Funds: State Budget.
 Priority: ??
36. In identified areas, encourage farmers/ people to conserve indigenous cattle and poultry breeds on their farms by providing them incentives. They can generate economic data related to growth, production, traits reproduction parameters and other required information. They should also be involved in development of grazing lands.
- Agency: Department of Agriculture, IGAU, PDKV, NGOs, tribals/ local communities.
 Time: Long term.
 Funds: State Budget.
 Priority: ??
37. Selective breeding of cattle & buffalo (Ongole cattle & Bhadavari buffalo), line breeding in Aseel, Kadaknath poultry breeds & Naghans duck through C.C.B.P and A.I.
- Agency: Department of Animal Husbandary, IGAU, PDKV, NGOs, tribals/ local communities.
 Time: Long term.
 Funds: State Budget.
 Priority: 1
38. Up gradation of non-descript animals with dual-purpose indigenous breed through CCBP. In past such CCBP have been started at Bijapur for Ongole cattle breed.
- Agency: Department of Animal Husbandary, IGAU, PDKV, NGOs, tribals/ local communities.
 Time: Long term.

Funds: State Budget.
Priority: 1

Continue this programme with addition of Gir and Gaolao breed by starting bull-rearing centers at Bijapur, Geedam, Narayanpur, Orcha, Makdi, Jagdalpur, and Dantewada with at least 50 bulls at each center.

Agency: Department of Animal Husbandary, IGAU.
Time: Long term.
Funds: State Budget.

39. Herd registration & formation of breeders association should be done to identify good animals.

Agency: Department of Animal Husbandary, IGAU.
Time: Long term.
Funds: State Budget.
Priority: ??

40. Young sire selection programme and bull-rearing units should be started to preserve young admired seed stock in early age.

Agency: Department of Animal Husbandary, IGAU.
Time: Long term.
Funds: State Budget.

41. Associated herd progeny testing programme (AHPTD) linking the farms/ herds of the same breed may be taken to overcome the inherent constraints of small herd size of organized farms.

Agency: Department of Animal Husbandary, IGAU, PDKV, NGOs, tribals/ local communities.
Time: Long term.
Funds: State Budget.
Priority: ??

42. Conservation and preservation of genetic resources of indigenous poultry breeds like Kadaknath, Aseel, Berad, and Gidadi to maintain the purity.

Agency: Department of Animal Husbandary, IGAU, PDKV, NGOs, tribals/ local communities.
Time: Long term.
Funds: State Budget.
Priority: 1

43. Selective breeding of Ongole cattle breed with abujmar breed. Both breeds are available in Bastar and adjoining areas of Anhdra Pradesh.

Agency: Department of Animal Husbandary, IGAU, PDKV, NGOs, tribals/ local communities.

- Time: Long term.
Funds: State Budget.
Priority: 1
44. Selection of bulls and conservation of selected indices.
- Agency: Department of Animal Husbandary, IGAU, PDKV.
Time: Long term.
Funds: State Budget.
Priority: ??
45. NGOs, Goshalas and CBF could be used for conserving cattle / buffalo breeds.
- Agency: Department of Animal Husbandary, IGAU, PDKV, NGOs, tribals/ local communities.
Time: Long term.
Funds: State Budget.
Priority: ??
46. Establish organized breeding farms for draught cattle breed.
- Agency: Department of Animal Husbandary, IGAU, PDKV..
Time: Long term.
Funds: State Budget.
Priority: ??
47. Identify JFM areas as **Community Conserved Areas** for in-sit and ex-situ conservation of medicinal plants, vital floral species, indigenous breeds of cattle/poultry and crop varieties. Empower JMF committees to manage such areas by paying them incentives.
- Agency: Department of Forest, Agriculture and Animal Husbandary, IGAU, PDKV, NGOs, tribals/ local communities.
Time: Long term.
Funds: State Budget.
Priority: 1
48. Involve community members, JFM Committees, Gram Sabhas, NGOs, SHGs and youths in **Joint Protected Area Management** by paying them incentives and allowing to share stake in the funds generated through eco-tourism, entry fees and NTFP collection in sustainable way
- Agency: Department of Forest, VFPC, GramSabha,, tribals/ local communities.
Time: Continuous process.
Funds: State Budget.
Priority: 1

49. Development of Herbal Gardens for in-situ / ex-situ conservation of medicinal and aromatic plants at identified natural habitats, possibly at Darba, Bijapur, Antagad, Orcha, Narayanpur, Charama

Agency: Department of Forest, IGAU, NGO, VFPCs, tribals/ local communities.
 Time: Long term.
 Funds: State Budget.
 Priority: ??

50. Identifying Sanctuaries, National Parks and Biosphere Reserves for in-situ conservation of medicinal flora involving local community members.

Agency: Department of Forest, NGOs, tribals/ local communities.
 Time: Continuous process.
 Funds: State Budget.
 Priority: 1

b. Ex – Situ Conservation

1. **Establishment of medicinal plant genetic research center suitably in Degraded forest areas.**

Village forest committee / JFM Committee / VED / SHGs to promote medicinal plant cultivation by including trees like Mango, Behadas, Bel, Hirada Jamun, Imli, Kawith and phanas.

Agency: Department of Forest, NGOs, VFPCs, tribals/ local communities.
 Time: Long term.
 Funds: State Budget.
 Priority: 1

2. **Establishment of medicine plant genetic resource center in catchment area of irrigation tank.**

Promote medicinal plant cultivation in catchments areas with involvement of local community members, particularly women, tribal and youths etc.

Agency: Department of Forest, NGOs, VFPCs ,tribals/ local communities.
 Time: Long term.
 Funds: State Budget.
 Priority: 2

3. **Setting medicinal plant genetic resources development centers for conservation of threatened species at:**

- I. Ramtek hills, Pilkapar hills, Pench region, Ghatpendhari – Salaighat region, Satnawari for fossils, Umrer region for aquatic biodiversity in Nagpur district,
- II. Nawegaon & Khaira hills, Darekasa hills, Nagzira WLS, Itiadoh Dam- catchment area, Nawegaon National Park in Gondia district and
- III. Korambi in Bhandara district in collaboration with site-specific in-situ conservation centers.

Agency: State Departments of Forest and Agriculture, RBCMA, NGOs, VFPCs, tribals/ local communities.

Time: Long term.

Funds: State / Central Budget.

Priority: ??

4. **Establishment of genetic resources centers for vital tree species other than medicinal plants;**

like multi -purpose tree species like bija (*Pterocarpus marspium*), haldu (*Adina cardifolia*), Shisam (*Dalbargia latifolia*), Mahua (*Madhuca indica*), Char (*Buchnania lanzam*), Tendu (*Diospyros melonxylen*).

Agency: Department of Forest, NGOs, VFPCs, tribals/ local communities.

Time: Long term.

Funds: State Budget.

Priority: ??

5. **Conservation of ficus, Mango through avenue plantations and as “Amrai”**

- “Amrai” is a grove of different species of mango, traditionally protected by people at community and private places. Impose ban on destruction of mango, ficus, and tamarind trees.

Encourage community to protect diversity through targeted program. Make proper provisions of incentives through Panchayat programmes.

- Ensure selection of mango and ficus species and make it mandatory to PWD, Irrigation and all other line departments involved in construction and maintenance to plant these species on a very extensive scale as avenue plantation.
Involve agriculturist, tribals, other marginalized people in villages, particularly women in planting & protection of those species by paying them suitable incentives.

Agency: State Departments of Irrigation/ Public Works, NGOs, VFPCs, tribals/ local communities.

Time: Long term.

Funds: State Budget.

Priority: ??

6. **Creating and Upgrading Botanical gardens, zoos & Safari Parks.**

- Focus on propagation of rare & endangered local species of flora through Botanical Gardens maintained by department of Horticulture, Agriculture, Departments of gardens & park under Public Work Deptt of state and central Govt., PDKV, IGAU and other universities of the area.

Time: Long term.
Funds: State Budget.
Priority: ??

7. **Creating conservation sites in Industrial areas.**

Restoration of medicinal and other vital flora in Mine Areas.

Immense damage caused to the biodiversity of the area by mining operations. Make it mandatory to Western Coalfields Ltd., Manganese Ore India Ltd. to spare funds for restoration & propagation of endangered floral species at appropriate sites through afforestation programme in their abandoned mines and over-burden dumps at Moorpar, Durgapur in Chandrapur District, Umrer, Borgaon in Nagpur District, Gumgaon & Khapa in Nagpur district.

- Involve NGOs, experts and local communities instead of contractors.

Agency: WCL/ MOIL/ State Department of Forest, Universities, NGOs, VFPCs, tribals/ local communities.
Time: Long term.
Funds: State Budget.
Priority: 1

- 8 Use & up-gradation of zoos & orphanage for conservation of threatened and endangered species of wild animals. Discourage maintaining animals in cages [e.g. Maharaj Bag Zoo, orphanage of the Wild animals at Seminary hills, Nagpur & Nawegaon near Nawegaon National Park.

Agency: State Governments and line departments.
Time: Continuous process.
Funds: State Budget.
Priority: ??

9. Need to set up agriculture crop germplasm centers at grass root level at Nagpur, Ramtek and Kalmeshwar in Nagpur district, Nawegaon bandh for Bhandara & Gondia districts in Vidarbha and Kanker, Orcha, Jagdalpur, Geedam, Darba, Konta and Dantewada in Bastar. *(There are few agencies involved in conservation of germplasm in the area that includes NBPGR – Akola and Amravati centers, ZARS, Jagdalpur.)*

- Agencies: The State Department of Agriculture, PDKV/ IGAU and NBPGR
 Funds: State Budget & Central government sponsored schemes.
 Priority: ??
10. Conservation of indigenous crops varieties of paddy, millets, oilseeds and tubers through establishing agro diversity gardens at Nawegaon bandh / Goregaon in Gondia district and Sakoli, Ramtek in Nagpur district.
- Agency: State department of Agriculture / Agricultural universities and NGOs.
 Time: Long term.
 Funds: State Budget.
 Priority: 1
11. Conservation of seeds of local varieties in gene bank at Nagpur and Jagdalpur.
- Agency: NBPGR/ PDKV/ IGAU.
 Time: Long term.
 Funds: State Budget.
 Priority: 1
12. Ex - situ conservation of indigenous livestock breeds by long-term storage of the germ plasm in the form of semen preservation or preservation of embryo or DNA material for use in prosperity. The germplasm will be sampled from a large population of genetic biodiversity. This could be done
- Agencies: Department of Animal Husbandry and Zilla Panchayat, NBAGR.
 Time: Long term.
 Funds: State Budget.
 Priority: 1
13. The existing wasteland should be used for horticultural, timber species and fuel wood plantations using local species of flora. Plantation of medicinal plants should be encouraged in villages and their marketing should be streamlined.
- Agency: State Departments of Forest, Irrigation and Agriculture, NBPGR/ IGAU.
 Time: Long term.
 Funds: State Budget.
 Priority: ??
14. Agro-biodiversity Parks at Bastar, Jagdalpur, Orcha, Kuhakameta, Darba, Bijapur, Patnam, Konta, Kutru for conservation of local crop varieties.
- Agency: NBAGR/ ZARS/IGAU/ State Department of Agriculture.
 Time: Long term.
 Funds: State Budget.
 Priority: ??

15. Preservation of identified cultivars through herbarium museum, whole plant or parts.

Agency: NBAGR/ ZARS/IGAU/ State Department of Animal Husbandary
 Time: Long term.
 Funds: State Budget.
 Priority: ??

16. The genetic identification and record keeping through IGAU/ NBPGR center at Jagdalpur.

Time: Continuous process.
 Funds: State Budget.
 Priority: ??

17. Setting Cultivated Plant Genetic Resource Centers in representative agro climatic zones at Koyliebeda, Charama, Anatarah, Keshkal, Baderajpur, Oorcha, Narayanpur, Bhairamgarh, Kondagaon, Makri, Pharasgaon, Bakawand, Darbha, Tokapal, Bastnar, Bhoplpatnam, Dantewada, Konta, Sukma, Kuaakonda, and Ussor.

Involve Agriculture University, Indian Agricultural Research Institute, National Agriculture Technology Project, All India Integrated Tuber Research Project, State department of Agriculture, NBPGR

Time: Long term.
 Funds: State Budget.
 Priority: 1

18. Multi Ovulation Embryo Transfer (MOET) is the method for faster propagation of desired germplasm. The Gaolao cows, with higher performance (donor cow), will be selected from Gaolao population, ovulated and each ovum will be fertilized by semen of best quality Gaolao bull in laboratory. The embryo will be transferred to the uterus of surrogated cows; thus, ten to twelve calves will be obtained from one cow. Open Nucleus Breeding Scheme (ONBS) is a composite scheme to fulfill both conservation practices i.e. in-situ and ex-situ. Establish MOET & ONBS schemes at two centers at Jagdalpur and Dantewada for Gaolao and Ongole breeds respectively.

Agencies: Department of Animal Husbandry, IGAU/ZARS, Zilla Panchayat and NBAGR.
 Time: Long term.
 Funds: State Budget.
 Priority: 1

19. Create Disease Free Zone (DFZ) in adjoining areas of National Parks Wildlife Sanctuaries,

Closed Areas, Biosphere Reserve, Reserve and Protected Forest, migratory route of animals and habitat of important animal species. Aims behind this should be as follows:

* Mass vaccination of domestic cattle to prevent contagious diseases from domestic to wild animals and vice versa.

* Assessment of herd immunity and isolation, identification of virus strain in diseased animals. Surveillance and monitoring by strengthening diseases investigation laboratory.

Agencies: Department of Animal Husbandry and Forest.

Time: Continuous process..

Funds: State Budget.

Priority: ??

20. The grazing animals are incriminated of destroying the forest; it is recommended that compartment grazing should be promoted. Some specific areas should be earmarked for this purpose where fodder grasses and trees can be cultivated on common land. This will have two-dimensional advantage: 1) agricultural fields and forests will be prevented from destroying and 2) livestock will get quality fodder to eat. At the same time, stall-feeding practice should be promoted amongst the villagers.

Agencies: Department of Forest, Agriculture, Animal Husbandry, GramSabha, Gram Panchayat.

Time: Continuous process.

Funds: State Budget.

Priority: ??

21. For effective preservation of Aseel / Kadaknath breed of poultry, the present capacity of Govt. Breeding Farm, Jagdalpur may be enhanced from 200 to 5000 birds for each breed. The required parent stock cannot be supplied by existing government farm in country. Therefore, these birds can be purchased from adjoining villages of A. P/ Zabua in small flock sizes. Eventually breeding of the present stock at farms may increase the strength.

Agencies: Department of Animal Husbandry and ZARS.

Time: Long term.

Funds: State Budget.

Priority: ??

22. Migration of animals from neighboring states should be strictly prohibited.

Agencies: State Government / Department of Forest and Revenue.

Priority: ??

23. Establish fodder banks in rural areas.

Agencies: Department of Animal Husbandry and Forest, Gram Sabha/ Gram Panchayat.

Time: Long term.
 Funds: State Budget.
 Priority: ??

24. To overcome the inherent constraints of small herd size of organized farms, Associated Herd Progeny Testing Program (AHPTP). The performance of cows and bulls in the nucleus herd and from sub centers in the field will be recorded and potential of higher production traits will be found. Work of linking the farms / herds of the same breed may be taken up.

Agencies: Department of Animal Husbandry and ZARS.
 Time: Long term.
 Funds: State Budget.
 Priority: ??

c. Regeneration/ Restoration of critical ecosystem

1. Identify villages or communities involved in practices of natural farming and use of indigenous crop varieties and give them recognition as agro – diversity conservation sites. Pay them incentives. Community agro diversity conservation sites can be named as seed village, sorghum village, paddy village, mango village etc.

Priority: 1

2. Promote use of compost, vermicompost, green manure, bio-fertilizers and bio-pesticides etc. Care should be taken to maintain the quality of bio – fertilizers and bioagents. For example: Azotobactor, Rhizobium, Phosphate Soluble Fertilizers (PSF) etc. Pay incentives to the farmers and NGOs / CBOs involved in this programme.

Agency: State Department of Agriculture, Zilla Panchyats/ Parishad and NGOs.
 Time: Long term.
 Funds: State Budget, centrally sponsored schemes.
 Priority: 1

3. Owing to inadequate irrigation, about 80% agricultural area of this region is dependent on dry land agriculture. The package of practices for dry land cultivation and maximum production of the yield should be decided.

The packages like preparation of land as per the contour broad based furrow (BBF) technique, cultivation on contour, matching proper sowing time, crop rotations, mixed inter – cropping and mechanical control etc., should be adopted. This will enable for the conservation of soil and flora by large.

The concept of agro forestry or bund plantation should be adopted and made mandatory in due course of time..

Agency: State Department of Agriculture, Zilla Panchyats/ Parishad and NGOs.

Time: Long term.
 Funds: State Budget, centrally sponsored schemes.
 Priority: 2

4. Water bodies, such as lakes and tanks, are vital source of surface irrigation for agricultural ecosystem. These water bodies need to be protected from silting and desilted if necessary. The tank silt can be used as manure.

Management ethics should consider protection, conservation and regeneration of plants like *Trapa bispinosa* (Shingada), *Nelumbo nucifera* (Lotus) and *Oryza rufepogon* (Deodhan). This would help to protect Deo dhan.

Agency: State Department of Agriculture/Irrigation, Zilla Panchyats and NGOs.
 Time: Long term.
 Funds: State Budget, centrally sponsored schemes.
 Priority: 1

5. Indigenous or local strains having high nutritive value should receive encouragement, e.g. Ramkel and Wani varieties of Jowar, Luchai variety of paddy. Such varieties or strains are on the verge of extinction due to the introduction of high yielding varieties.

Agency: State Department of Agriculture, Zilla Panchyats/ Parishad and NGOs.
 Time: Long term.
 Funds: State Budget, centrally sponsored schemes.
 Priority: 1

6. **Improving Protected Areas Network of Vidarbha Region: Priority: 1**

This can be achieved by up gradation of existing areas, extension of PAs and creation of new Protected Areas.

a) **Up gradation of existing PA:**

Name of PA	Bio-geo Zone	Area (Sq. Kms)	Distt.	Total
Nagzira WLS	Central Plateau	152.81	Gondia	152.81

b) **Extension of present PAs:**

Name of PA	Bio-geo Zone	Existing Area Sq. Kms	Proposed Area Sq. Kms	Total
Nawegaon NP to Rajoli Itiadh area	Central Plateau	133.80	215	348.80
Nagzira WLS	Central Highlands	152.81	238	390.81
Bhamrararh	Eastern Plateau	104.38	296	400.38

WLS	Total	390.99	749	1139.99
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c) Area proposed for new PAs:

Darekasa	Central Plateau	_____	18.33	Gondia
Tipagarh	Eastern Plateau	_____	52.40	Gadchiroli
Kopela	Eastern Plateau	_____	88.00	Gadchiroli
Mansingdeo	Central Plateau	_____	54.97	Nagpur
Total			213.70	

d) Sacred Groves: (Mangal Vane)

District	Place	Area Sq. Kms	Deity
Bhandara	Korambhi	22.00	Kalkai

e) Proposed Community Conserved Areas (CCA) around Tiger Projects:

Name of Tiger Reserve/ District Proposed area as CCA Forest Division

Tadoba/Andhari TR Chandrapur	140.600 Sq. Kms.	Chandrapur Forest Division, within 5 kms radius from existing TATR boundary in Seoni and Mohurli Ranges.
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The total forest area of Chandrapur Division is 922.75 sq.km, comprising 661.00 sq.km. Reserve Forest & 229.24 sq.km. Protected Forest. The area has rich floral and faunal diversity and also a good predator and prey base. This division has common boundary of 140.600 Km. with Tadoba Andhari Tiger Reserve (TATR).

There are about 50 villages, in the vicinity of TATR, in Chandrapur Forest Division. The community members have formed Village Forest Protection Committees in 18 villages and actively involved in the protection and management of forest and wildlife. The efforts of community members have helped to increase in density of both, forest as well as wildlife in the area of around 10 Km. lengths (approx.40, 000 ha.), surrounding TATR. This area should be declared, as **Community Conserved Area** for wildlife under the proposed amendments of WLPA. This would ensure speedy development of habitat for wildlife.

Priority: 1

f) Community Conserved Areas and PAs.

The areas under JFM, wetlands, Sacred Groves, habitats of flora, birds and wild animals managed by the community members in adjoining areas of PA should be declared as Community Conserved Area under WLPA after proposed amendments.

Priority: 1

g) JFM in Integrated PA Management.

JFM can be an effective tool for the proper management of forest and its resources. Form Village Forest Protection Committees in the villages around PAs and involve community members in Joint Protected Area Management by paying them incentives.

Prepare Integrated Protected Area Management Plan addressing all issues including inter-division and fringe area management by involving concerned Forest Divisions, JFM committees, SHGs and NGOs.

Time: Long term.

Funds: State Budget, centrally sponsored schemes.

Priority: 1

d. Reintroduction of threatened species/ habitat.

- 1. Collect threatened / extinct species of sorghum, wheat, oranges, paddy and promote conservation** through a gene bank at divisional level. Set up Gene Bank at Ramtek in Nagpur district. Use land and infrastructure of Betel leaves Research Station PDKV.

The plant taxonomist should be appointed for the collection & Gram Panchyats or Gram Sabha will assist him in this work.

Agency: NBPGR, NGOs, PDKV.

Time: Long term.

Funds: State Budget, NBPGR

Priority: 1

- 2. Conservation** of extinct species of paddy through farmers by paying them incentives.

Agency: NBPGR, NGOs.

Time: Long term.

Funds: State Budget/ NBPGR/ UNDP.

Priority: 1

- 3. The package of practices for the cultivation of threatened medicinal, aromatic and herbal crops should be scientifically streamlined by the agricultural university and state department of agriculture for growing these crops on farm. This will lead to regeneration of these species. Prepare scheme for the protection and regeneration of medicinal plants like Shatawari,**

Ashwagandha, Sarpagandha, Aloevera, Safed musli, Vekhand, Sonmukhi etc provisions for subsidy and post harvest technology.

Agency: State Department of Agriculture, PDKV.
 Time: Long term.
 Funds: State Budget.
 Priority: 1

4. **Swamp Deer/ Hill Mayna/ Wild Buffalo:**

Swamp deer was spotted in Indravati by forest staff and local people; wild buffalos can also be spotted outside Indravati Tiger reserves. Taking the advantage of tribals knowledge and encouraging their involvement, efforts should be directed to save highly endangered Wild Buffalo, Hill Myna and Swamp Deer.

Adjoining area (North – West) of Sendra all along the Indravati River should be included in Protected Area Network / Community Conserved Area.

Agency: State Department of Forest, GramSabha, NGOs..
 Time: Long term.
 Funds: State Budget, NBPGR
 Priority: 1

5. **Habitat of Wild Buffalo:**

*The wild buffalo needs large tracts of undisturbed forests with grassy lands, preferably moist and marshy patches and close proximity of perennial water. This must be ensured in all management applications for the reserved and unreserved forests.

*Certain areas of grasslands that are regularly been used by the wild buffaloes such as those of Netikakler should have to be carefully safeguarded from fire.

Involve people in protection by paying incentives.

Agency: Department of Forest/ Gramsabhas/ Manzi Panchayat.
 Time: Long term.
 Funds: State Budget.
 Priority: 1

6. **Tiger and Leopard Habitat:**

Identified areas like Makdi, Oorcha, Chhote Donger, Abujmar, Kondagaon needs to be considered ideal as the habitat for tiger and leopard.

Agency: Department of Forest.
 Time: Long term.
 Funds: State budget.

Priority: 1

7. Joint Forest Management is considered as a tool for proper forest protection & development. On the same line a special programme for the forest encroachers, related to their economic development, needs to be planned and executed under People's Protected Area Programmes (initiated by CS) or even as the new programme for all Forest Divisions and Protected Areas under forest department.

Promote ex - situ conservation of medicinal, aromatic and commercially important plants in target areas, that can be executed under the 3-tier system of Agro – forestry.(this is an important point and could be useful to develop in some more detail)

Agency: Department of Forest.
 Time: Long term.
 Funds: State budget.
 Priority: 1

8. Conservation of fresh water crocodile (*Crocodylus palustris*) in river Kanger and Kolar.

Agency: Department of Forest.
 Time: Long term.
 Funds: State budget.
 Priority: ??

9. Out of total harvested cocoon production, at least 10% should be released back to their natural habitat to maintain its resource base.

Agency: Department of Sericulture, Forest.
 Time: Long term.
 Funds: State budget.
 Priority: 1

10. Indigenous breeds especially draught cattle like Ongole, Geedam, Abujmari, Gaolao and poultry breeds like Aseel, Kadaknath, Gidadi, Savaj needs to be evaluated, conserved and improved.

Agency: Department of Animal Husbandary.
 Time: Long term.
 Funds: State budget.
 Priority: 1

11. Plantation of threatened floral species through social forestry schemes on fallow lands within or outside Reserved Forest areas. Involve tribals, especially women and youths for the selection of plant species, raising saplings in nurseries, planting and management.

Agency: Department of Forest, Agriculture, Horticulture and IGAU..
 Time: Long term.
 Funds: State budget.

Priority: 1

12. Proper monitoring & control over new agricultural pests other than insect *like snails, slugs, nematodes* etc should be taken up.

Agency: Department of Agriculture and Forest.
 Time: Long term.
 Funds: State budget.
 Priority: ??

13. Consider Riparian zones as very sensitive and fragile and should be protected and properly managed by restricting all harvesting activities.

Agency: Department of Forest.
 Time: Long term.
 Funds: State budget.
 Priority: 1

e. Tackling trans – boundary issues (inter – state and international)

1. Illicit trade of timber, wildlife and their body parts, smuggling of medicinal plants across the interstate boundary, particularly in Sironch area of Vidrabha Region (MS) and adjacent part of Andhrapradesh, Nawegaon-Deori-Gondia area of Vidarbha Region (MS) and Balaghat- Seoni area of Madhyapradesh.

Illicit felling of trees and smuggling from Bastar to Maharashtra, Andhra Pradesh and Orrisa.

Illegal interstate trade of NTFP like Imli (*Tamarindus indica*), Amla (*Emblica officinallis*), Behara (*Terminalia bellerica*), Harra (*Terminalia chebulla*) and various other medicinal plants.

Establish Interstate control and management mechanism by involving concerned state departments.

Agency: State Departments of Forest and Police of MS, CS, MP and AP.
 Time: Continuous process.
 Funds: State budget.
 Priority: ??

2. Migration of wild animals and cattle herds in the areas, Nawegaon-Deori in Gondia district (MS) to Durg (CS), Salakasain Gondia district (MS) – Durg and Rajnandgaon (CS), Korchi-tippagarh in Gadchiroli district (MS)- Kanker area (CS), Bhamragarh in Gadchiroli district (MS) to Bastar, Sironcha (MS) to Andhrapradesh.

Agency: Department of Forest, Revenue and Police of MS, CS and AP.
 Time: Long term.

- Funds: State budget.
Priority: ??
3. Review and amend certain programmes affecting biodiversity conservation efforts, e.g. portable mechanical saw was distributed by Andhra Pradesh government to the rural people and same was used in illicit cutting of trees in Sironcha area of Vidarbha Region (MS). Start interstate dialogue to stop or amend such programmes so that it should not harm biodiversity of adjoining states.
- Agency: State Department of Forest and Revenue of MS and AP.
Time: Long term.
Funds: State budget.
Priority: 1
4. Adjoining area, north – west of Sendra in Bastar, all along Indravati River in Maharashtra should be developed as Protected Area and included in Indravati Tiger Reserve.
- Agency: Department of Sericulture, Forest.
Time: Long term.
Funds: State budget.
Priority: 1
5. The Bhopalpatnam dam site is almost in the center of 19 Km stretch of Indravati River. If the dam is constructed, it may cause destruction of this magnificent habitat of wildlife and tribals. Drop proposal of Bhopalpattanam Dam.
- Agency: State Government of MS/AP and Government of India.
Priority: ??
6. The proposed Bhopalpatnam bridge for the national highway can also pose a grave danger to this same pristine forest as it will enable illegal extraction of timber to be carried to the saw-mills and the railway line in adjacent Andhra Pradesh & Maharashtra.
- Environmental Impact Analysis needs to be carried out to assess threats by involving experts, NGOs and representatives of people. Involve inter-state administrative mechanism to encounter threats.
- Agency: State Department of Public Works and Forest.
Time: Long term.
Funds: State budget.
Priority: ??
7. An area of Maharashtra State adjacent to Indravati Tiger Reserve, Kutru Forest Reserve of Bastar and Kamlapur Range of Bhamragad Forest Division of Gadchiroli dist., Maharashtra State needs to be brought under joint inter-state management due to

movement of Wildlife and Wild Buffalo in particular. This area should be declared as the migratory track of wild buffalo.

- Involve managers of Indravati Tiger Reserve (Bastar) and Bhamragad Forest Division, Maharashtra, Gram Sabhas of the area, Dr. Prakash Amte of Lok Biradari Project, Hemalkasa, Bhamragad and Mr. Dhruplsingh Shah of Kutru to prepare a plan of action.
- Extend Bhamaragarh Sanctuary to 400 Sq. Kms. and form National Park of 300 Sq. Kms. for Wild Buffalo in the same area in Gadchiroli district of Vidarbha region (MS).

Coordinating Agency: State Department of Forest CS and MS.
 Time: Long term.
 Funds: State budget.
 Priority: 1

f. Related programmes to strengthen Biodiversity Conservation

1. Prophylactic inoculation is done sporadically due to the Supreme Court orders. This must be more regular and widespread.

Agency: Department of Forest and Animal Husbandry..
 Time: Long term.
 Funds: State budget.
 Priority: ??

2. Free fishing in river needs to be checked through community involvement .The Tribal Panchayat, Manzi, Matipujari, women folks are the potential social components of the society, who can be entrusted the job of control over free fishing.

Agency to coordinate: Department of Fisheries and Forest.
 Time: Long term.
 Funds: State budget.
 Priority: ??

3. Impose restrictions on use of oversize mesh of fishing nets and formulate rules and regulations. Monitor proper use of fishing nets A nominal license fee is essential to have control on indiscriminate fishing, except for local tribals.

Agency: Department of Fisheries.
 Time: Continuous process.
 Funds: State budget.
 Priority: ??

4. Establish fish farm with every reservoir for local fish fauna.

Agency: Department of Fisheries, fishermen communities like Kuruks, Dhiwar and their cooperative societies, GramSabhas.

- Time: Long term.
 Funds: State budget.
 Priority: ??
5. Larger reservoir are less productive in fishery sense and therefore a series of small dam shall be made so that lesser will be the submergence resulting into minimum problems and higher fish productions through better management. A series of dams will benefit a sizable number of families all along the periphery. Involve local community in this programme.
 Agency: Department of Irrigation, Zilla Panchayat and Fisheries.
 Time: Long term.
 Funds: State budget.
 Priority: ??
6. The population of predatory fishes viz. *Mystus* spp., *Channa* sp., *Wallago attu*, *Notopterus* spp. will dominate other fish species. Effective control over these species and other predatory fishes is imperative for building up a population of fishes feeding on lower food chains there by attaining quick growth.
 Agency: Department of Fisheries.
 Time: Continuous process.
 Priority: ??
7. In Bastar, settlers from other states encroach upon the areas of tribals. They harvest fish ignoring conservation practices. They prevent local tribals to fish & therefore local inhabitants of the area could not keep control over fish management in their water resources.
 Impose ban on such settlers & any other commercial interests to operate in river, nullah and tanks. Involve tribal community in proper management & sustainable harvest of fish fauna.
 Agency: Department of Revenue.
 Priority: ??
8. Mixed cropping should be advocated for conservation of natural fauna of insect. Crop diversity should be maintained & mono cultivation of crops should be avoided.
 Agency: Department of Agriculture and Zilla Panchayat.
 Priority: ??
9. Set up separate bureau for implementation & monitoring of conservation programme for agriculturally important micro-organism, breeds and strain of animals, fish and microbes involving Zonal Agricultural Research Station, Department of Forest/Agriculture/Fishery / Irrigation, Panchyats Institutions, members of tribal communities and concerned research institutions.
 Agency: Department of Agriculture.

- Time: Long term.
Funds: State budget.
Priority: 1
10. Intensify efforts on bio prospecting by involving farmers in in-situ conservation of agro biodiversity and judicious utilization of germplasm collection. Ensure its security and safety for agricultural biodiversity conservation
- Agency: Department of Agriculture.
Time: Long term.
Funds: State budget.
Priority: ??
11. Establish separate Agro-biodiversity Conservation Department in State Agriculture Directorate for conservation of agricultural & horticultural diversity of Bastar and Vidarbha. Establish linkage with other line departments.
- Agency: Department of Agriculture.
Funds: State budget.
Priority: 1
12. Include traditional food grains in the diet programme of school children.
- Agency: Department of Education/ Zilla Panchayat..
Time: Long term.
Funds: State budget.
Priority: 1
13. Initiate fodder development programme at large scale through community participation by paying them incentives.
- Agency: Department of Agriculture/ Zilla and Village Panchayat.
Time: Long term.
Funds: State budget.
Priority: ??
14. Ensure proper credit facility, insurance cover & marketing support to promote traditional crops.
- Agency: Department of Agriculture/ State Cooperative Agriculture Produce Marketing Federation..
Time: Long term.
Funds: State budget.
Priority: 1

15. The mini watersheds and dug wells should be developed on scientific basis to counteract the devastating effects of large dams. A cluster of villages will be the unit for this programme. Regeneration and restoration of vegetation in water shed should be the mandatory activity.

Preference should also be given to construction of wells, small cascade dams on river and tanks.

Agency: Department of Forest & Agriculture, NGOs, Adarash Gaon Sankalp Wa Prakalp Samittee.
 Time: Long term.
 Funds: Central / State Government, Indo-German Watershed Development Programme.
 Priority: ??

16. Decide cropping pattern of villages in consideration of soil PH, profile and texture by involving experts and community members. This will help to select proper requirement of cereals, oilseeds, fruits and vegetables and will help in balancing varietal conservation of the species.

Agency: Department of Agriculture..
 Time: Mid term.
 Funds: State budget.
 Priority: ??

17. Soil testing activity needs expansion. Government Dept. should collaborate with reputed soil testing laboratories.

Agency: Department of Agriculture.
 Time: Long term.
 Funds: State budget.
 Priority: ??

18. “ Village Agrodiversity Register (VAR)” should be prepared and maintained by the Gram Panchayat. Necessary Government Orders are required for implementation.

Agency: State Government of Maharashtra and Chattisgarh..
 Priority: 1

19. Staff or their relatives either involved in wildlife crime or neglecting of offences or avoiding to catch hold of the culprit or totally negligence in duties should be penalized heavily or removed.

Agency: State Government of Maharashtra and Chattisgarh.

- Priority: 2
20. Separate district wise anti poaching squad headed by DFO should be established in each forest circle. This squad adequate fund and infrastructure should also have Police personnel well trained for this purpose.
- Agency: Department of Forest.
 Time: Long term.
 Funds: State budget.
 Priority: ??
21. The indigenous knowledge of the local community members, their educational and economic status and their culture shall have to be taken into account for success of any project.
- Priority: 1
22. Issue final notification for the Indravati Tiger Reserve and Bhairamgarh Sanctuary in Bastar.
- Agency: State Government of Chattisgarh.
 Priority: 1
23. Establish Coordination amongst the State Departments of forest, fisheries & Agriculture of MS, MP CS, Orrisa and AP adjacent to Vidarbha and Bastar region for monitoring forest/agriculture/agriculture habitats and addressing interstate problems.
- Agency: State Departments of Agriculture, Forest, Police, Revenue etc.
 Time: Continuous process.
 Funds: State budget.
 Priority: 1

Strategy III: Promoting sustainable use of biological resources.

Action Plan III: Proposed Actions.

a. Documenting quantum and kind of use of biological resources.

1. The use of NTFP, medicinal plants, fish fauna, plants and tubers, fruits as food, fodder and fuel wood.
2. The identification of features and culture traditional crop varieties.
3. The rearing of draught cattle, milch cows and buffalos, poultry breeds of local varieties.
4. The careful use of water resources.
5. The management of pasture lands.
6. The excavation of minerals, murrum etc from biodiversity rich forest and wetland areas.
7. The use of bamboo for industrial purposes, tendu leaves for bidi patta.
8. The illegal trade and use of birds, tortoises, eggs of water birds.
9. The use of khus grass, lotus bulbs and phool bahari.
10. The use of forest flora as vegetables.
11. The cultivation and consumption of farm vegetables and their importance in human nutrition.
12. The use of agro – waste and tree species as fuel.

Agency: (Action 1-12) State Departments of Agriculture, Forest, and Revenue, Zilla Panchayat, NGOs, Universities etc.

Time: Two years.

Funds: State budget.

Priority: 1

13. Use of various species of fish.

Agency: State Departments of Fisheries/ Universities and NGOs.

Time: One year.

Funds: State budget.

Priority: ??

14. Use of medicinal plants.

Agency: State Department of Forest, Universities and NGOs.,
 Time: One year.
 Funds: State budget.
 Priority: 1

15. Use of fauna as food.

Agency: State Department of Forest, Universities and NGOs .
 Time: One year.
 Funds: State budget.
 Priority: ??

16. Agricultural diversity.

Agency: State Department of Agriculture, Universities and NGOs .
 Time: One year.
 Funds: State budget.
 Priority: 1

17. Use of cattle and poultry breeds.

Agency: State Department of Animal Husbandary, Universities and NGOs.
 Time: One year.
 Funds: State budget.
 Priority: ??

18. Use of timber species for agricultural and household activities.

Agency: State Department of Agriculture, Forest, Police, Revenue etc.
 Time: Continuous process.
 Funds: State budget.
 Priority: ??

19. Use of forest produce as food, medicine and commercial crops that include fruits, flowers, tubers, roots, leaves, creepers, seeds and NTFP like harra, behara, imli, mango, jamun, amla, date palm, tendu leaves, char, tembru, wasta, kela, bel, ber, gular, mahua, sulfi, mas, fulbahari, lakh, tassar coccon, gum.

Agency: State Department of Forest, Universities and NGOs .
 Time: One year.
 Funds: State budget.

Priority: 1

20. Impact of traditional practices on biodiversity like 1) Paradh in Bastar and Polo in East Vidarbha (traditional hunting of wild animals by tribals), 2) Fishing in rivers, streams, ponds, and lakes, community conservation practices, and gender involvement with their role.

Agency: State Department of Forest and Fisheries, Universities and NGOs.
 Time: One year.
 Funds: State budget.
 Priority: 1

b. Determining sustainable levels of use.

1. Preparation and use of compost and green manure, FYM through programme of Panchayat institutions.

Agency: State Department of Agriculture/ZARS, Universities and NGOs .
 Time: One year.
 Funds: State budget.
 Priority: 1

2. Determining carrying capacity of ecosystems (forest, wetlands, grasslands) and sustainable level of use of NTFP, fuel wood, fodder, fish fauna, aquatic flora, tendu leaves, bamboos etc.

Agency: State Department of Forest, Universities and NGOs .
 Time: One year.
 Funds: State budget.
 Priority: 1

3. Need to study sustainable levels of use of fodder, fuel wood and timber, medicinal plants and NTFP, fishes, domestic animals, poultry, and water resources by the community members.

Involve NGOs, Departments of Forest, Agriculture and Fisheries, Universities, JFM committees and community members

Time: One year.
 Funds: State budget.
 Priority: ??

c. Regulations and incentives to achieve these sustainable levels.

1. Provide subsidies to the farmers:

- Rs. 1,500/- per acre on use of organic manure and bio – pesticides.
- Rs. 2,000/- per acre on use of traditional crop seeds.

- Rs. 30,000/- per hectare on production of quality seeds of indigenous crop varieties.
Priority: 1

2. Provide funds to Gram Panchyats / Gram Sabhas for the execution of different programmes of agro –diversity conservation.

Agency: State Department of Agriculture.
Time: One year.
Funds: State budget.
Priority: 1

3. Implement National Bio-gas Development Programme (NBDP) in rural area and make adequate financial provisions.

Agency: State Department of Rural Development, Zilla Panchayat and NGOs.
Time: One year.
Funds: State budget.
Priority: ??

4. Identify villages around Protected Areas and involve them in management of their areas, identified as “Community Conserved Area under proposed amendment of WLPA” by paying them incentives.

(E.g. 11 villages like Mohrli, Junona, Devada, Adegaon, Phami, Zari, Doni, Pangdi, Pipereti, Pandarwani and Karwa are located on the fringes of Andhari Tiger Reserve. These villages belong to Chandrapur Forest division, which are not very big. Prepare eco-development plan for these villages in addition to other activities like providing self – employment, improvement of village basic amenities and health care)

Agency: State Department of Forest, Rural Development, Zilla Panchayat and NGOs.
Time: Mid term.
Funds: State budget.
Priority: 1

5. Empower people, staying in scheduled areas, under the provisions of PESA for collecting NTFP in a sustainable manner and selling it in open market. Allow other people, those who have nistar rights over forest produce or involved in Joint Forest and Protected Area Management to collect NTFP in a sustainable manner and sell it in open market.

Agency: State Department of Forest and Revenue.
Time: Mid term.
Funds: State budget.

Priority: 1

6. Involve people in collection, storage and marketing of tendu leaves through Forest Protection Committee or Gram Sabha. Empower them through proper instrument to collect and sell tendu leaves in open market. The state government and people can fix and share profit as per mutually agreed terms and conditions.

The involvement of people in collection of tendu leaves and sharing of benefits would create their interest in the management of tendu areas. They would protect such areas from over exploitation and forest fire. This would also restrict direct involvement of traders in the area.

Agency: State Department of Forest.
 Time: Continuous process.
 Funds: State budget.
 Priority: 1

7. Make mandatory to provide employment to the local people on priority through schemes or programmes, which is being executed by Forest Department or Protected Area Managers.

Agency: State Department of Forest.
 Time: Continuous process.
 Funds: State budget.
 Priority: 1

8. Encourage local people to involve in eco-tourism as the partner in management and benefit sharing.

Provide 75 % of total income from eco-tourism to the local villagers as their welfare fund.

Agency: State Department of Forest and Tourism.
 Time: Continuous process.
 Funds: State budget.
 Priority: ??

9. Provide 50 % of total royalty received from fishing in tanks by private enterprises or industries to the local villages.

Agency: State Department of Fisheries.
 Time: Continuous process.
 Funds: State budget.
 Priority: 1

10. Provide 50 % of total royalty to the local villagers received from mining, use of village water resources by government or any other agencies for the purpose other than bonafide requirements of local people.

Agency: State Department of Revenue, Mining and Zilla Panchayat.
 Time: Continuous process.

Funds: State budget.
Priority: 1

11. Priority to village communities, Gram Sabha, Forest Protection Committees in allotment of PDS (Govt. control shops) and distribute traditional varieties of crops through PDS.

Agency: State Department of Food and Public Distribution.
Time: Continuous process.
Funds: State budget.
Priority: 1

12. Provide 50% of total revenue / profit received by government or private entrepreneurs on use of biological components to the local people.

Agency: State Department of Forest and Revenue.
Time: Continuous process.
Funds: State budget.
Priority: ??

13. Special rewards to the villages and people involved in protection of flora & wild animals.

Agency: State Department of Forest.
Time: Continuous process.
Funds: State budget.
Priority: 1

14. Special annual rewards / awards / incentives at the onset of monsoon should be given to such villages where no or minimum number of Parads have been occurred.

Agency: State Department of Forest and Revenue.
Time: Continuous process.
Funds: State budget.
Priority: 1

15. Selection of People's Protected Areas in Bhanupratppur, Narayanpur & Kondagaon Forest Divisions has been completed and project planned will be ready shortly.

In this process apart from people, experts of the medicinal plants and local Vaidus should be involved and may be given rewards.

Agency: State Department of Forest.
Time: Continuous process.
Funds: State budget.
Priority: 1

16. Implement action plan for tasar flora through participatory planning process involving all the stake holders, particularly tribals and researchers, so that a strong incentive will emerge along with the biodiversity conservation of the tasar flora, fauna and sustainable use of forest by the local tribal people.

Agency: State Department of Sericulture, Forest and ZARS.
 Time: Long term.
 Funds: State budget.
 Priority: ??

17. The inborn and inherent quality of association of tribals with fish and their traditional methods of protecting them needs to be utilized for conservation and use of fish fauna. Involve knowledgeable tribals in collection of information on various fish species, their status, threats and protection. This information will be utilized for framing & executing long-term action plan for the protection of fish fauna.

Agency: State Department of Fisheries and Forest, tribals/ GramSabha.
 Time: Two years.
 Funds: State budget.
 Priority: ??

18. The role of ethnic communities, particularly women is identified as important in collection & conservation of traditional varieties in fragile agro-ecosystems. The role of the tribal women in Bastar needs to be recognized & properly rewarded.

Agency: State Department of Agriculture/ Zilla Panchayat.
 Time: Continuous process.
 Priority: ??

19. Crop Biodiversity Conservation Group at village cluster level should be formulated involving people, experts, local knowledgeable individuals and NGOs.

Agency: State Department of Agriculture/ Universities.
 Time: Continuous process.
 Funds: State budget.
 Priority: 1

20. Identify community areas growing land races and give those sites status of Community Plant Genetic Resource & pay incentives to the actors (tribals/ agriculturists of Bastar).

Agency: State Department of Agriculture.
 Time: Continuous process.

Funds: State budget.
Priority: 1

21. Establish system of economic devices like access fees, incentives and penalties for use of biological resources.

- Develop new instrument with incentives.
- Panchyats or Village Forest Protection committee should be empowered to impose fine on the offenders. This fine should be deposited in VFPC/ Panchayat funds.
- Panchayat or village Forest Protection Committee or Manzi Panchyats should be motivated & authorized to charge and collect fees for the use of biological resources found in the region.
- The Panchyats or Village Forest Committees or any other community Panchyats, involved in biodiversity conservation and management and perform excellently, should be given awards and special social recognition.
- Empower Panchyats or Village Forest Protection Committees or any other community Panchyats to sell NTFP or value added products in the open market.
- Empower village / Manzi Panchyats, Village Forest Committees to collect tendu leaves and sell in the open market
- Management of minor water bodies to be done by village Panchyats. Empower them to monitor and control over use of the aquatic products and collection of proceeds by the sale of such products.

Agency: State Department of Revenue/ Zilla Panchayat.
Time: One year
Funds: State budget.
Priority: ??

22. The species that are being listed in the red data book and which are locally threatened should be deleted from the syllabus for collection as the plant specimens by students and researchers (e.g. Psilotum, Ophioglossum, Osmunda, Angeopteris).

Agency: State Government and Universities.
Time: One year.
Priority: 1

23. In agriculture, genotypically pure seed and stock material is the essence of conservation of biodiversity and excellent production of propagation material. Seed certification agencies must give serious attention while certifying seed stock. Strict regulation on private seed growers must be imposed in order to produce true to type seed.

Agency: State Department of Agriculture.
Time: One year.

Priority: ??

24. The role of Agricultural Price Commission (APC) is vital in deciding agricultural production and productivity. The APC should cover all indigenous crop varieties, which are an integral part of the ago-biodiversity, for declaring its support price, because all such crops have major role in the dietary of common people. Normally the support prices for the crops are decided and declared very late, mostly after the cultivation of crops. Therefore, this delay should be avoided, so that it may help most of the marginalized agriculturist to get fair prices to their crops and encouragement to grow indigenous crops. The assured price should be based on actual cost of the cultivation. The cost structure should be designed, considering strictly the cost of input concept of the crop and regional climatic conditions.

Agency: State Government and APC.

Time: Immediate.

Priority: 1

25. Inclusion of habitat connectivity and broad based issues of biodiversity in environmental impact assessment.

Agency: MoEF and State Government.

Time: Immediate.

Priority: 1

26. While amending Biological Diversity Bill – 2000, I) identify the role of Gram Sabha for consultation, instead of the locals, (II) impose industrial tax on the units, which has caused or causing losses to biodiversity on polluters pays basis, (III) impose consumer tax for using or sharing of benefits of biodiversity on users pays basis, (IV) define “equitable sharing” properly and clearly and (VI) create space to address the applications of 73rd amendment of the constitution.

Agency: Government of India/ MoEF.

Time: Immediate.

Priority: 1

27. Creation of policies and regulatory framework for the protection of aquatic biodiversity.

- Aquatic Habitats are under tremendous pressure as a source of water (e.g. water required for movement of slurry of iron ore from Bailadila to Vishakhapatnam through pipeline - ESSAR project).
- Alienation of local communities from rights over benefit sharing in the trade of fish and other food organisms.

- Local fish fauna is under pressure due to various forces like growing requirement as food of the outsiders, destructive fishing methods, use of under sized nets, lack of closed seasons.
- Approach of fisheries department to enhance production by introducing exotic species and commercial outlook.
- Very weak consideration to aquatic fauna in wildlife protection measures.

Agency: Department of Irrigation, Fisheries and Forest
 Time: One year.
 Funds: State Budget.
 Priority: ??

28. Protection of existing forestland and wildlife should be strengthened. Peoples dependency on forestland for fuel, fodder and timber has to be reduced through eco-development works. Dependency of marginal and small landholders has to be addressed effectively by providing alternate sources of income.

Agency: Department of Forest.
 Time: Immediate.
 Priority: 1

d. Enhancing livelihoods based on such sustainable use, including through value added products and alternative sustainable livelihood options.

1. Promote manufacturing of food products from oranges, mahua, ber, imali, awla, chiraunji etc.

Agency: State Department of Revenue, Forest/ Zilla Panchayat/ VFPCs/ GramSabhas.
 Time: Mid term.
 Funds: State budget.
 Priority: 1

2. The whole area has lot of cane and bamboo. Both have degraded and been used up. Start programmes to improve forest by increasing bamboos and introduction of cane.

Establish Bamboo and Cane Centre to provide extension services to the people, who can only promote reestablishment of bamboos and cane in forests.

Agency: State Department of Forest, Revenue/ Zilla Panchayat, VFPCsa and Gram Sabha.
 Time: Mid term
 Funds: State budget.
 Priority: 1

3. Empower JFM Committees / tribals for collecting and selling tendu leaves and manufacturing bidi. Ensure government support to market the product.

Agency: State Department of Forest.
 Time: One year
 Funds: State budget.
 Priority: 1

4. Install biogas or gobargas plants at large scale in every village. It will give FYM, fuel and combat health problems arising due to insanitation and smoke emissions from fuel wood

Agency: State Department of Revenue and rural development/ Zilla Panchayat, VFPCsa and Gram Sabha.
 Time: Mid term
 Funds: State budget.
 Priority: ??

5. Encourage use of traditional crops in local diet and distribute the same through Public Distribution System..

Agency: State Department of Food Supplies and Revenue.
 Time: Continuous process..
 Funds: State budget.
 Priority: 1

6. Involve fishermen communities in conservation of local fish fauna and pay them incentives, allow them to enjoy their rights over lakes for conservation and harvesting of fish.

Agency: State Department of Fisheries, Fishermen Communities, VFPCsa and Gram Sabha.
 Time: Mid term
 Funds: State budget.
 Priority: 1

7. The fisheries department should prepare programme for documentation, inventorying, monitoring and protection of local fish fauna. Identify suitable wetlands for this purpose & manage it with the help of local fishermen.

Agency: State Department of Fisheries/ Zilla Panchayat, VFPCsa and Gram Sabha.
 Time: Mid term
 Funds: State budget.

- Priority: ??
8. Encourage farmers to prepare/ collect seeds of traditional and upgraded varieties of agricultural & horticultural crops. Recognise their farms as seed plots and pay them incentives. Government should purchase their seeds.
- Agency: State Department of Agriculture/ Zilla Panchayat.
 Time: Long term
 Funds: State budget.
 Priority: 1
9. Involve villages/ Forest Protection Committees around Protected Areas in the protection & management of wildlife and its habitat by paying them incentives.
- Almost all villages have areas of village forests (as per census report). Such areas needs to be identified and restored. Formulate rules for the villages having nistar privileges in adjoining areas of reserved forest to manage extraction of nistar without finishing capital resource
- Agency: State Department of Forest, VFPCsa and Gram Sabha.
 Time: Long term
 Funds: State budget.
 Priority: 1
10. Existing natural endowment like dense forest, waterfalls, caves, culture and temples should be explored for eco- tourism with involvement of local people and allowing them to share financial benefits.
- Agency: State Department of Forest, Revenue, Tourism / Zilla Panchayat, VFPCsa and Gram Sabha.
 Time: Long term
 Funds: State budget.
 Priority: ??
11. Training and orientation should be provided for harvesting, storage and handling of forest produce and for their value additions. Marketing of forest produces needs to be streamlined and fair price should be paid to the seller. The major beneficiaries must be needy rural people.
- Involve Forest Protection Committees/ Primary Forest Produce Purchase Committees/ Manzi Panchayat as the executing institutes.
- Agency: State Department of Forest, Zilla Panchayat, VFPCsa and Gram Sabha.
 Time: Long term
 Funds: State budget.

- Priority: 1
12. Capacity building for community enterprises likes eco tourism. It should be regulatory and should not cause any harm to the biodiversity.
- Involve selected cluster of villages in Kanger Valley National Park, Indravati Tiger Reserve, Darbha and Konta areas, Oorcha and other abujmar hills, Sukama, Raoghat. Involve NGOs like BASCON, Ram Krishna Mission and Panchyats, State Department of Tribal Culture and Tourism.
- Agency: State Department of Forest, Revenue and Tourism/ Zilla Panchayat, VFPCsa and Gram Sabha.
 Time: Mid term on trial basis. Extend further if results are good.
 Funds: State budget.
 Priority: ??
13. Establish management system for the development of biodiversity based enterprises like collection, cultivation, value addition to medicinal plants
- Involve potential villages for harvest, cultivation and value addition as the pilot project. Identify private sector to establish buy back arrangements
- Agency: State Department of Forest, Revenue/ Zilla Panchayat, VFPCsa and Gram Sabha.
 Time: Mid term
 Funds: State budget.
 Priority: 1
14. Alternative sources of meat in the form of local piggery, poultry, ducks, goats and cattle farming should be provided at no cost to people in wildlife rich areas to prevent poaching or Paradh.
- Agency: State Department of Forest, Animal Husbandary, ZARS/ Zilla Panchayat, VFPCsa and Gram Sabha.
 Time: Mid term
 Funds: State budget.
 Priority: ??
15. Parad, a traditional hunting of tribal in Bastar and Polo in East Vidarbha posed a threat to the wild animals because of their killing without following conservation ethics. It is necessary to open a dialogue with people and involve them in the protection & management of wild animals by stopping paradh or control over and by paying them incentives.
- Agency: State Department of Forest.
 Time: Long term

- Funds: State budget.
Priority: 1
16. Most of the tribals depend on NTFP for their livelihood. Overexploitation of NTFP has depleted resources because of ignorance to the carrying capacity of the area and unsustainable practices of collection. Form harvesting principles or rules by involving experts and community members. It should be made punishable if people or any government agency does not follow rules.
- Agency: State Department of Forest.
Time: One year.
Funds: State budget.
Priority: ??
17. Adapt balanced approach while dealing with NTFP by prohibiting in core area of PA or ecologically sensitive areas, but allowing it by applying harvesting rules in other areas with full responsibilities of community members.
- If NTFP collection is prohibited in PAs and ecologically sensitive areas, make an alternate arrangement by allowing people to harvest NTFP in other areas or pay compensation to them.
- Fix sustainable exploitation norms (study based) for natural resources so that NTFP can be harvested without upsetting the natural balance and functioning of ecosystem. Pay incentives to the local people on annual or seasonal basis for their performance in both putting out and preventing fires and controlling poaching.
- Agency: State Department of Forest.
Time: Long term
Funds: State budget.
Priority: 1
18. Eco – Development programmes by involving locales should be taken up in the buffer area of National Parks & Sanctuaries keeping the main aim and criteria to reduce biotic pressure on the forest area.
- Agency: State Department of Forest, Revenue, Irrigation, Animal Husbandry, Zilla and Gram Panchayat, Gram Sabha, NGOs..
Time: Long term
Funds: State budget.
Priority: 1
19. The tribal people living in the interiors of the forest in Bastar and East Vidarbha have no cereals to eat during the rainy season (from the month of June to September). Thus the government should provide rice to them at a subsidized rate so that they may not move in forest for hunting.
- Agency: State Department of Forest, Revenue.

Time: Mid term
 Funds: State budget
 Priority: 1

Strategy IV: Achieving equity in access to knowledge, use and benefits of biodiversity.

Action Plan IV: Proposed Actions.

a. Providing secured access rights to biological resources for communities traditionally dependent on them.

1. Regulate access to the information on all the projects / programmes in forest/ ecologically sensitive areas through constituting a joint committee at Taluka level, consisting of the representatives of community members & concerned departments in order to prevent practices causing harm to the biodiversity. Give copies of the related documents / project proposals to the communities/ gramsabha/ Gram Panchayats and NGOs. Arrange Jan Sunvai (Public Hearings).

Agency: State Department of Forest, Revenue, Community representatives and NGOs.

Time: Continuous process.

Funds: State budget.

Priority: 1

2. Need to access information on agro diversity available with government departments, scientific and research bodies related to the conservation as well as loss of biodiversity, and legislations etc. Arrange to make this information available in local language.

Agency: State Department of Agriculture and other line departments.

Time: Continuous process.

Priority: 1

3. Empower people and provide information to them on the use and exploitation of natural resources permitted by the government. Such information should not be treated as the classified information. Frame rules to provide such information and make provisions of punishments to those for not providing such information to the communities.

Agency: State Government.

Time: Make provisions in law / form rules within one year.

Priority: 1

4. While preparing village development plan, make it mandatory to involve communities and NGOs and emphasizing on biodiversity conservation as the top most priority. Community representatives should also be involved in the formulation of the policies.

Involvement of tribal people and other communities in preparation of Working Plans through public hearings (Jan - sunwai).

Agency: State Department of Revenue, Rural Development/ Zilla parishad.

Time: Mid term

Funds: State budget
Priority: 1

5. Majority of Bastar population depends on forest resources for their food and livelihood. Amend Indian Forest Act suitably to empower people to have an access to the forest resources and sharing of benefits.

- Needs to integrate access rights with the role of community under the provisions of 73rd amendment to the Constitution of India and its extension to scheduled areas

Agency: State Government.
Time: Make provisions in law / form rules within one year.
Priority: ??

6. Application of collected information on socio - economic and ethnic knowledge to obtain intellectual property rights to benefit local communities and the state.

Involve line departments and scientific institutions.

7. Assign right of access to the local communities to water and bio mass resources (including material generated from management operations) in conformity with a prescribed application of protected area management zone.

Agency: Forest Government.
Time: Make provisions in law / form rules within one year
Priority: 1

8. Prepare Peoples' Biodiversity Register (PBR) at village level involving community members, Forest Protection Committees, Manzi Panchyats, Gram Panchayts, women, youths, knowledgeable local persons (like Matipujaris, Patel, Gaita and Perma), Dalits, researchers and scientists. The PBR will be a property of Gram Sabha of the village and no information contained there in will be used by any other source without permission of the Gram Sabha (needs written consent of 70% of population of the village). Involve experts and NGOs to train local communities to collect and document information and prepare PBR.

This PBR process would create scope for community in accessing intellectual property right & patents.

Agency: State Department of Forest and Revenue, Zilla Parishad.
Funds: State Budget through Panchayat programmme
Time: within one year.
Priority: 1

9. Natural resources should not be taken from one area to provide for the area, where it is not naturally found.

Priority: ??

b. Tackling inequities in access to and benefits from use of biodiversity, within and between communities, and amongst different sections of society including men and women.

1. The approach to be adopted – either socialistic or regimental - will have direct bearing on the socio economic conditions of people and their tendencies also. A straight jacket or a blanket formula cannot prove of much avail. Eco development schemes, inculcating awareness among masses, educating them, measures to minimize unemployment, incentives to forests friends etc may be instrumental in sorting out the problems to some extent. Implementation of all these activities by selecting proper beneficiaries and carrying out mid term / final evaluation by independent agency may yield some fruitful results.

Agency: State Department of Forest , Zilla Parishad.

Priority: ?/

2. Communities should have access to all agreements, programs related to the use of bio – resources by industries and other sectors.

Agency: State Department of Forest, industries and Revenue.

Priority: ?/

3. Decide sustainable harvesting capacities of natural resources through scientific studies and formulate principals or rules for harvesting NTFP and other natural resources. It should be made punishable, if people do not follow rules.

4. Accommodate 50 % women in the executive body of Forest Protection Committee / Gram Sabha.

Agency: State Department of Forest.

Priority: 1

5. Empower fishermen communities to share suitable stake in the benefit of fisheries in the lakes and rivers of their areas. It is necessary to promote breeding of local fish species and its limited use.

Agency: State Department of Forest and Revenue, Zilla Parishad.

Funds: State Budget through Panchayat programmme

Time: within one year.

Priority: ??

6. Deposit funds of all developmental schemes in the account of Gram Sabha.

Agency: State Department of Forest and Revenue, Zilla Parishad.

Funds: State Budget through Panchayat programme
 Priority: 1

7. Make sufficient financial provisions to execute micro working plan prepared by Forest Protection Committee under Joint Forest Management program.

Agency: State Department of Forest.
 Funds: State Budget.
 Time: within one year.
 Priority: 1

8. Empower people to access all schemes seeking financial aid from various banks, giving soft loans for community development or any other national or international funding agencies

Agency: State Department of Forest and Revenue, Zilla Parishad.
 Priority: 1

9. The supply of pure drinking water to villagers is a must. Rural sanitation and health program has direct concern with working capacities of locals. Since this program has not been given serious attention, it resulted in paralyzing hygiene of the village.

Efforts should be made to strengthen the health care activities.

Agency: State Department of Forest, Rural Development and Revenue, Zilla Parishad.
 Funds: State Budget through Panchayat programme
 Time: within one year.
 Priority: ??

10. Identify & recognize ownership of the local communities, farmers, public or private breeder and give legal protection to the land races and traditional varieties.

Registration of these cultivars should be done at the level of Gram Sabha, Village & block Panchayat, Manzhi Panchayat and establish linkage with National Registration Authority. Waive off registration charges or otherwise to be born by the state government in case of gram sabha, tribal farmer, marginal & below poverty line farmers and community and Zilla/ block Panchayat.

Agency: State Department of Agriculture and Zilla Parishad.
 Funds: State Budget through Panchayat programme
 Time: within one year.
 Priority: 1

11. Identify and register other agriculturally related and important bio-resources like breeds/ strains of animals / fish / microbes in the same way as mentioned in 9.

Agency: State Department of Agriculture and Zilla Parishad.

Funds: State Budget.
 Time: within one year.
 Priority: 1

12. Women have adequate knowledge about the sustainable use of seeds, fruits, tubers, plants, roots, medicinal plants, fishes and other aquatic fauna and they involve in sustainable harvesting of such products or its conservation and management. They should be empowered to share financial benefits by sale of such products through Gramsabha and SHGs. At least 50% beneficiaries should be from this important group of the society. They must be given right over access to protect their own knowledge base and access over other information related to the biodiversity.

Agency: State Department of Agriculture and Zilla Parishad.
 Funds: State Budget.
 Priority: ??

13. All government programmes related to harvesting forest and natural resources need to accommodate local communities as the partner in sharing benefits from commercial sale (e.g. Sale of timber, tendu leaves, NTFP, fish fauna etc.).

Agency: State Department of Forest.
 Funds: State Budget.
 Time: within one year.
 Priority: 1

14. Involve community members in identification, planning and execution of programmes like afforestation, collection and sale of NTFP, preparation of working plans of forest and natural resources, pisci culture, agricultural development, livestock and poultry developmental programmes, formation of all strategies related to social, cultural and industrial development.

Agency: State Department of Agriculture, Forest, Livestock and Zilla Parishad.
 Priority: 2

15. Need to access of community members to information technology and research institute.

Priority: 2

16. Empower local community members to share benefits if natural resources of their areas are being utilized for commercial purpose.

Agency: State Department of Forest, Revenue and Zilla Parishad.
 Priority: 1

17. Involve local communities in regular and occasional work / employment activities in forest and Protected Areas, wetland management and natural resource management with priority to the landless and poorest. and pay them proper incentives.

Agency: State Department of Forest.

Funds: State Budget.
Priority: 1

18. Promote Joint or Participatory Protected Area Management with the involvement of local community members and use their knowledge & capabilities in conservation of wildlife and its habitat. Involve them in planning, monitoring and implementation of all the schemes related to the Protected area Management and pay them suitable incentives.

Constitute Village Protected Area Management Committees under the provisions of Wildlife (Protection) Act, 1972 or otherwise introduce suitable amendments in the law so that such committees could be empowered to perform their duties. It should have representatives of the community members, forest and other line departments, NGOs/ CBOs etc.

Agency: State Department of Forest.
Funds: State Budget.
Time: within one year.
Priority: 1

19. Formation of schemes for the participation of people in all Protected Areas, biologically significant non – PAs and other areas with priority to landless and poor families to provide fruitful employment in different field works of management and community resource development. They should be identified as the major stakeholders in joint management of all NTFP operations from collection to processing and marketing.

Involve department of forest and NGOs.
Priority: 1

c. Special step for dispreveliged sections, including landless, tribals, and others, including women within these and other sections.

1. Rural economy is largely dependent on sufficient agricultural production that decides the standard of living of the farmers. The women are the key actors in agriculture and family up-keeping. It is necessary to help women, to keep themselves healthy by providing medical and other necessary services.

Agency: State Department of Family Wefare/Zilla Panchayat..
Funds: State Budget.
Priority: 1

Priority: 1

2. Involve Kuruk tribe of Bastar in management of fishing sites and empowering them to share benefits in all commercial ventures of government (e.g. at Tirathgad).

Agency: State Department of Fishries and Forest.

Funds: State Budget.
 Time: within one year.
 Priority: 1

3. People from dispreveliged sections like landless labors and economically weaker people and women should be given proper share in all ventures fetching resources for livelihood (based on natural resources of their areas).

Agency: State Department of Forest/Agriculture/Revenue/Fishries etc..
 Funds: State Budget.
 Time: within one year.
 Priority: 1

4. Involve women in collection of seeds, raising of saplings and management of plantations by paying them incentives.

Agency: State Department of Forest.
 Funds: State Budget.
 Time: within one year.
 Priority: 1

5. Involve tribal women in all documentation and study projects related to inventorying, monitoring of agricultural crop diversity.

Agency: Agriculture Department.
 Funds: State Budget.
 Time: within one year.
 Priority: ??

6. Involve tribal youths in conservation of soil and moisture by paying them incentives.

Agency: Agriculture/Forest Department/Zilla panchayat.
 Funds: State Budget.
 Time: within one year.
 Priority: ??

7. Indigenous knowledge and practice of people should be tapped. Training and orientation should be provided for harvesting, storage and handling of forest produce and for their value additions. Marketing of forest produce needs to be streamlined and fair price be paid to the seller. The major beneficiaries must be needy rural people.

Agency: Forest Department/NGOs/VFPC.
 Funds: State Budget.
 Time: within one year.
 Priority: 1

8. Involve women & tribal, landless labourers in collection of seeds, raising saplings in plant nursery. Make mandatory to the department of Forest, Social forestry and all other line departments to purchase saplings from them.

Agency: Agriculture/ Forest Department/ Zilla Panchayat.

Funds: State Budget.

Time: within one year.

Priority: ??

Priority: 1

9. Involve tribal youths in protection of wildlife & flora, management of wetlands, conservation of fishes & pay them incentives.

Agency: Agriculture/ Frest/Fisheries/Irrigation Department and Zilla Panchayat/
Gramsabha/ VFPC..

Funds: State Budget.

Time: within one year.

Priority: 1

Strategy V: Formulating an integral policy and legislative framework for Conservation, sustainable use, and equitable sharing of benefits of Biological diversity.

Action Plan V: Proposed Actions.

a. Analyzing existing policies and laws from biodiversity point of view.

1. Discrepancies in Wildlife (Protection) Act, 1972:

Wildlife (Protection) Act, 1972 is not a code by itself, and therefore provisions contained in the Cr. Pc. 1973 are applicable to wildlife offence cases. The Wildlife (Protection) Act 1972 does not empower the investigating officer (complainant/RFO) to file a charge sheet in the court of law as per the S/173 of Cr. Pc.

The personal appearance of the complainant (in complaint case) is necessary lest the complaint be liable to be dismissed. Section 55 of the Wildlife (Protection) Act, 1972, requires substantial amendments. The new section altogether in its place be incorporated / inserted providing for a complaint by the forest officer be treated under section 173Cr.P.C., as police report.

Agency: Government of India.

Priority: Agency: Government of India.??

2. Judicial Role:

The Judicial Magistrate (Ist class) having limited powers tends to award low quantum of penalties/ punishments to the accused persons. If the wildlife cases are made triable by the Addl. Sessions Judge, the question of referring the cases for penalty would not arise. This will ensure speedy disposal of cases, and act as a deterrent.

Agency: State Government.

Priority: 1

3. Buffer zone and wildlife corridors:

Buffer zone and wildlife corridors have no legal status leaving it to be just a management concept. In the legal context, these areas are also required to be brought under one legal category with stipulations that ensure no commercial activities take place in this area. Such areas can be declared as separate eco zones forming an essential part of the protected area (the National Wildlife Action Plan proposes to declare such areas as ecologically sensitive areas under the Environmental Protection Act 1986). Of course the bonafide requirement of the local people will have no secondary or subsidiary importance, as it will otherwise contravene the provision of the National Forest Policy

1988. Identify Buffer Zones to all PAs.

Agency: Centrl and State Government.

Priority: 1

4. Medicinal Plants:

Under Medicinal Plants Conservation Association (MPCA), in order to make the protected areas inviolate, the local people interested in medicinal plants collection, their propagation etc., should be provided with “ technical know how” for nursery raising and assistance for marketing also can be provided. This will reduce offences also, but it should not disturb bona fide rights of the local people. Impose ban on commercial collection, but, it is also necessary to allow bona fide domestic consumption of the medicinal plants.

Agency: Forest Department/ Zilla Panchayat.

Funds: State Budget.

Time: Long term.

Priority: ??

5. Providing sufficient financial assistance.

Existing wings of forest department like research, working plan, database should be strengthened by providing sufficient financial assistance and recruitment of suitable and competent manpower. These wings should form linkages with other existing institutions, organizations, laboratories etc.

Agency: Central/State Government.

Funds: State Budget.

Time: within one year.

Priority: 1?

6. The Supreme Court judgment regarding strict implementation of working plan in stipulated time should be followed . Accountability needs to be fixed on violation of preparing and implementing working plan prescriptions . Make it mandatory for all agencies to involve community members, NGOs / CBOs and concerned stakeholders in preparation of working plans and its execution. Working plans should have comprehensive description on the management of faunal diversity.

Agency: Forest Department.

Funds: State Budget.

Time: within one year.

Priority: 1

7. The government should direct revenue officials to provide records such as 7/12 extracts on priority basis if required by various agencies for developmental

- programs.
- Priority: ??
8. The areas which are earmarked but not brought under plantation should have a comprehensive management plan on the line of working plan and forest management plan.
- Agency: Revenue/ Forest Department.
 Funds: State Budget.
 Time: Long term.
 Priority: ??
9. The activities of MCCTDC / CSCTDC should be suspended from the forest area and their job may be entrusted to the forest department, as they have extensive network of infrastructure and personnel, predominantly forest areas. Otherwise, MSCTDC/ CSCTDC and forest department should work under joint collaboration.
- Agency: State Government.
 Time: ??
 Priority: ??
10. Prepare management plan of all territorial divisions of forest department, FDCM areas, Protected Areas, wetlands, and other biologically significant areas with the help of NGOs, local communities, scientists & researchers.
- Agency: Revenue/ Forest Department/FDC and other line departments/NGOs.
 Funds: State Budget.
 Time: Two years.
 Priority: 1
11. Every year advance budget is prepared on the basis of prescription of the working plan. However, the matching grants are not received even from the revenue expenditure. In such cases, the forest department must approach to other non-governmental funding agencies to seek extra financial aids.
- Agency: State Government.
 Funds: State Budget/external funding source.
 Time: Long term.
 Priority: ??
12. Many of the schemes that are related to the tribal development are not tuned with the lifestyle of the tribals. Thus, due emphasis must be given to the schemes that are directly helping biodiversity conservation practices, as are followed by the tribals.
- Agency: Department of Tribal Development.

- Funds: State Budget.
Time: One year.
Priority: 2
13. The proper acts for the protection and conservation of river and nallahs banks should be invoked immediately.
- Agency: Revenue/ Forest Department.
Time: One year.
Priority: 1
14. Management of wildlife in areas other than PAs.
- There is no proper provision of conservation and management of wildlife in the areas other than PAs. Make it mandatory to prepare wildlife action plan for territorial forest divisions, community lands, wetlands, pastures, agricultural lands and areas under control of Forest Development Corporation. Fix accountability for not preparing and executing prescription for wildlife management on head of the area. Make it mandatory for the Chief Wildlife Warden/ Conservator of Forests to write in the CR of forest manager about his work done on wildlife protection and management.
- Agency: State Department incharge of the area.
Funds: State Budget.
Time: Long term.
Priority: 1
15. Cross breeding programme of milch cow with exotic animal breeds like Holstein & Jersey needs to be revoked & introduce upgradation of local breed with other indigenous breeds like Gir, Sahiwal, and Gaolao etc.
- Agency: Livestock Department.
Funds: State Budget.
Time: Long term.
Priority: 1
16. Introduction of poultry breeds like White & Red Leg horn need to be replaced by introduction of other indigenous poultry breeds and its cross breeding with local non – descript breeds.
- Agency: Livestock Department.
Funds: State Budget.
Time: Long term.
Priority: 1
17. Identify potential of cross breeding of local draught animals with other indigenous breeds like Ongole, Gaolao.

Agency: Livestock Department.
 Funds: State Budget.
 Time: Long term.
 Priority: 2

18. Strict actions against encroachers, who have encroached on any forestland after 1980 and eviction of such encroachments. It should be ensured that no encroachment on the forestland is allowed and if such occurs, the land should be evacuated immediately applying the legal processes. Accountability for the encroachment / non-eviction should be fixed

Agency: Revenue/ Forest Department.
 Time: One year.
 Priority: 1

2. Formulate fishing laws for the state with extension to all other aquatic forms and ecosystems.

Agency: Fisheries/ Forest Department.
 Time: One year.
 Priority: 1

20. Identify monitoring mechanism to assess implementation and impact of various legislations concerned with wildlife, forest, agriculture, livestock and bio culture.

Agency: State Government.
 Time: One year.
 Priority: 1

21. The recently amended Protection of Plant Varieties and Farmers Rights Act is protecting the commercial interest of manufacturers and sellers of seeds. The rights and interests of the local people or agriculturists involved in traditional practices of agriculture are missing. Safeguard traditional rights of the community members.

Review this act in light of above missing factors through public hearings to encourage and strengthen participation of the people and their rights.

Agency: Agriculture Department.
 Time: One year.
 Priority: 1

b. Changing current policies and laws to make them compatible with Biodiversity goals.

1. Themes of forest laws:
 The present laws relating to forests and wildlife are basically intended for protection.

These should be oriented towards restoration, protection, preservation, development and utilization also.

Priority: ??

2. Specific provisions related to biodiversity conservation, restoration, protection should be mandatory for incorporating in relevant strategy documents and their compliances are to be strictly ensured. This will require capacity building of the people associated with enforcement of laws, implementation of the different measures for protection, conservation and restoration of biodiversity

Agency: All line Department.

Time: One year.

Priority: 1

3. Inquiries of PAs [S/18 – S/19] of Wildlife Protection Act, 1972:

As regards inquiries under S/19 to 25 of the Wildlife (Protection) Act, 1972, the Supreme Court in writ petition no 337/95 had issued directives to complete the inquiries within a period of one year. In the context, the inquiry in respect of reserved forest is also necessary, as these areas, after declaring so, are subsequently burdened with encroachments (For Example Chaprala Wildlife Sanctuary in Gadchiroli district).

Agency: Government of India/Forest Department.

Time: One year.

Priority: ??

4. Immunization of domestic cattle:

Vaccination / immunization to domestic cattle in the vicinity of the PA (including Protected Areas) should strictly be done. This programme should address diseases like Rinder pest (Hemorrhagic septicemia), Black quarter, Foot & Mouth disease especially during epidemics.

Agency: Livestock and Forest Department.

Time: One year.

Priority: ??

5. Abolish subsidies provided to chemical fertilizers & pesticides and provide subsidies to organic manures and biofertilizers.

Agency: State Government.

Time: One year.

Priority: 1

6. Need to emphasize on traditional crop pattern of millets & minor millets etc.

- Agency: Agriculture Department.
Time: Long term.
Priority: ??
7. The bamboo exploitation should be governed by enforcing bamboo-cutting rules that are generally not followed. As per exploitation rules, all clumps should be retained in the first year & clumps of second year should be retained in such a manner that they support first year's clumps. Bamboo is to be removed every third year. It has been observed that no such rules are being followed while bamboo working, which ultimately resulted in damaging the habitat. Dry bamboos are hazardous from forest fire point of view. In case of forest fire bamboo gets burst and fire spreads to larger areas.
- Agency: Forest Department.
Time: One year.
Priority: 1
8. Regional Biodiversity Management & Regulation Authority at divisional level should scrutinize various developmental programmes. It would help to make such programmes biodiversity conservation oriented.
- Agency: State Government.
Time: One year.
Priority: 1
9. The governmental agencies should create an appropriate opportunities to involve all grass root stakeholders in the harvesting & storing of NTFP in a sustainable manner. Appropriate training programme should be arranged for the stakeholders.
- Agency: Forest Department.
Time: One year.
Priority: ??
10. There should be clear guidelines to JMFC for not exceeding their jurisdiction. If it is contradicted, suitable disciplinary action should be taken against the JMFC.
- Agency: State Government.
Priority: ??
11. Management of Wildlife in areas other than Protected Areas.
- There is no proper provision of conservation and management of wild life in areas other than Protected Area. Make it mandatory to prepare wildlife conservation and management plans for forest areas, community land, wetlands, pastures, agricultural land and areas under control of FDCM. All line departments as mentioned below should have the same plan, considering their role.

- Irrigation / Fisheries for aquatic diversity- lakes, dams, rivers.
- Animal Husbandry for local livestock & poultry breeds.

Territorial area under forest department should have very clear, specific wildlife and biodiversity conservation management plan (**WBCMP**), included in working plan of that area.

Agency: Revenue/ Forest and other line Departments.
 Time: One year.
 Priority: 1

12. In future Forest deptt. should give top most priority to allocate appropriate funds for biodiversity conservation and spending on habitat management.

Priority: 1

13. Allow schemes funded by various indigenous and foreign agencies on forest/wildlife/wetland management, poverty eradication/plantations /construction of dams or any programme related to the agriculture, livestock and bio-cultural diversity etc. should be allowed to be scrutinized by the people and NGOs right from the level of planning, execution, monitoring and evaluation. At the planning level, we must create necessary space to accommodate representatives of communities and NGOs as the part of planning & execution process if we really want to make such programs practically successful

Agency: State Departments, NGOs, and CBOs/Gramsabha/VFPCs.
 Time: Continuous process..
 Priority: 1

14. It is the opinion of the people and NGOs that we need not approach various foreign financial institutes for soft loans as it is creating extra burden on our economy and other programs. We should not depend too much on external financial sources, to protect and conserve our biological heritage.

15. Biodiversity conservation needs to be dealt with the protection and restoration of natural resources with the involvement of community members and allowing them to share benefits in the form of sustainable harvesting of NTFP.

Agency: State Departments, NGOs, and CBOs/Gramsabha/VFPCs.
 Time: Continuous process..
 Priority: 1

16. In Bastar, the power of transfer within the district of the wildlife staff from the Ranger downwards now vests with the Zilla Parishad unlike in the case of Police. This power must be vested with the Conservator of Forests (Wildlife) & Field Director of the respective Protected Areas.

- Priority: ??
17. In Bastar, at least 15 % amount of the bonus on sale of tendu leaves received by the state government should be spent on regeneration & protection of tendu trees as well as biodiversity of the area with the involvement of people.
- Agency: State Government.
Time: One year.
Priority: 1
18. Review and conclude all lawsuits pending against adivasi that pertains to encroachment into government owned lands. This would relieve them of considerable worry as well as economic pressure and would at the same time considerably reduce commercial exploitation.
- Agency: State Government.
Time: One year.
Priority: 1
19. Forest Protection Committee or Van Dhan Samittee should have independent identity and management without interference of the government.
- Agency: State Government.
Time: One year.
Priority: 1
20. Define and legalize sharing of benefits by community in the sale of timber and non – timber forest produces.
- Agency: Forest Department.
Time: One year.
Priority: 1
21. There should not be a forced eviction of the people from any PA/Eco-fragile Zones, unless otherwise, it is accepted by them and their proper rehabilitation package is prepared with necessary budgetary provisions. Forced evictions would deprive them from their traditional livelihoods and may further aggravate man-management conflicts and condition of natural resources .
- Agency: State Government.
Priority: 1
22. Sacred Groves (Deorais/ deogudies) – man & animal conflict:Man – animal conflict, protection and development of Deorais / Deogudies (Mangal van/ sacred forests), people participation in forest management, are some of the areas for pondering deeply. The concept of integrated forest management , involving all wings of the forest department and other line departments like revenue, irrigation, fisheries,police,judiciary etc. ,would serve the purpose of forest/ wildlife protection to certain extent.

- Agency: State Departments, NGOs, and CBOs/Gramsabha/VFPCs.
 Time: Continuous process..
 Priority: 1
23. The management/working plans are generally production oriented. They lack orientation in terms of conservation of biodiversity. There is no prescription for the conservation of wetland ecosystem, no clear policy for management of sacred groves, heronaries / medicinal plants, fishes, serpentines, threatened species, swamps, wild relatives of agricultural crops and areas under the management of forest protection committee / gram sabha/Communities. There is no effective & proper institutional framework that can effectively manage and monitor conservation activities.
- In the changing ethical and social scenario there is a need for providing special status to these valuable patches (under the provision of Wildlife (Protection) Act, 1972 and Environment Protection Act, 1986), particularly under management of communities, so that privileges or the rights of the local communities are not disturbed
24. Protection of Plant Varieties & Farmers Right Act:
- Need to review Protection of Plant Varieties & Farmers Right Act to address protection of traditional rights of the farmers in conservation, propagation and exchange of seeds, breeding of plants and managing agro-diversity, community knowledge etc. Arrange reviews through public meetings at village level.
- Agency: Gram Panchayat.
 Priority: ??
25. Effect of pollutants on flora & fauna
- Synergetic impact of change of microclimate due to the gaseous pollutants in ambient air adversely affect the sensitive flora and fauna but this has not been referred to in any of the act under the existing law. Make necessary provisions in Environment Protection Act.
- Agency: Govnment of India.
 Priority: 1
26. There is a need to have strong extension services of the forest department. Section 80(A) of Indian Forest Act needs to make more instrumental by fixing responsibility of displacement on district administration & arranging services of Executive Magistrate and Police force to execute displacement in judicious manner. Define role of Panchyat institution (e. g. Gram Panchyats / Gram Sabha / Taluka and Zilla Panchyats).
- Agency: Central and State Government.

- Priority: ??
27. Enhancement of compounding limits:
- Compounding power under section 54 of Wildlife Act, 1972 may be enhanced to Rs. 10,000 /- in place of Rs. 2000/- as is currently provided.
- Agency: Central and State Government.
Priority: 1
28. Posting of Law officer:
- Law officer at state level may be appointed in order to remove possible lacunae in the case related to environment, forest, wildlife, wetlands, JFM, mining etc. to make them biodiversity oriented.
- Agency: Central and State Government.
Priority: ??
29. Proclamation of offenders:
- A list of offenders should be maintained and circulated to all the concerned authorities to keep effective vigil and control. This history sheet will unearth many crimes.
- Agency: Central and State Departments.
Priority: ??
30. Vigil and control:
- Beat inspections, vigil over offenders, ensuring of proper functioning of check posts, appointments of staffers with undoubtful integrity are some of the measures to be recommended. The patrolling squads and their proper constitution is also important. Fast communication and mobility is indispensable.
- Agency: Forest Department.
Time: Ling term
Priority: ??
31. Hurdles in adducing witnesses / evidences:
- The government witnesses are made hostile by the accused by grafting them sometimes and resultantlly the cases fail in the court. Correct method of recording a panchnama, depositions, interrogation techniques, preparing case papers, knowledge of procedural matters are some of the important factors contributory to the success of prosecution case.

Agency: Revenue/ Forest and other line Departments.
 Priority: 1

c. Enacting new policies and laws for enhancing conservation, sustainable use and equity.

Vidarbha:

1. The Maharashtra state legislature has not mentioned bamboo mat as the forest produce and therefore, it is the duty of legislature to define bamboo mat as forest produce under section 2(4) of Indian Forest Act.

Agency: Government of Maharashtra.
 Time: One year.
 Priority: 1

2. There are no provisions for the custody of the offenders of the forest department. The nearest Police station is used for keeping the evicted persons in the custody. This increases the investigation time for such cases. Hence separate custody cells at the Range Forest Officer level must be provided.

Agency: Central/State Government and Forest Departments.
 Time: One year.
 Priority: ??

3. Forest Custody / Court:
 Create forest custody, forest prosecutor, and forest court / Green Courts.

Agency: Central/State Government.
 Time: One year.
 Priority: 1

4. All Non – timber forest produce (NTFP) collection for non –commercial purpose use should be continued as per the management plan in the sanctuary only.

Agency: Central/State Government and Forest Department.
 Priority: ??

5. Paradh or mass communal hunt involving fire application and use of nets must be banned immediately. The controlling authorities must show determination to eradicate these practices by consultation with local communities.

Agency: State Government and Forest Department.
 Priority: 1

6. The existing vacancies in the field staff should be filled up.
Agency: Central/State Government .
Priority: ??
7. An anti poaching camp for the Indravati N. P/ Bhairamgarh WLS must be posted at Pharsegad and provided with vehicles. Local youths should be involved in this squad by paying incentives/ wages through village Panchayat.

Agency: Forest Department.
Time: Long term.
Priority: 1
8. Promote “ Cluster of village “ approach (such as parganas in Bastar) for protection and management of forest and its resources under JFM/ CFM/ Watershed Area Development/ Rajiv Gandhi Jal Grahani Mission/ community genetic resources etc.). While involving such community institutions, we must provide the community the sense of belongings, as they should have ownership or tenure rights over lands or activity. Again, some imbalance of power needs to be corrected and such committees needs to be legally constituted.

Agency: State Government and line Departments.
Time: Long term.
Priority: ??
9. State Forest Act should not interfere with the tradition and the restrictive norms of the adivasi people that go along with their rights and ownership areas. The policy should meet the requirement of fuel wood, fodder, minor forest produce and small timber of the rural and tribal population. Their dependence on the forest for their livelihood should not receive cursory attention. It is necessary to recognise their customary laws.

Agency: Central/State Government .
Priority: 1
10. The current legal system should recognize the different types of forests that are used by the people. It is necessary to recognize the need to mark the ecological landscapes that are used by the people despite the growing concern amongst the state institutions about the plight of the people dependant on the forest. The official designations of the area should have reflection of the ecological or social status of the forest like sacred grove, which is richer in variety than sal forest that lie within the village boundary

Agency: /State Government and Forest Departments.
Priority: ??

Sacred Groves (DEOGUDIS) needs to be protected from any encroachments in any form and conserved as the “ *Community Conservation sites for flora and fauna* ” with addition of more areas. Formulate policy and provide legal protection to the Sacred Groves under the provisions of Panchayat (Extension to Scheduled Areas) Act, and

- Indian Forest Act (Village Forest clause/section 28) and recognize & empower community management system (like Gramsabha and Matipujari) involved in this kind of management.
 Agency: State Government and Forest Departments.
 Time: Long term.
 Priority: 1
11. Stop commercial supply of head loading of fuel wood to the cities and towns, within 30 Kms. from the forest. Provide gas on priority basis in such cities and towns to minimize use of forest-wood.
 Agency: /State Government and Forest Departments.
 Priority: ??
12. The Bastar region, biologically significant area needs legal provisions to manage as “the heritage site ”.
 Agency: Central/State Government .
 Priority: 1
13. Creation of industrial development policy for Bastar area that should be biodiversity conservation oriented. The perspective views on this issue should be promoted through public debate on related issues.
 Agency: State Government.
 Time: One year.
 Priority: 1
14. Formation of specific guidelines on land use planning and biodiversity conservation. Integrating the same with the plans of consult agencies.
 Agency: /State Government and line Departments.
 Time: One year.
 Priority: ??
15. Various governmental line departments are formulating and executing programmes contradicting biodiversity conservation.
 Identify thrust areas for inter departmental coordination (e. g. Department of Forest, Irrigation, Fisheries, Revenue and Agriculture for Joint Management of wetlands and Aquatic ecosystems).
 Priority: ??
16. Make it mandatory to implement all recommendations approved in environmental impact assessment.

- Agency: Central/State Government and line Departments.
Priority: 1
17. Formation of a policy and regulatory mechanism for joint management in protected areas and biodiversity conservation sites.
- Involve new institutional mechanisms and instruments to achieve the goals to such biologically significant areas.
- Agency: State Government and Forest Department.
Time: Long term.
Priority: 1
18. Formulate specific policy and regulatory mechanism to phase out clear felling, mono – culture in high tech-plantations, auction of rights of the collection and trade of NTFP.
- Agency: State Government and Forest Department.
Time: Long term.
Priority: ??
19. Formation of policy and regulatory mechanism for in-situ conservation and management of agricultural biodiversity.
- Agency: State Government and Agriculture Department.
Time: Long term.
Priority: ??
20. Introduction of exotic and high yielding varieties eroding traditional crop genetic diversity. The promotion of the use of chemical fertilizers and pesticides in Bastar area causing immense harm to the fauna, vital for agricultural development.
- Stop such programmes or revise. Give farmers alternative programmes of cultivating organic products by making conservation of agricultural biodiversity profitable.
- It is the urgent need to involve suitable new institutions and instruments including protection of organic agriculture systems and their green market.
- Set up boards to buy organically produces local rice and other crop varieties.
- Develop value addition and packing for the food such food items.
- Market these products in metros in foreign countries
- Pass on profit out of sell of such product; 40% to the cultivator. 20% to the farmer's processing organizations and 40% to the marketing agency.
- Agency: State Government and Forest Department.
Time: Long term.
Priority: 1

21. Formation of peoples' perspective on the biodiversity conservation of Bastar through public debate on related policy issues.

Agency: State Government and Revenue/Forest Department,Zilla PAnchayat.
 Time: One year.
 Priority: 1

22. The traditions of tribals that pertain to sustainable & restrictive use of natural resources should gain official confirmation and guide official policy in forest management. This will be a practical way of managing the forest without neglecting the needs of the adivasi.

Agency: State Government and Forest Department.
 Priority: ??

23. To restrict commercial harvesting of the forest produce to specific time periods taking into account the biological cycle and ecological constraints of each product. This will prevent overexploitation of desirable species and ensure their regeneration.

Agency: Forest Department.
 Priority: ??

24. Encourage registration of plant germplasm on properly characterized, documented and researched information.

Agency: State Government and Agriculture Department.
 Time: Long term.
 Priority: ??

25. Erosion of land races should be checked through legislation and elite races should be conserved in the gene banks.

Agency: Central/State Government.
 Time: Long term.
 Priority: ??

26. Identify community areas growing land races and give those sites status of Community Plant Genetic Resource.

Agency: Agriculture Department.
 Time: Long term.
 Priority: 1

27. While formulating/amending policies and regulatory acts related to agriculture, consider opinion of the experts and mainly of people through public hearings at village cluster level through Manzi Panchayat/ Garmsabha etc.

Agency: State Government and Agriculture Department/Zills Panchayat/NGOs.

- Priority: ??
28. Impose ban on voting or contesting elections by the persons involved in encroachments on forestland or to encouraging such acts by any means.
- Agency: Central/State Government.
Priority: ??
29. Necessary provisions in the law to empower the District Collector to have Biodiversity and bio – cultural mapping of district. Mapping should be based on local knowledge and local language. Such mapping should be revised after every five years.
- Agency: State Government.
Time: One year.
Priority: 1
30. To review and conclude all lawsuits pending against adivasi that pertains to encroachment into government owned lands. This would relieve them of considerable worry as well as economic pressure and would at the same time considerably reduce commercial exploitation.
- Agency: Central/State Government.
Priority: 1
31. All receipts on account of tourism and penalties collected in a PA should go to local trust fund operated by joint committee of PA management and community members. Minimum 70% of these funds should go to community benefit works and rest for park management and developmental activities.
- Agency: State Government/Forest department.
Time: Long term
Priority: ??
32. Need to prepare policies about the cultivation of feed and fodder crops in seasonal rotation. Identify mix-farming system as most remunerative in the different parts of the region.
- Agency: State Government/Agriculture, Revenue and Forest department.
Priority: ??

d Institutional mechanism to integrate biodiversity into each sector of Development, with adequate funding within such sectors.

1. Appoint special Forest Prosecutor to handle the cases of forest department at the district level considering alarming increase in the crime rate in relation with forest department.

There are large numbers of cases pending before the courts. Need to setup forest court to exclusively deal these cases.

Agency: State Government/Forest department.
Priority: ??

2. Staffing:

Make it mandatory to appoint wildlife-trained staff in the wildlife wing to ensure better management and understanding of the purpose.

Agency: State Government/Forest department.
Priority: 1

3. Set up “ Farm Counseling and Information Center ” (FCIC) at taluka and district level to perform jobs like daily forecasting of weather, information on pest surveillance, foolproof counseling for any type of problems in relation to traditional cultivation. It must be equipped with full information support and manpower.

Agency: State Government/ Agriculture Department.
Time: Long term
Priority: ??

4. Formation of Wildlife Management Advisory Committees at Pargana level (Bastar) with representatives of the local community (Manzi, Matipujari, Patel), Department of Forest, revenue, fisheries, irrigation etc.

Agency: State Government/Forest Department.
Time: Long term
Priority: 1

5. Field development works of all departments should have a tone of biodiversity conservation, for this attitude of implementing agency has to be suitably molded in this regard. It will also increase inter departmental coordination

Agency: State Government/ Line Departments.
Time: Long term
Priority: ??

6. Separate district wise anti poaching squad headed by DFO should be established in each forest circle. This squad should also have police personnel well trained for this purpose. Adequate fund and infrastructure should be provided.

Agency: /Forest Department.
Time: Long term
Priority: ?/

7. Updated Management Plan must be prepared for the Indravati Tiger Reserve, Makdi Forest Reserve, Pamed & Bhairamgad wildlife Sanctuary.

Priority: 1

8. Promote participation of women and landless in all programmes/ activities related to biodiversity conservation and natural resource management. Prepare specific guidelines and issue directives to the concerned departments.

- Agency: Forest Department.
Time: Long term
Priority: 1
9. Integrate efforts of line departments like Agriculture, Animal Husbandry, Fisheries, Forests, Irrigation, Rural Development, Zilla Panchyats and Revenue in formulating strategies and joint action plans for conservation of biodiversity in multiple agencies control areas.
- Agency: State Government/Line Departments.
Time: Long term
Priority: ??
10. Involve area managers, staff members and field workers in training programmes to build their capacity.
- Agency: Line Departments.
Time: Long term
Priority: ??
11. Involvement of Botanical Survey of India, Zoological Survey of India in support training of the personnel in identified area.
- Priority: ??
12. Establish and strengthen the network of Department of Forest, Zilla Panchyats and NBPGR, NBAGR and NBFGR, Agricultural Universities to expand their activities to cover flora, fauna, domesticated plants and animals and to bring additional species for potential culture, documenting traditional knowledge / traditional conservation and use practices.
- Priority: ??
13. Promote micro level planning under Panchyats Raj programme for conservation of biodiversity and all related natural resources under the provisions in 73rd and 74th amendments of the Indian Constitution.
- Agency: State Government/Line Departments/Zilla Panchayat/NGOs.
Priority: ??
14. Need to identify degraded forests and wetlands and take up work of their ecological restoration on the basis of the scientific investigation. Work out harvesting rules after their restoration by fixing responsibilities of management and provisions for punishing those, who degrade these resources.
- Agencies : State departments, CBOs, NGOs. VFPC/FDA, Gramsabha.

Funds: State Budget.
Priority : 1

15. Constitute **Regional Biodiversity Conservation & Management Authority (RBAMA) at Nagpur** (for Nagpur, Gondia, Bhandara, Chandrapur and Gadchiroli districts) and **Jagdapur** (for Kanker, Bastar and Dantewada districts) headed by Divisional Commissioner as the Chairman and Conservator of Forests, as the Member Secretary.

This authority will have members from various governmental agencies like Agriculture (Regional Director or Joint Director), Forests (Conservator of Kanker Forest Circle and Director Indravati Tiger Reserve), Fisheries (Regional Director), Revenue (Collector of each district), Department of Animal Husbandry (Dy. Director), Department of Tribal Development and Culture, Chief Engineer, Irrigation Department, people's representative (Selected Member of Parliament and Legislative Assembly), Chief Executive Officer of Zilla Panchyats, , NGOs like VNCS, Surajya Pratishtan, BASCON, Ram Krishna Mission, Adivasi Harijan Kalyan Samittee, Vikas Mitra, representatives of JFM committees and Pargana Manzi Panchayat, Research bodies like Indira Gandhi Agriculture University,.

This authority should have appropriate representation from the underprivileged section of communities like tribals, fishermen, Dalits, women etc.

Agencies : State Government of Maharashtra and Chattisgarh.
Funds: State Budget.
Priority : 1

16. **Formation of Abujmar Hill Biodiversity Conservation and Management Authority (AHBCMA) with involvement of the representatives of Village Panchayats.**

- The Patel elected by nominated members from each village panchayats will head of this authority. It will have appropriate representation of women (at least 30%) and youths
- (at least 15 %) Recognize and use their traditional and social system in formulating this institutional structure.
- This authority will have powers to identify the thrust areas, mapping of resources, promoting sustainable use, collection of cess, planning and execution of all developmental programs.
- All programs will be based on the protection and management of natural resources and sharing of benefits.
- Education and awareness programme needs to be formulated in Maria language.
- Start information educational centers in Mar.

- Develop curriculum to suite the liking of Abujmaria.
- Only Abujmaria youths & people should be appointed as the employees of AHBCMA.
- The young and educated Hill Maria tribal youths (from Ramkrishana Mission, Narayanpur) should act as the members of work force or Change Agents. Pay them salary and wages.
- Funds for development programme to be deposited in the account of AHBCMA.
- **Involve Ram Krishna Mission, Narayanpur as the nodal agency.**
- Seek cooperation of experts, social workers to form comprehensive long-term programme for the protection of Abujmar Biodiversity.
- If needed start dialogue with the leaders of naxalite movement through Ramakrishna Mission.

Agency: State Government of Chattisgarh
 Funds: State budget.
 Duration: Two years.
 Priority: 1

17. Department of Revenue & Zilla Panchayat should take responsibility of management of potential regenerative areas, urban biodiversity (e.g. Floral diversity in & around Jagdalpur/ Kanker/ Dantewada, Dalpatsagar Lake at Jagdalpur, Ambazari in Nagpur city).

Funds: State Budget.
 Priority : 1

Strategy VI: Strengthening capacities for integrating and institutionalizing Biodiversity conservation and management.

a. Institutional capacity programme for all sectors of planning.

1. Form Regional & District Wetland Area Management Authority (WAMA) headed by Divisional Commissioner and Chief Executive Officer (Zilla Panchayat) respectively. This WAMA will have representatives from:

- (1) Line government departments like irrigation (State/Z.P.), fisheries, revenue, mining, forest and wildlife.
- (2) Departments of Universities like Zoology, Botany, fisheries.
- (3) Local community representatives.
- (4) NGOs.

Agency: State Government/Divisional Commissioner
 Funds: State budget.
 Duration: One year.
 Priority: 1

2. Make it mandatory to all panchayat institutions to plan and execute biodiversity conservation schemes. The Panchayat institutions need to be encouraged and empowered to prepare village level Natural Resource Management Plan. Train them & build their capacity.

Agency: Zilla Panchayat
 Funds: State budget.
 Duration: Two years.
 Priority: 1

3. The NGOs working in the field of Panchayat Institutes should be encouraged to strengthen programme of biodiversity conservation through Gram Panchayat through proper training & capacity building programs.

Agency: Zilla Panchayat
 Funds: State budget.
 Duration: Two years.
 Priority: 1

4. There are various schemes implemented in isolation by different departments like Revenue, Forests, Fisheries, Irrigation, Tribal Development, Rural Development, and

Animal Husbandry. There is a need to adopt integrated approach and coordination, while formulating and executing such programmes to address biodiversity conservation. Constitute joint inter-departmental coordination / monitoring cells or committees for the thrust areas e.g. JFM area, catchment area management of water tanks, water and soil conservation in forest & other areas, fisheries, fodder/grassland development and key department should act as the Nodal Agency. Involve local community members, beneficiaries, NGOs/CBOs in such committees as the members, in case of community-based work, and to suggest appropriate strategies and programmes.

Agency: State Departments.
 Funds: State budget.
 Duration: Two years.
 Priority: ??

5. The NGOs working in the area of wasteland & watershed development and afforestation must invariably concentrate to restore back its lost biodiversity. Form networks for coordinated efforts to yield better results.

Agency: NGOs
 Funds: Their own or external funds/State budget.
 Duration: Two years.
 Priority: ??

6. The NGOs working in forest and tribal areas have documented information on indigenous knowledge and practices related to flora and fauna with special reference to the status, threats, age - old management techniques, cultural and social ethics. Such information should be supplied to all the concerned government and non – governmental organizations and the other stakeholders. This information pool should act as a source to structure strategies and action programmes related to biodiversity conservation and benefit sharing.

Agency: State Departments/ NGOs.
 Funds: State budget.
 Duration: Two years.
 Priority: ??

7. Need to emphasize on the involvement of women, youths & dalits in particular in all biodiversity related programs. NGOs should modify their approach in using electronics and print media so as to give exposure to biodiversity related work at all level.

Agency: State Departments/NGOs.
 Funds: State budget.
 Duration: Two years.
 Priority: ??

8. Establish a commission to estimate the feed and fodder requirement availability and sharing for livestock in this and the other regions. After the evaluation of shortage, the responsibility for production of feed and fodder should be fixed on revenue, forest, agriculture and livestock department in proportion to their extent of powers and control on the land utilization pattern and area coming under their administration for producing feed and fodder in their jurisdiction.

There is a scope of improving fodder production either by improving grasslands by seeding, fertilizing and cutting at proper intervals but also growing fodder trees in a scientific manner.

Agency: State Departments.
 Funds: State budget.
 Duration: Two years.
 Priority: ??

9. Need to care for the quality and sustainability of products like straws produced from the agricultural crops. The newly introduced crop varieties have been selected on the basis of grain production and not on the straw that gives fodder for the livestock feeding.

Agency: State Department of Agriculture.
 Funds: State budget.
 Duration: Two years.
 Priority: ??

10. Appropriate training at regular intervals must be given to the PA staff including the Forest guards.

Agency: Forest Department.
 Funds: State budget.
 Duration: Two years.
 Priority: ??

11. Involve NGOs like Dharohar of Kondagaon, Rupantar from Raipur, Adivasi Harijan Kalyan Samitee from Asana/Jagdapur, Ram Krishna Mission from Narayanpur, Vikas Mitra-Kondagaon, Surajya Pratishtan/VNCS in Nagpur, Krushak Charcha Mandal/AWARD in Chandrapur in Agro-biodiversity inventorying, monitoring and conservation programme.

Agency: State Department of Agriculture.
 Funds: State budget.
 Duration: Two years.
 Priority: ??

12. Animal Husbandry department should create its own infra structure for conservation of domestic animals & birds.

Agency: Department of Animal Husbandary.
 Funds: State budget.
 Duration: Two years.
 Priority: ??

13. Enhance capacities of community institutes and involve Forest Protection Committees, Primary Forest Produce Cooperative Society and Village Panchayat as executing institutions and create necessary instruments.

i Training and capacity building of the staff & people from time to time must be undertaken.

ii Train & empower village level institutions (such as Village Forest Protection Committees, Community Forest Management Committees, Forest Development Authority, Gramsabha, Manzi Panchayat) in promoting participatory biodiversity conservation and sustainable use.

iii Tribals through proper training and facilities should be involved in commercial pisciculture by giving them rights over the management of small tanks as well as benefit sharing. They should be entrusted job of protecting local fish fauna on incentive basis. This will help to improve their economy.

iv. Involve local bodies such as Panchayat, JFM/VED committees, SHGs, Manzi Panchayat in training programmes of agro-biodiversity conservation.

Agency: State Department of Revenue/Forest/Agriculture, Zilla Panchayat.
 Funds: State budget.
 Duration: Two years.
 Priority: 1

14. Establish Regional and district level biodiversity information Centre with computerized information system on biodiversity of the area through multistage and multi agency inputs.

Agency: Collectorate/ Zilla Panchayat
 Funds: State budget.
 Duration: Two years.
 Priority: ??

15. Capacity building programme for the NGOs, community based organizations, Panchyats to handle issues of Intellectual Property Right.

- Implement this program through other line departments and actors like governmental agencies, private sector, scientists and technologies and local knowledgeable individuals.

Agency: Zilla Panchayat.
 Funds: State budget.
 Duration: Two years.
 Priority: ??

16. Promote role of NGOs as biodiversity management institute in various programs.

- NGOs significant role in acting as proactive pressure group and help people in the protection of biodiversity.
- Involve NGOs in all planning process and execution of programmes in the capacity of the member of committees at various levels from village to district and regional level.
- Instruments are also required to create scope for the involvement of NGOs in all public hearings and their access to information.

Agency: State Departments.
 Funds: State budget.
 Duration: Continuous process.
 Priority: ??

17. Promote NGOs role in implementation of Environmental Impact Assessment by accommodating them as the member of the community.

18. Promote suitable, impartial institutional mechanism for proper Environmental Impact Analysis.

- Empower Regional Biodiversity Conservation Management Authority or State Biodiversity Board to undertake this work with suitable representation from the NGOs and CBOs, instead of assigning this job to any technical consultancy services.

Agency: State Government.
 Funds: State budget.
 Duration: Two years.
 Priority: 1

19. Involve NGOs and define their role in the proper monitoring of pollution impacts on biodiversity, stopping pollution and restoration..

Agency: State Government.
 Funds: State budget.
 Duration: Two years.
 Priority: 1

20. Identify hill Maria youths as the change agents in Abujmar, build their capacity through proper trainings

- Promote involvement of abujmar community in biodiversity conservation through their capacity building programs

Agency: State Department of Forest/ Tribal Development/Ramkrishna Mission..
 Funds: State budget.
 Duration: Two years.
 Priority: ??

b. Human resources development, including education and training for various sections of society.

1. Extension workers in the department of Agriculture & Animal Husbandry are the mediator and acts as a catalytic agent between scientist and farmer.

Train and involve them in biodiversity conservation (bot organic and conventional ways).

Agency: State Department of Agriculture.
 Funds: State budget.
 Duration: Two years.
 Priority: ??

2. Training programmes in legal stream:
 Arrange training programmes on laws for the field and administrative staff of the forest department, judiciary, Government Councils and NGOs also. This will update them and will in turn reduce unnecessary correspondence. The cases eventually will be prepared flawless.

Agency: State Departments.
 Funds: State budget.
 Duration: Continuous process.
 Priority: ??

3. Develop capacity of the cultural/religious community heads like Manzi, Mati Pujari, Gaita and Perma in Bastar for biodiversity planning and management.

Agency: State Departments Forest/ Zilla Panchayat..
 Funds: State budget.
 Duration: Continuous process.
 Priority: Agency: State Department of Agriculture.

4. Train and educate villagers to work as extension workers in agriculture, fisheries, sericulture, apiculture, organic agriculture and horticulture farming etc.

Agency: Agriculture Department.
 Funds: State budget.
 Duration: Continuous process.
 Priority: 1

5. Capacity building for planning:

Decision makers from the level of village Panchayat to district, region and state need to be involved making them aware at various levels about the perspectives of biodiversity conservation and activities.

Expose them to the carrying capacity of ecosystems, local stakeholders, various laws, regulations and treaties.

Involve private sector entrepreneurs as the stakeholders like pharmaceuticals, seeds, eco-tourism, NTFP traders etc.

Agency: State Departments.
 Funds: State budget.
 Duration: Continuous process.
 Priority: 2

6. Capacity building for biodiversity monitoring and inventorying

Involve school and college teachers, Patwari, Vaidus, Kuruk, students and youths through training

Educational Institutes can play effective role in collection of information on biodiversity resources; spare time and can utilize skills.

Agency: State Department of Education, Forest and Zilla Panchayat.
 Funds: State budget.
 Duration: Continuous process.

- Priority: 1
7. Awareness generation camps can be arranged for making people aware of importance of artificial insemination in up gradation of “ Desi” breeds of cattle. These camps can be conducted taking 4 – 5 villages in cluster at a time.
 8. More village level para-vets (selected through tribal youths) can be created and given orientation / training regarding importance of Aseel & Kadaknath breed of poultry and its preservation along with ensuring their vaccination, deworming and health care at remote village levels. To provide services to villagers, pay incentives to local tribal para-vets for first two or three years.

Agency: State Department Animal Husbandary/ Zilla Panchayat.
 Funds: State budget.
 Duration: Continuous process.
 Priority: ??

9. Imparting knowledge in the schools and colleges situated on the fringes of Protected Areas about flora & fauna available in and around the PA. The special emphasis to be given to promote environmental education and awareness programme for village youths and students in and around Indravati Tiger Project for protection of wild buffalo), Kanger NP (for hill myana), Bhairamgad (Wild Buffalo).

Agency: State Department of Forest, Education/ Zilla panchayat/NGOs.
 Funds: State budget.
 Duration: Continuous process.
 Priority: Agency: State Department of Agriculture.

10. Development of Curricula and education material.

Form a committee to develop this material on the basis of the review of available material and information and observations linked with the subject

Material needs to be prepared in local language for the use of community

Agency: State Department of Education/ Universities.
 Funds: State budget.
 Duration: Continuous process.
 Priority: 1

Strategy VII: Mobilizing an integrated information, education and communication system for biodiversity conservation.

Action Plan VII: Proposed Actions

a. **Biodiversity conservation awareness and information programme for and by local communities, government agencies and political, professionals, NGOS and others.**

1. Educate school and college going students about environment and its legislation. In some areas the subject of environment is introduced but most of the schools and colleges are missing their strategic orders for the inclusion of this subject in their curriculum. Similarly excursions, field visits also should be planned for the school and college going students.

Agency: State Department of Education/ Universities.
 Funds: State budget.
 Duration: One year.
 Priority: ??

2. Dissemination of information on agro diversity through exhibition, newspaper, magazines, T. V and audio-visual aids, which would be very much effective in understanding conservation & management of agro-diversity.

Agency: State department of Education, NGOs, CBOs, Universities.
 Funds: State budget.
 Duration: Continuous process.
 Priority: ??

3. Line government officials should be motivated in the process of biodiversity conservation through proper training.

Agency: YASHADA, Pune / VNCS, Nagpur/ Agriculture Department

Funds: State budget or through grant-in-aid to the NGOs
 Duration: One year.
 Priority: 1

4. The public representatives do not understand issues regarding agricultural biodiversity seriously. They are unable to represent and raise issues in assembly or Parliament in order to have critical solution for conservation of biodiversity. Need to make them aware about agro diversity conservation, legislations and treaties, WTO, GMO, BT seeds etc through appropriate trainings.

Agency: YASHDA, Pune, Government of Chattisgarh, Parliamentary Committee on Agriculture/ State Legislature.
 Funds: State budget.

- Duration: One year.
Priority: 1
5. Need to introduce and make traditional agro - practices popular in Vidarbha like:
- I. Cultivation of Jowar in Tur as sole crop or Tur in Jowar (locally known as Irwa) for protecting crops from diseases and pests.
 - II. Nitrogen fixing legume crops such as:
 - a. Sesame mixed with sorghum (Jowar) / millets to combat striga.
 - b. Castor protecting Ginger and Curcuma.
 - c. Hibiscus & Sun – hemp in cotton, green gram in sorghum
 - III. Trap crops:
 - a. Chickpea as trap crop against rat in wheat.
 - b. *Cleistanthus collinus* (Locally known as *Garadi*) leaves are used in paddy cultivation to combat the leaf roller.
 - c. Lady's finger, *Hibiscus Subdarifa* works as a trap crop in Cotton and various crops to attract different sucking pests.

Agency: State Department of Agriculture/ PDKV/ Universities.
Funds: State budget.
Duration: One year.
Priority: ??

6. In the field of livestock, unlike crop, liking to the transfer of technology generated and the values of various livestock products are not efficiently transmitted to villages. It is necessary that a very intensified awareness program through effective extension methods and materials by a trained livestock extension specialist should be carried out. This will awaken livestock keepers about the value of their enterprise in national economy and also encourage them for adopting scientific methods of conservation and management.
7. Need to strengthen extension education program of the university on conservation of livestock diversity that is at present at zero level and also creating extension specialist.

Agency for Action no. 7 & 8:
Breeders Association, Milk Federation, Gram Sabha/ SHGs.
Funds: State/ central planning budget/ UNDP.
Duration: One year.
Priority: ??

8. Arrange awareness and training programme for various groups like cooperative societies, NGOs, SHGs, and the local communities, performing role in livestock and various scientific methods of their management.

Agency: State Department of Animal Husbandary/ Universities.
Funds: State budget.

Duration: One year.

Priority: ??

9. The Agriculture/Veterinary Universities and State Animal Husbandry Department should shoulder the responsibilities through NGOs for rural awakening programmes to go a long way in identifying and conserving not only livestock but also the inherent biodiversity.

Funds: State budget.

Duration: Continuous process.

Priority: ??

10. Awareness and information programme for community members

- Biodiversity Conservation programmes, related laws and regulations.
- Various policies of the government related to biodiversity conservation.
- Develop human capacities.

Agency: State Departments/Universities/NGOs.

Funds: State budget.

Duration: One year.

Priority: ??

11. Awareness and information programmes for policy makers and administrators.

- Involve representatives of Panchyats, members of the legislative assemblies and parliament, government officials of all department
- Provide them information on:
 - i. Biodiversity conservation program.
 - ii. Inter departmental coordination.
 - iii. Role of flora, fauna and natural resources
 - iv. Related legislations
 - v. Need of community involvement and structure
 - vi. Success examples
 - vii. Laws and treaties
 - viii. Regulatory mechanism.
 - ix. Scientific and technical skills
 - x. Conservation sites
 - xi. Sustainable development models

Agency: State Departments/NGOs/ Universities.

Funds: State budget.

Duration: Continuous process.

- Priority: ??
12. Develop human capacity of local knowledgeable individuals like fishermen, mati pujaris, Vaidus, NTFP collector, caretaker of sacred groves or ponds, community managers of JFM areas in biodiversity research and management information system through proper training.
- Develop capacities on the same lines at the level of Panchayats and educational institutes.
- Agency: State Department of Forest, Revenue/NGOs/ Universities.
 Funds: State budget.
 Duration: Continuous process.
 Priority: ??
13. Awareness and information for private sector entrepreneurs involved in use of biodiversity.
- Develop human capacity at this level through study and training for devising utilization techniques on sustainable basis.
- Agency: State Department of Industries/NGOS/ Universities.
 Funds: State budget.
 Duration: Continuous process.
 Priority: ??
14. Awareness and information programme on biodiversity conservation for law enforcing authorities.
- Involve department of Police, Judiciary, members of the Bar association, experts of forensic laboratories in training programs to build their capacity in handling cases related to biodiversity conservation
- Agency: Judicial Officers Training Institute / Universities.
 Funds: State budget.
 Duration: One year.
 Priority: ??
15. Awareness and education programme for the children and youths not joined school and colleges.
- Build capacity of young animators to shoulder responsibilities.
 - Arrange funds through state planning budget.
 - Involve competent NGOs with sound knowledge and skills to arrange trainings of capacity building.

Agency: State Department of Education/ NGOs/CBOs.
Duration: Continuous process..

16. Need to give special emphasis on educating and providing information to the under privileged sections of society on biodiversity management and sustainable use.

- Involve women, landless, Dalits
- Involve competent NGOs in conducting programs.

Agency: NGOs/Panchayat.
Funds: State budget.
Duration: Five year.
Priority: ??

17. Literacy Campaign at grass root level needs to be initiated for conservation and sustainable management of agro-biodiversity, involving school/ colleges/ gramsabha, SHG, Manzi Panchayat, Matipujari and management committees of Deogudis, Forest protection Committees etc.

Agency: NGOs/ Panchayat/ State Departments/ Universities.
Funds: State budget.
Duration: Five year.
Priority: ??

18. Involve farmers, SHG, Manzi Panchayat, Gram-Sabha, NGOs, CBOs, and Zilla Panchayat in training programme of domestic animal biodiversity conservation so that they can join implementation activities.

Agency: NGOs/ Panchayat/ State Departments/ Universities.
Funds: State budget.
Duration: Five year.
Priority: ??

19. Arrange cattle shows, exhibitions, rallies etc. to popularize the breed.

Agency: NGOs/ Panchayat/ State Department of Animal Husbandry and Universities.
Funds: State budget.
Duration: Continuous process.
Priority: ??

20. On the basis of Ayurvedic health concept, start health education programme to increase awareness about herbal plants and their use (home remedies for simple ailments) health education should be launched at district, block & village level.

Agency: NGOs/ Panchayat/ State Departments/ Universities.
Funds: State budget.

Duration: Five year.
Priority: ??

b. Creating/Strengthening central and diffused databases on biodiversity, including at community level.

1. Data Base:

build adequate database for illegal trade in wildlife and its products, trade route map, socio economic aspects of offences, measures to curb the offences, modus operandi of various offences.

Agency: NGOs/ Forest Department.
Funds: State budget.
Duration: One year.
Priority: 1

2. Create information base at village cluster level through Peoples' Biodiversity Register for the information and documentation of minor tuber crops.

Agency: NGOs/ Panchayat /Forest Department/ Universities.
Funds: State budget.
Duration: One year.
Priority: 1

3. Create biodiversity information base at district and regional level with linkage to village, state and national level database

Agency: Forest and Revenue Departments/ Universities.
Funds: State budget.
Duration: Five year.
Priority: ??

c. Capacity building and incentives to formal and informal (folk) media for coverage on biodiversity.

1. Develop capacity of folk artists through trainings in local language about biodiversity. Pay them incentives and rewards. Utilize hats, parab mandais and religious occasions like amavas tyohar, Dussherra celebrations at Jagdalpur, Chaitrai, Navakhani, pakal – pandug, chikur kaiya, Hareli and Amakhai.

Agency: NGOs/ Panchayat/ State Department of culture, tribal development and social welfare / Universities.
Funds: State budget.
Duration: Five year.
Priority: ??

Follow Up Mechanism

Institutional set-up to implement or catalyze and monitor the biodiversity strategy and action plan at eco- regional / regional level:

1. Constitute an independent **Central India Ecoregional Biodiversity Authority** headed by the eminent environmentalist/scientist or administrator. It should consist of NGOs, CBOs, officials of Forest, fisheries, irrigation departments, botanists, zoologists, law enforcement authorities, Agriculture, animal husbandry, members of the pollution control board of all concerned states, atleast three representatives of Gramsabhas/ VFPCs of the region etc. This authority would identify biodiversity rich areas, frame policies & implement programs. The state government should provide necessary fund from planning budget to this authority for successful implementation of the programmes of local communities. It would function under the aegis of Union Ministry of Environment & Forests.
2. Constitute Regional Biodiversity Management Authority (RBMA) at Nagpur & Jagdalpur. (Refer Action Plan V - d (16) for composition) except for Abujmar hills.
3. Formation of **District Agriculture & Livestock Biodiversity Management Authority (DALMA)** to deal and monitor (composition to be finalized by DALCMA),
or
 District Level Biodiversity Management Authority on the same line mentioned in Action Plan V – d (17). Funds requirement needs to be calculated on the basis of the desired facilities and activities.
4. The priority should be given to prepare wetland management plan. The irrigation department should form **Wetland Biodiversity Management Authority** to prepare management plan and for its proper implementation at the regional level. This authority should include representatives of NGOs and departments like Forest, Revenue, and Fisheries & Wildlife etc.
5. Action plans on various strategies, suggested above, are of medium and long-term duration and they involve different agencies playing a role of the actor for ineffective implementation of the action plan.. These agencies are working, so far, without any coordination and specific object.

It is necessary to have a well-knit coordination amongst various agencies, which have direct or indirect relationship with biodiversity conservation. At each district level there should be a coordination committee consisting of District Animal Husbandry officer, designated scientist from the University, District Agriculture Officer, District Forest Officer, District Fisheries Officer, Chief Engineer – Irrigation, atleast two NGOs , one representative each of from Zilla Parishad/ Block Panchayat and two representatives of Gramsabhas from two villages from each block/panchayat samittee area (it will be on rotational basis and the appointment of such members will be effective for one year,

so that maximum number of villages or village clusters could be represented) .This committee should prepare district biodiversity action plan. Such action plans will be scrutinized and included in the biodiversity action plan of the state or ecoregion. The meeting of the state and district level committee should be held every three months followed by an annual meeting.

The state level coordination committee should also suggest a plan of action for the conservation and improvement of biodiversity at local level. The state government should develop an inbuilt review system for the periodical evaluation of such plans with the involvement of NGOs,CBOs, SHGs, local communities etc.

6. There should be an **independent Abujmar Hill Biodiversity Management Authority**. (Refer Action Plan V – d (17) for composition).
7. Avail guidance and facilities developed by ICAR and NBPGR for preservation of agricultural germplasm.
8. Ensure active involvement of ICAR, NBPGR, NBAGR, NBRI, NDDP, and cooperative milk federations.

ACTIVITIES

A. Meetings of Working Group/ Sub-group and Advisory Committee Members:

The meetings of the members of Working Group (WG) / Sub-group (SG) /Advisory Committee (AC) were held as per details mentioned below.

<u>Date</u>	<u>Participation</u>	<u>Place</u>
1 st September 2000	WG/AC	Jagdapur
18 th September 2000	WG/AC	Nagpur
10 th October 2000	WG	Nagpur.
30-31 st December 2000	WG/SG	Karwa, Distt. Chandrapur.
7 th January 2001	WG	Nagpur.
13 th January 2001	WG/SG	Nagpur.
21 st January 2001	WG/AC	Nagpur.
10 th February 2001	WG/SG	Nagpur.
17 th February 2001	WG	Nagpur
18 th February 2001	WG/SG/AC	Chandrapur
19 th February 2001	WG/AC	Jagdapur
19 th March 2001	WG/SG	Nagpur.
22 nd March 2001	WG/SG	Nagpur
7 th April 2001	WG/AC	Nagpur
4 th June 2001	WG/SG/AC	Jagdapur.
10 th May, 24 th June and 2 nd July 2001.	WG/AC	Nagpur
2 nd July 2001	WG	Nagpur
22 nd July 2001	WG	Nagpur
28 th July 2001	WG	Durgapur, Chandrapur.
1 st September 2001	WG/SG/AC	Jagdapur
9 th September 2001	WG	Nagpur
2 nd November 2001	WG	Nagpur
26 th and 27 th February 2002	WG	Nagpur

B. Meetings and Workshops for the community members, representatives of Government Departments, NGOs and other stakeholders:

1. Environmental Camp was organized by VNCS at Ramtek from 14 to 16th July 2000 as a part of environmental education program of VNCS, designed for the youths staying in and around Protected Area .It was attended by 69 participants from nearby villages. The participants developed an education programme & training module related to the biodiversity conservation for the youths, community & panchayat members, staff of various governmental / developmental agencies.
2. The village meetings were arranged at Brahmapuri and Nagbhid (district Chandrapur) on 27th and 28th July 2000 by the WG-BSAP with the help of local NGOs for the community members,who involved in sustainable agriculture and joint forest management to give information on NBSAP and seek their suggestions.

3. Vidarbha Lok Vikas Manch organised a workshop on 3rd August 2000 at Nagpur for the representatives of NGOs involved in Joint Forest Management, Self Help Groups, Human Rights and Panchayati Raj. The participants shared information on agricultural, floral and faunal biodiversity of the area.
4. VNCS arranged a workshop on 5th August 2000 as a part of “Environmental Orientation through School Education” project, at village Hiwara Bazar, district Nagpur. The villagers, teachers and youths, from the adjoining area of Pench National Park attended this workshop. Information regarding BSAP was imparted to them, so that they can share it with other villagers and collect their inputs in order to help in forming draft of BSAP.
5. VNCS arranged a village level awareness campaign- cum- mobile poster exhibition at village Hiwara, Manegaon, Patharai, Zinzeria, Wadamba, Sawara, and Bothia - Palora of Nagpur district from 8th to 10th August 2000.
6. A workshop was organised for the youths and villagers, staying in and around Nawegaon National Park, at Nawegaon on 14th & 15th August 2000 on the ecological status of PA, the role of community members in biodiversity conservation and participatory management of PAs.
7. A village level meeting was arranged at Pench on 26th August 2000 to discuss issues related to the biodiversity of Pench National Park.
8. A meeting and workshop was arranged at Boladha, Distt. Nagpur on 30th and 31st August 2000 for the youths and villagers to discuss BSAP, role of villagers, sustainable agriculture etc.
9. A meeting of the representatives of Forest, Revenue and other departments, working group members and public representatives from Bastar region was arranged at Jagdalpur (Bastar) on 1st September 2000 at the office of Divisional Commissioner, Bastar region to discuss on NBSAP process in Bastar region.
10. A press conference was arranged at Jagdalpur (Bastar) on 2nd September 2000 for the representatives of various newspapers, cable network and television media on BSAP process.
11. A meeting of Manzi – Mukhiyas (the chief of a villages cluster in Bastar, who enjoy respect as the community head) was arranged at the office of Tehsildar, Jagdalpur (Bastar) on 2nd September 2000 to give them information on BSAP process and encourage their participation. Hand- bills prepared in Halabi language were distributed amongst them.

12. The meetings of the representatives of NGOs, Government departments and community members from Bastar region were arranged on 3rd and 4th September 2000 at Dantewada, Kondagaon, Kawalnar, and Mailwada etc.
13. VNCS arranged a Gram Sabha at Hiwarabazar, Distt. Nagpur on 10th September 2000 for collecting information on BSAP.
14. VNCS arranged a Cycle March from 27th September to 6th October 2000, which passed through 28 villages of Gadchiroli district. The Gram Sabhas were arranged during this period to impart information on BSAP and seek public opinion on conservation and management of biodiversity in their area.
15. A one-day meeting-cum-workshop of the villagers and JFM committee members was arranged by VNCS on 5th October 2000 at Mahadwadi, Distt. Chandrapur for collecting information on BSAP.
16. A workshop of NGOs associated with Vidarbha Lok Vikas Manch was arranged by YUVA, Nagpur on 10-11th October 2000.
17. A workshop was organised on 12th October 2000 at the office of Divisional Commissioner, Bastar region at Jagdalpur for the members of Working Group & Advisory Committee, representatives of various governmental and non-governmental agencies and public representatives.
18. A meeting of BSAP working group and officials of Indravati Tiger Reserve was arranged on 13th October 2000 at Bijapur in Bastar region.
19. A public meeting was arranged at village Farsegad, Distt. Dantewada on 30th October 2000 for the community members staying in and around Indravati Tiger Reserve (Bastar). The tribals from village Sagmeta, Faresgad and Semapalli attended this meeting and expressed their views on the problems related to the ecological status of their area and livelihood issues, survival of wild buffalo & Swamp Deer, role of administrative & community institutions.
20. A meeting of working group members and the officials of Ram Krishna Mission (NGO working in Abujmar), Naryanpur, Distt. Kanker was held on 16th October 2000 at their office to discuss biodiversity related issues of Abujmar .
21. A meeting was arranged on 1st November 2000 at Kolutmara, Distt. Nagpur. Tribals of adjoining areas of the Pench National Park attended this meeting
22. Meetings of community members were arranged at Gondia, Makkitola, Majidpur, Gangazari, Tiroda, Bhandara and Tumsar of Vidarbha region on 2nd and 3rd November 2000 on conservation of local crop varieties and cattle breeds, management of wetlands, forest and fisheries.

23. Joint Forest and Wildlife Management Network of Vidarbha arranged a workshop on 15th November 2000 at Nagpur for the representatives of NGOs/CBOs/VFPCs on the scope of JFM programme in biodiversity conservation.
24. A community meeting was arranged at Ramtek on 16th November 2000 on management of medicinal plants, wetlands, fishes and conservation of biodiversity.
25. Public meetings were arranged on 27th November 2000 at village Deolapar, Belda, Maudi and Dahoda of Nagpur district of Vidarbha region for the community members, particularly agriculturists, tribal, youths and women to discuss on the management of local biodiversity.
26. A workshop for NGOs, involved in Joint Forest Management programme in Vidarbha region, was organized by VNCS at Nagpur on 30th November 2000 to formulate strategies on community participation in BSAP.
27. Environmental Education Camp was organized by VNCS at Belda, Distt. Nagpur on 2nd and 3rd December 2000. The participants were trained in PRA techniques to collect data for BSAP.
28. A meeting of NGOs working in the field of rural development was arranged on 22nd and 23rd December 2000 at village Walani, Distt. Nagpur. The schemes on integrated rural development and its linkages with biodiversity conservation was discussed and proper institutional mechanism was identified at government and community level.
29. A workshop for the members of Joint Forest and Wildlife Management Network-Vidarbha was arranged on 26th December 2000 at Nagpur to assess data collected on BSAP.
30. Environmental Camps for the youths were arranged at Beldha (Distt. Nagpur) on 28-29th December 2000, Sataratukum (Distt. Chandrapur) on 30th December 2000, Karwa (Distt. Chandrapur) on 1st January 2001 & Shankarpur, Ta. Bramhapuri, Distt. Chandrapur from 6 – 7th January 2001. The participants submitted data collected by them on BSAP from their respective areas and shared information with others.
31. A meeting of working group members, government officials was arranged with the Principal Chief Conservator of Forests-Maharashtra State, Mr. R. B. Sule on 8th January 2001 at Nagpur to review progress in BSAP.
32. Vidarbha Lok Vikas Manch arranged a workshop for network members at Khaparkheda, Distt. Nagpur on 9th January 2001 to discuss livelihood and biodiversity, involvement of women in agricultural development and conservation of traditional crop varieties.
33. The BSAP working group members met executive committee members of Vidarbha Lok Vikas Manch and discussed BSAP process with them in a meeting held at Nagpur on 14th January 2001.

34. A workshop for NGOs, working in the field of Joint Forest Management, was arranged at Nawegaon, Distt. Gondia on 14 and 15th January 2001 by Joint Forest & Wildlife Management Network - Vidarbha.
35. Vidarbha Nature Conservation Society (VNCS) organized a workshop for the young environmentalists of VNCS, working in 52 villages of Chandrapur, Gadchiroli, Nagpur, Gondia and Bhandara districts of Vidarbha region, at village Saigata from 27th to 29th January 2001. The participants belong to the tribal areas and involved in environmental education and natural resource management. They were made aware about BSAP process and encouraged to involve in this process. The trained participants arranged gramsabhas at various villages and gave information to the community members on NBSAP process. They collected useful data on the status of flora & fauna, agricultural diversity, local breeds of the cattle & poultry, wetlands, and suggestion from the people on conservation of biodiversity.
36. Vidarbha Environmental Conference was arranged at Mohapa, Distt. Nagpur on 1st and 2nd February 2001 by Vidarbha Paryawaran Parishad Samanwaya, which was attended by 125 representatives of NGOs and agriculturists from Vidarbha area. NBSAP process at ecoregional and sub state level was discussed during this conference. Participants exchanged their views on sustainable agriculture and conservations of agro-diversity.
37. Nisarga Vigyan Mandal arranged a teachers-training workshop at Nagpur on 6th February 2001. Participants discussed present policies of the government on environmental education & biodiversity conservation. They identified major gaps and suggested suitable educational programmes on conservation of biodiversity.
38. YUVA arranged a workshop for the members of Vidarbha Lok Vikas Manch on 14th February 2001. Participants discussed process of NBSAP and shared their knowledge with working group members.
39. A Workshop was organised at the office of the Divisional Commissioner, Nagpur on 14th February 2001 for the members of Advisory Committee and Working Group, representatives of Governmental agencies and NGOs from Vidarbha region. Mr. J.S.Sahariya, Divisional Commissioner-Nagpur region, chaired it.
40. The Deputy Director, Deptt. of Animal Husbandry, Bastar region arranged a meeting on 20th February 2001 at Jagdalpur on biodiversity conservation and livestock. The District Officers of Animal Husbandry Department, Coordinator-BSAP (CIE) and DANIDA-BILDIP, members of working group discussed on the ongoing programmes of government, present policies, threats to the local breeds of cattle and poultry & remedial measures.
41. A meeting of the Coordinator, working group members, scientists and experts of Zonal Agricultural Research Center of Indira Gandhi Agriculture University was arranged at Jagdalpur 20th February 2001 to discuss and formulate action plan on conservation of agricultural crop varieties, local breeds of the cattle and poultry, medicinal plants and traditional practices of Bastar tribes.

42. The Coordinator, working group members and scientists of ASI discussed NBSAP process in a meeting arranged by Anthropological Survey of India, Jagdalpur Center on 20th February 2001. The participants shared information on conservation oriented traditional practices of Madias and other tribes from Bastar. It helped WG to formulate recommendations for BSAP.
43. The Ram Krishna Mission, Narayanpur Dist. Kanker arranged meetings with the tribals of Abujmad area at village Kuhukuda, & Kohkameta on 21st February 2001. The Regional Coordinator-BSAP, workers and officers of RKM and working group members attended these meetings and exchanged information on conservation of flora and fauna of the area.
44. The Block Development Officer- Sakoli, Gramin Yuva Pragatik Mandal ,Green Brigade–Bhandara and VNCS organized a joint workshop for NGOs, villagers engaged in agriculture and forest management, officials of state departments, representatives of panchayat raj institutions at Sakoli, Distt. Gondia on 27th February 2001. The prominent agriculturists involved in collection & conservation of local species of paddy from Tiroda and Tumsar areas of Bhandara and Gondia districts also attended this workshop.
45. A workshop for the NGOs, scientists and individuals, involved in the field of rural development was organized by Center of Science for Villages at Wardha on 20th April 2001 to discuss BSAP, conservation of agro-diversity and sustainable use of natural resources.
46. The Conservator of Forests- Wildlife (Vidarbha Region) organized a meeting-cum-workshop for all the Protected Area Managers from east Vidarbha area on 25th April 2001 at Nagpur to discuss BSAP process and PAs.
47. A meeting with the head of the department and staff of Zoology and Botany Department of Nagpur University was arranged on 27th April 2001 to discuss BSAP and the role of Nagpur University.
48. A workshop of the teachers and parents was held at Village Deolapar (Distt.Nagpur) on 28th April 2001, village Pathrai (Distt.Nagpur) on 30th April 2001. Participants exchanged information on threats to the biodiversity, remedial measures, role of schools and panchayat institutions in bringing awareness on biodiversity conservation.
49. A meeting of fishermen and agriculturists was organized at village Tidaka and Kanholi of Gondia district on 14th October 2001 on local species of fishes, threats to, their role in ecosystem and traditional conservation practices.
50. A meeting with the villagers of Katangtola in Gondia district was held on 3rd November 2001 to exchange information on traditional varieties of paddy and their conservation efforts.

51. A workshop was arranged for the members of Working Group, Advisory Committee, NGOs, representatives of the people, administrators in the office of Divisional Commissioners- Bastar at Jagdalpur on 4th June 2001 to review progress in BSAP.
52. A workshop for the young environmentalists of VNCS from Gondia and Gadchiroli district was held at Nawegaon from 8th to 10th June 2001 and at Gadchiroli on 2nd July 2001 to assess information collected by them on flora, fauna, crop and livestock diversity of their areas.
53. A workshop of all the members of Working Group and experts from Vidarbha area was held at Van Bhawan, Nagpur on 22nd and 23rd July 2001 to review progress in BSAP and finalise draft plan.
54. A meeting of working group members with fishermen of village Goregaon, Rangitola and Kohalgaon in Gondia district was arranged on 30th July 2001 to discuss status of the local fishes.
55. The Joint Director of Agriculture - Nagpur region arranged a meeting of district agriculture officers and field staff at Nagpur on 7th August 2001 to discuss BSAP process, present state strategies and programmes on conservation of agro-diversity.
56. The Coordinator –BSAP (CIE) and Divisional Commissioners-Bastar jointly organized a workshop of governmental and non-governmental agencies, representatives of the people at Jagdalpur on 23rd August 2001. The conveners of the sub working groups submitted drafts and reports on BSAP.
57. A writing-workshop of the members of working & sub- working group was organized at ZARS, Jagdalpur from 24th to 25th August 2001 to prepare draft BSAP of the region.
58. A meeting of the villagers of Kutru and Mangipeta, Dist. Dantewada (Bastar) was arranged on 27th August 2001 to discuss people's role in biodiversity conservation, protection of Wild Buffalo and present status of flora & fauna in the area.
59. A workshop for NGOs and members of JFM committees was arranged at village Saigata, Dist. Chandrapur on 22nd and 23rd September 2001 on the role of JFM in biodiversity conservation, sustainable agriculture and livelihood issues.
60. A meeting of the villagers was held at Walani, Distt.Nagpur on 2nd October 2001 to discuss linkages of BSAP with rural development, water conservation and livelihood issues.
61. A meeting with the people of village Karmazari, PENCH Tiger Reserve of Seoni district in MP was arranged on 11th October 2001 to discuss interstate issues like crop raiding & cattle kills, inter-state monitoring on poaching & smuggling of medicinal plants, community involvement in joint PA management etc.

62. A meeting of the village level Coordinators of YE movement of VNCS was held at Nagpur on 14th October 2001 to process the information collected by VNCS-volunteers on flora, fauna, agriculture and livestock-diversity and conservation practices of the communities.
63. VNCS arranged environmental camps for YE volunteers at village Belda in Nagpur district on 22nd October, Gadchiroli on 28th October and village Kanholi in Gondia on 24th October 2001. The VNCS volunteers, involved in NBSAP process, submitted data collected by them on biodiversity conservation.
64. Maharashtra Abhayaranya Parishad was held at Totladoh on 25th October 2001. A special session was arranged to discuss process of NBSAP, present management of PAs, livelihood issues, man-management conflicts etc. Participants expressed their views on the role of communities in managing biodiversity & present government strategies.
65. The Coordinator, Mr.Dilip Gode attended various workshops and meetings organized at zonal and national level as a part of NBSAP process. He attended NBSAP national workshops held at Delhi and regional workshop arranged at Delhi, Raipur and Calcutta.
66. Dr.S.B.Suklikar, President of VNCS and member of BSAP Working group attended a workshop held at YASHADA, Pune on livestock and biodiversity. He shared his views with all the participants and appraised them about progress in BSAP process of Central India Ecoregion.

C. Media publicity:

Local newspapers, All India Radio, television and cable network gave publicity to BSAP process in central India ecoregion. Prominent newspapers supported BSAP process includes Hitvada, Hindustan Times, Dainik Bhaskar, Highway Channel, and Navbharat.

List of the members of Working Group, Advisory Committee and Sub – Groups.

A) Members of Working Group

Coordinator:

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- 7 Mr. Kaushalendra Kumar (Representative of Forest and Wildlife Dept. Chattisgarh
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B) Members of Advisory Committee:

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- 13 Mr. Maruti Chittampalli, Wildlife expert,
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- 14 Mr.Vivek Dhand, Secretary –PWD (CS) & Ex-Divisional Commissioner-Bastar,
represented Bastar region till his transfer to the state headquarter.
- 15 Mr.Ravindra Sule and Mr.S.K.Bali represented Maharashtra Forest Department as the
Principal Chief Conservator of Forests till their retirement.
- 16 Mr.Sanjay Mokhariya, IFS and Mr.C.P.Roy, IFS, represented Indravati Tiger Reserve &
Jagdalpur Forest Circle respectively, till their transfer to Madhyapradesh.

C) Members of Sub- groups from Vidarbha region:

1. FLORA:

Dr. N.R.Ugemuge, Nagpur, Dr. Shriram M. Bhuskute, Amgaon, Dr. R. P Moghe, A.S.Kalaskar, DM-FDCM, Brahmपुरi, Sanjay Thakre, Dy.CF-Chandrapur, M. M. Jamkhindikar, Retd.CCF, R. S. Bhangu, ACF, Nagpur.

2. Industries: Dr. P.K.Gandhi, WCL, Dinesh Gholse and A.A.Deshpande, MPCB.

3. FAUNA:

Maruti Chittampalli, A.S.Kalaskar, Dilip Gode, Sanjay Thakre, Adv. Sanjay Gajbhiye, Prof. V. N. Mahajan, Dinesh Gholse, Dr. R. T. Gahukar, Shree Bhagwan-CF/Wildlife, Dr. W. R. Bhandarkar, M. M. Jamkhindikar, Mahendra Rahile, Dr.R.Andrew, Mrs. K.A. Kalaskar.

4. AGRICULTURE:

Anil Mahatme, Prof. Ram Gawande, Surayabhan Khobragade, Avil Borkar, Shreenarayan Dongarwar, Dr.Nannaware, Prof. Kadu, Prof. Barbrekar Mr. Satish Pawade, BDO, Nitin Kapase and Vijay Kumar Shende.

5.LIVESTOCK:

Dr. B. G. Katpatal, Dr.S. B. Suklikar, Dr.Chandrashekhar Sharma, Dr. M.D.Kothekar, Dr. Pramod Shinde.

6. CULTURE / RELIGION:

Gurudas Semaskar, Gunwant Vaidya, Pravin Chichghare, B.Rahile, Sandhya Ingle

7.EDUCATION/AWARENESS/ TRAINING & EXTENSION:

Yogesh Aneja, A.K.Ghosh, A.B.Raulkar, Prof. Waman Turile, Dilip Gode, Dr.S.B.Sukalika, V. G. Ghuge

8. INSTITUTIONAL FRAMEWORK:

Manohar Hikare- Dy. Commissioner-Nagpur, Sanjay Thakre- Dy. CF-Chandrapur, S. G. Raut- Dy. CF-Wildlife Nagpur, Dilip Gode, Datta Patil-YUVA Nagpur, Yamini Chaudhary, Ratnamala Vaidhya, Dinesh Gholse & A.S.Kalaskar, DM, Bramhapuri.

9. SUSTAINABLE USE OF BIODIVERSITY/ PEOPLE'S PARTICIPATION:

Sayyad Babu-DFO Nagpur, Datta Patil, Avil Borkar-Bhandara, Hiranman Warkhede- Gadchiroli, Sanjay Thakre- Dy. CF Chandrapur, Suryabhan Khobragade-Bramhapuri, Dilip Gode, Prof. Shemala- Chandrapur, Virendra Meshram - Mul, Mrs. Yamini Chaudhary-Nagpur, Prabkakar Thosar- Narkhed, Rambabu, Dy. CF- Bhanadra, Mrs. Shilpa Mirashi, Chondhikar RFO-Mul, Gajanan Ishtam- Satara Tukum

10. LEGISLATIVE & POLICY FRAMEWORK:

R. B. Sule, retd. P. C. C. F-Nagpur, Dr.P.K.Gandhi, Adv. P. N. Chandurkar-Nagpur, Dilip Gode, Adv. Sanjay Gajbhiye, Dinesh Gholse, Sanjay Thakre, S. G. Raut, Dy. CF - Wildlife, Adv.P. D. Rahangade, Gondia

D) Members of Sub- groups from Bastar region:**1.FLORA:**

Vishal Bharat, S. S. Sharma, S. N. Kothe, Raja Ram Tripathi, L. N. S. Kushwaha, Dr. Priti Joshi, and Madhu Ramnath, Diwakar Mishra, CF-Jagdalpur, S.K.Chauhan, CF-Kanker

2.FAUNA:

Sanjay Mokhariya, Kaushalendra Kumar DCF - Bastar, B.L.Bharat, L. L. Uike, M. A. Iqbal, Sharad Chandra Verma, M. R. Dehari, and Namrata Kumar Mithilesh, Dr.Suri Babu, Dr. Anuj Bhatnagar.

3. AGRICULTURE:

Nageshwar Lal, Hitendra Mrvas, H.K.Mitra, Dr. H.C.Nanda, Dr.S.S.Shaha, Vijay Bharat, Netrapal Singh, Himanshu Kumar, Dr.Ku.Ratna Nashine.

4.LIVESTOCK/POULTRY:

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5.PANCHAYAT:

Arvin Netam, Ex-MP, Mrs.Aradhana Markam, President, Zilla Panchayat- Dantewada, Sai Manohar Sharma, CEO-Dantewada, Anand Babu, CEO-Kanker, B. P. Tripathi, and Alok Tiwari, Mrs. Shanti Salam.

6.LEGAL / POLICY:

Adv. Arjun Nag, Adv. Mahendra Mahawar, Dr. Shailesh Jain,

7.INDIGENOUS KNOWLEDGE:

Dr. Shahsi Pande, S. S. Sharma, M. A. Iqbal.

8.PEOPLE'S PARTICIPATION:

Sanjay Shukla, Dy. CF, M. A. Iqbal, Rajnish Agrawal, Narayan Singh, Mrs.kalavati, and Hitendra Srivas.

9.INSTITUTIONAL FRAMEWORK:

H. K. Mitra, J. L. Dariyo, and Sanjay Mokhariya.

10.EDUCATION/TRAINING & EXTENSION:

Himanshu Kumar Jha, Basat Awasthi, and Kala Pathak.

11.RESEARCH & DEVELOPMENT:

Alok Tiwari, Himanshu Jha, and L. N. S. Kushwah.

12. CULTURE

P.R.Taram, RFO, Dr.R. P. Athparia, Anthropological Survey of India.

A list of the officials, NGOs and other stakeholders involved in NBSAP process from Vidarbha region.

1. Mr.Manukumar Srivastava, District Collector, Nagpur District, Collector Office, Civil lines, Nagpur – 440001
2. Mrs.Ashwini Kulkarni, Chief Executive Officer, Zilla Parishad, Nagpur.
3. Mr.Milind Mhaiskar, Collector, Wardha district.
4. Mrs. Manisha Mhaiskar, CEO, Zilla Prishad, Wardha
5. Mr. Wadaskar, Divisional Joint Director, Agriculture Department, Shivneri building, opp. Dagdi Park, Ramdaspath, Nagpur
6. Dr. S. M. Ali, Regional Joint Director, Nagpur Region, Animal Husbandry, Nagpur
7. Mr. G. B. Badwaik, Representative of Deputy Director, Fisheries, Zero Milestones, Opp. Govt. Book Depot, Civil lines, Nagpur – 440001
8. Mr. G. G. Katturwar, Dy. Director, Geology and Mining, Rami Kothi, Pushparaj building, Opp. G. P. O, Civil lines, Nagpur – 440001
9. The Director (Sericulture), 143, Shivaji Nagar, Dharampeth extension, Nagpur – 440010
10. The Regional Officer, Maharashtra Pollution Control Board, 6th floor, Udyog Bhavan, Civil lines, Nagpur – 440001
11. The Deputy Director (Education) Old Morris College T- point, Sitabuldi, Nagpur
12. The Director, Central Institute of Cotton Research, Panjari, Nagpur
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14. Mr. Rajan Bhaware, Collector, Bhandara District, Bhandara
15. Mr. Lokesh Chandra, Collector, Gondia District, Gondia
16. Mr. D. N. Kamble, Additional CEO, Zilla Parishad, Circuit House, Bhandara
17. Mr. Parag Jain, Chief Executive Officer, Zilla Parishad, Chandrapur
18. Mr. V. S. Barde, Additional CEO, Zilla Parishad, Nagpur

19. Mrs. Abha Shukla, CEO, Zilla Parishad Gondia
20. Mr. S. R. Bopte, Additional Chief Executive Officer, Zilla Parishad, Gondia
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23. The Regional Deputy Director, Fisheries, Zero Milestone, Civil lines, Nagpur 01
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26. Mr. J. P Gupta, Collector, Chandrapur District, Chandrapur
27. Mr. B. V. Gopal Reddy, Collector, Gadchiroli District, Gadchiroli
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29. Mr. S. D. Charde, Dy. Commissioner (ED), Nagpur
30. Mr. M. H. Hiwanj, Deputy. Commissioner (Resettlement), Nagpur.
31. Mr. D. G. Philip, Dy. Commissioner (GAD), Nagpur
32. MR. A. K. Zade, Additional Collector & OSD, Amravati
33. Mr. A. Z. Chole, Dy. Director, Ground Water Survey and Development, Civil lines, Nagpur
34. Mr. R. G. Deshmukh, Director, Geology and Mining, Civil lines, Nagpur
35. Mr. S. N. Rode, Joint Director, District Industries Center, Civil lines, Nagpur
36. Dr. R. N. Thombare, Dy. Director, Health Service, Nagpur Circle, Nagpur
37. Mr. Sharad Choudhary, Director, Information & Public Relations, Nagpur
38. Mr V. N. Wagade, Chief Engineer, Irrigation Dept. Nagpur
39. Mr. N. K. Kulkarni, Executive Director, Vidarbha Irrigation Development Corporation, Civil lines, Nagpur
40. Mr. M. D. Khobragade, Under Secretary, Law & judiciary, Civil lines, Nagpur

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48. The Controller General, Indian Bureau of Mines, Civil lines, Nagpur
49. The Regional Director, Central Ground Water Board, Civil lines, Nagpur
50. Mr. V. N. Wakpanjarwar, Director, Central Water Commission, Nagpur
51. The Director, National Research Center for Citrus, Nagpur
52. Mineral Exploration Corporation Ltd., Nagpur
53. Western Coalfields Ltd., Nagpur
54. Mr. S. K. Bali, Principal Chief Conservator of Forests, Nagpur
55. Mr. B. Majumdar, Chief Conservator of Forests, Wildlife, Nagpur
56. Mr. Anil Mohan, Conservator of Forests, Civil lines, Nagpur
57. Mr. Sayyed Babu, Deputy Conservator of Forests (JFM), Nagpur
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60. Mr. Pravinkumar Srivastava, Deputy conservator of Forests, Chaparala Sanctuary, Chandrapur

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92. Vidarbha Lok Vikas Manch, Nagpur
93. Gramin Yuva Pragatik Mandal, Bhandara
94. National Tribal Welfare Society, Sawargaon Katol (distt. Nagpur)
95. Vidarbha Paryavaran Parishad.
96. Mr. Avil Borkar (sustainable Agriculture), Bhandara
97. Adv. Sanjay Gajbhiye, Ex. Honorary Wildlife Warden, Bhandara
98. Dr. Chandrashekhhar Sharma (Veterinary Expert), Shradhananad peth Nagpur
99. Mr. R. S. Bhangu, ACF, Office of the Conservator of Forests, Nagpur
100. Dr. Sriram Bhuskute, (Botanist), Bhavabhuti College, Amgaon (distt. Gondia)
101. Dr. R. P. Moghe, Research officer, Ankur seeds ltd, Nagpur.
102. MR. Suryabhanji Khobragade, Krushak Charcha Mandal, Saighata (distt. Chandrapur)

103. Mr. Vijay Kumar Shende (Agriculturist) Talodhi (distt. Chandrapur)
104. Mr. Suresh Alurwar, DY. CF Nagpur
105. Mr. Narayanpatil Dongarwar (Agriculturist) Kanohli (distt. Gondia)
106. Dr. N. R. Ugemege (Botanist) Laxminagar, Nagpur
107. Mr. Datta Patil, YUVA, Nagpur
108. Adv. P. N. Chandurkar, MES Apartments, Temple Bazaar road, civil lines, Nagpur – 10.
109. Dr. R. P. Thakre, Reader, Dept. Of Botany, Nagpur University Campus, Amravati Road, Nagpur.
110. Dr. A. Chaturvedi, Reader, Dept. Of Botany, Nagpur.
111. Dr. M. M. Jamkhindikar, Retd. CCF, Nagpur
112. Dr. R. J. Andrew, Deptt. of Zoology, Shivaji Science, Nagpur.
113. Dr. A. D. Choudhary, Reader, Dept. Of Botany. Nagpur
114. Dr. Gurudas Semaskar, Sandesh, Gadchiroli
115. Prof. W. R. Bhandarkar, Newzabai Hitkarni College, Brahmapuri, Distt. Chandrapur
116. Prof. V. M. Mahajan, Preerna Nisarg Mandal, Brahampuri.
117. Mr. Santosh Warkhede, YE, VNCS, Bhadravati, Distt. Chandrapur
118. Adv. P. D. Rahangadale, Ex- MLA, Katantola, Distt. Gondia
119. Center of Science for Villages, Wardha.

Officials and the stakeholders involved in NBSAP process from Bastar region

120. Mr. Vivek Dhand, Principal Secretary - B & C, Chattisgarh State Administration, Raipur
121. Mr. P. C. Dalei, Divisional Commissioner, Bastar Region, Jagdalpur
122. Mr. Arvind Netam, Ex – MP & Union Minister, Jagdalpur
123. Mr. J. L. Dariyo, Deputy Director, District PRO, Jagdalpur

124. Mr. H. C. Patle, Deputy Commissioner, (Development), Jagdalpur
125. Mr. Kaushalendra Kumar, Dy. Director, Kanger Valley National Park, Jagdalpur
126. Dr. Krishnakumar Jha, Director (E. F. S. C), Jagdalpur
127. Mr. Alok Tiwari, Deputy Conservator of Forests, Jagdalpur
128. Mr. Vishal Bharat, Retd. Forest Officer, BASCON, Jagdalpur
129. Mr. H. K. Mitra, Project Manager, Bastar, Jagdalpur
130. Dr. S. P. Mishra, Jt. Director, Animal Husbandry, Jagdalpur
131. Mr. Shishir Pandey, Project Manager, Bastar
132. Mr. Zavier Tigga, Dantewada
133. Mr. Shashikant Deshpande, Executive Engineer, P. W. D, Jagdalpur
134. Mr. Sanjay Shukla, Deputy Conservator of Forests, Jagdalpur
135. Dr. S.S. Shaw, Jt. Director, Indira Gandhi Agricultural Research Center, Khumarwand, Jagdalpur
136. Mr. S. C. Nanda, Scientist, Indira Gandhi Agricultural Research Center, Khumarwand, Jagdalpur
137. Mr. Sharad Chandra Verma, President, BASCON, Nayapara, Jagdalpur
138. Mr. Hitendra Srivas, Secretary, "Dharohar", Jagdalpur
139. Mr. Vijay Bharat, Secretary, Bastar Nature Conservative Society, Jagdalpur
140. Mr. Mahesh Mahawar, President, Bastar Nature Conservative Society, Jagdalpur
141. Balwant Singh, Deputy Project Manager, Zilla Panchayt, Jagdalpur
142. Mr. L. S. Khushwah, Forest Ranger, Jagdalpur.
143. Mr. A. D. Sant, Scientist, ICADR, Jagdalpur
144. Mr. B. B. Jain, Deputy Director, Jagdalpur
145. Mr. Himanshu Jha, Member, Y. E. P. O, Jagdalpur
146. Mr. L. L. Uike, Deputy Director, Indravati National Park, Dantewada

147. Mr. Jay Narayan Singh, President, “ Vanya”, Dantewada
148. Mr. Sitaram Bhaskar Janpath, Member, “Vanya”, Dantewada
149. Mr. P. P. Vishwakarma, Retd.Forest Officer, Jagdalpur
150. Mrs. Kalawati, Village Aasna, Jagdalpur
151. Mr. Parshuram Kach, Village Aasna, Jagdalpur
152. Mr. Sai Manohar Sharma CEO, Kanker
153. Mr. Subodh kumar Singh, CEO, Bastar
154. Mr. N. S. Mandavi, CEO, Dantewada
155. Mr. Amerendra Pandey, DEBATE, Jagdalpur
156. Mr. Sanjay Mokhariya, Director, Indravati Tiger Project, Jagdalpur
157. Mr. J. R. Chaurasia, Tehsildar, Jagdalpur
158. Mr.S. S.Chouhan, Conservator of Forests, Kanker Forest Circle, Kanker
159. Mr.Sanjay Mokhariya, Conservator of Forests-Wildlife, Jagdalpur
160. Mr.S.S.Sharma, Dept. Of Horticulture, ICADR, Khumarwand, Jagdalpur
161. Mr. M. A. Iqbal, Journalist, Asna-Jagdalpur
162. Mr. L. N. S. Kushwaha, F. R. O, Konta Social Forestry Division, Jagdalpur
163. Mr. B. S. Bislanwar, APO, Zilla Panchayat, Bastar-Jagdalpur
164. Mr. Jai Narayan Singh, VANYA Self Service Organization Gram kumharpara
Dist: Dantewada
165. Ram Krishna Mission, Narayanpur
166. Mr. S. K. Mehra, Regional Officer, M. P. Pollution Control Board, Jagdalpur
167. Miss. Ratna Nashine, Scientist, Krishi Vigyan Kendra, Jagdalpur
168. Dr. Sunita Roy, Asstt. Veterinary Surgeon, DANIDA – BILDP, Jagdalpur.
169. Mrs. Shanti Salam, Sarpanch, Gram – Kangoli, Distt. Bastar

170. Mrs. Aradhana Markam, Chairman, Zilla Panchyat, Dantewada
171. Mrs. Harawati, Adivasi Harijan Kalyan Samitee, Asna distt. Jagdalpur.
172. Mr. Dhruupal Singh Shah, Ex. Minister, Kutru, Distt. Dantewada
173. Mr. Masiha Ram, Kuhkameta, Abujmar, Bastar

Villages Involved:

1. Nagpur District:

Walani, Dhapewada, Khandala, Hiwra, Ramtek, Patharai, Sawara, Deolapar, Nawargaon, Mohpa, Wadamba, Nimtola, Ghatpendhri, Totladoh, Beldha, Mouda, Umred, Surgaon

2. Gondia & Bhandara district:

Nakkitola, Katangtola, Kanholi, Khoba, Palasgaon, Paonidhabe, Dhabetekdi, Tidka, Jhasinagar, Bhasbodan, Chutia, Rampuri, Elodi, Nawegaon, Gangazari.

3. Chandrapur district

All JFM- villages in Mul, Nagbhid and Brahmapuri Talukas.

4. Gadchiroli district

Gadchiroli, Porla, Chaprala, Talodhi (Mokasa), Dhanora, Karwapa, Boldha and other Villages, where YE groups of VNCS are working.

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Abbreviations used in the text:

APC	Agricultural Price Commission
AHKS	Adivasi Harijan Kalyan Samittee.
AI	Artificial Insemination.
AC	Advisory Committee
BILDp	Bastar Integrated Livestock Development Programme
BASCON	Bastar Society for Conservation of Nature
BWLS	Bhamragarh Wildlife Sanctuary
BNHS	Bombay Natural History Society
BSAP	Biodiversity strategy & Action Plan
BSI	Botanical Survey of India
CMCS	Community Managed Conservation Sites
CFM	Community Forest Management
CMA	Community Managed Area
CSCTDC	Chattisgarh State Cooperative Tribal Development Corporation
CBO	Community Based Organizations
CCBP	Controlled Cattle Breeding Program
CS	Chattisgarh State
CFD	Chattisgarh Forest Department
CF	Conservator of Forests
CITES	The conservation on International Trade in Endangered Species.
Dy. CF/DCF	Deputy Conservator of Forests

DFO	Divisional Forest Officer
DM	Divisional Manager
DANIDA	Danish development Assistance
EIA	Environmental Impact Analysis
EMP	Environmental Management & Planning
FDA	Forest Development Authority
FDCM	Forest Development Corporation of Maharashtra
FD	Forest Division
FRLHT	Foundation for Revitalization of Local Health Traditions.
FPC	Forest Protection Committee
GIS	Geographic Information System
GMO	Genetically Modified Organisms.
ICAR	Indian Council For Agricultural Research
IPAM	Integrated Protected Area Management
IUCN	International Union for Conservation of Nature & Natural Resources.
IPR	Intellectual Property Right
IGAU	Indira Gandhi Agricultural University
JFWMNV	Joint Forest & Wildlife Management Network- Vidarbha
JFM	Joint Forest Management
JFMC	Judicial Magistrate-First Class
LUS	Land Use Statistics
MSEB	Maharashtra State Electricity Board
MSL	Mean Sea Level

MP	Madhya Pradesh
MOIL	Manganese Ore India Limited
MS	Maharashtra State
MFD	Maharashtra Forest Department
MRSAC	Maharashtra Remote Sensing Application Center
MCCTDC	Maharashtra Cooperative Corporation for Tribal Development
MCTDC	Maharashtra Cooperative Tribal Development Corporation
NMDC	National Mining Development Corporation
NGO	Non – Governmental Organization
NBPGR	National Bureau of Plant Genetic Resource
NTFP	Non – Timber Forest Produce
NWLS	Nagzira Wildlife Sanctuary
NNP	Nawegaon National Park
NBSAP	National Biodiversity Strategy & Action Plan
NBSS & LUP	National Bureau of Soil Survey & Land Use Planning.
NEERI	National Environmental Engineering Research Institute
NBAGB	National Bureau of Animal Genetic Resource
NDDP	National Dairy Development Program
NP	National Park
PA	Protected Area
PFPCS	Primary Forest Produce Cooperative Society
PKV	Dr. Punjabrao Deshmukh Krishi Vidyapeeth
PBR	Peoples' Biodiversity Register

PDS	Public Distribution System
PWD	Public Works Department
PCCF	Principal Chief Conservator of Forests
RRA	Rapid Rural Appraisal
RSAC	Remote Sensing Application Center.
RBCMA	Regional Biodiversity Conservation & Management Authority.
SFRI	State Forest Research Institute
SHG	Self Help Group
SG	Sub-working Group
TPS	Thermal Power Station
TATR	Tadoba Andhari Tiger Reserve
TGA	Total Geographic Area
UGC	University Grants Commission
UNDP	United Nations Development Program
VED	Village Eco - Development
VNCS	Vidarbha Nature Conservation Society
VFPC	Village Forest Protection Committee
WLS	Wildlife Sanctuary
WII	Wildlife Institute of India
WG	Working Group
ZARS	Zonal Agricultural Research Station.

